**How are devices represented in UNIX?**

All devices are represented by files called special files that are located in/dev directory. Thus, device files and other files are named and accessed in the same way. A 'regular file' is just an ordinary data file in the disk. A 'block special file' represents a device with characteristics similar to a disk (data transfer in terms of blocks). A 'character special file' represents a device with characteristics similar to a keyboard (data transfer is by stream of bits in sequential order).

## What is 'inode'?

All UNIX files have its description stored in a structure called 'inode'. The inode contains info about the file-size, its location, time of last access, time of last modification, permission and so on. Directories are also represented as files and have an associated inode. In addition to descriptions about the file, the inode contains pointers to the data blocks of the file. If the file is large, inode has indirect pointer to a block of pointers to additional data blocks (this further aggregates for larger files). A block is typically 8k.
Inode consists of the following fields:
File owner identifier
File type
File access permissions
File access times
Number of links
File size
Location of the file data

## Brief about the directory representation in UNIX

A Unix directory is a file containing a correspondence between filenames and inodes. A directory is a special file that the kernel maintains. Only kernel modifies directories, but processes can read directories. The contents of a directory are a list of filename and inode number pairs. When new directories are created, kernel makes two entries named '.' (refers to the directory itself) and '..' (refers to parent directory).
System call for creating directory is mkdir (pathname, mode).

## What are the Unix system calls for I/O?

open(pathname,flag,mode) - open file
creat(pathname,mode) - create file
close(filedes) - close an open file
read(filedes,buffer,bytes) - read data from an open file
write(filedes,buffer,bytes) - write data to an open file
lseek(filedes,offset,from) - position an open file
dup(filedes) - duplicate an existing file descriptor
dup2(oldfd,newfd) - duplicate to a desired file descriptor
fcntl(filedes,cmd,arg) - change properties of an open file
ioctl(filedes,request,arg) - change the behaviour of an open file
The difference between fcntl anf ioctl is that the former is intended for any open file, while the latter is for device-specific operations.

## How do you change File Access Permissions?

Every file has following attributes:
owner's user ID ( 16 bit integer )
owner's group ID ( 16 bit integer )
File access mode word
'r w x -r w x- r w x'
(user permission-group permission-others permission)
r-read, w-write, x-execute
To change the access mode, we use chmod(filename,mode).
Example 1:
To change mode of myfile to 'rw-rw-r--' (ie. read, write permission for user - read,write permission for group - only read permission for others) we give the args as:
chmod(myfile,0664) .
Each operation is represented by discrete values
'r' is 4
'w' is 2
'x' is 1
Therefore, for 'rw' the value is 6(4+2).
Example 2:
To change mode of myfile to 'rwxr--r--' we give the args as:
chmod(myfile,0744).

## What are links and symbolic links in UNIX file system?

A link is a second name (not a file) for a file. Links can be used to assign more than one name to a file, but cannot be used to assign a directory more than one name or link filenames on different computers.
Symbolic link 'is' a file that only contains the name of another file.Operation on the symbolic link is directed to the file pointed by the it.Both the limitations of links are eliminated in symbolic links.
Commands for linking files are:

Link ln filename1 filename2
Symbolic link ln -s filename1 filename2

## What is a FIFO?
FIFO are otherwise called as 'named pipes'. FIFO (first-in-first-out) is a special file which is said to be data transient. Once data is read from named pipe, it cannot be read again. Also, data can be read only in the order written. It is used in interprocess communication where a process writes to one end of the pipe (producer) and the other reads from the other end (consumer).

## How do you create special files like named pipes and device files?
The system call mknod creates special files in the following sequence.
1. kernel assigns new inode,
2. sets the file type to indicate that the file is a pipe, directory or special file,
3. If it is a device file, it makes the other entries like major, minor device numbers.
For example:
If the device is a disk, major device number refers to the disk controller and minor device number is the disk.

## Discuss the mount and unmount system calls
The privileged mount system call is used to attach a file system to a directory of another file system; the unmount system call detaches a file system. When you mount another file system on to your directory, you are essentially splicing one directory tree onto a branch in another directory tree. The first argument to mount call is the mount point, that is , a directory in the current file naming system. The second argument is the file system to mount to that point. When you insert a cdrom to your unix system's drive, the file system in the cdrom automatically mounts to /dev/cdrom in your system.

## How does the inode map to data block of a file?
Inode has 13 block addresses. The first 10 are direct block addresses of the first 10 data blocks in the file. The 11th address points to a one-level index block. The 12th address points to a two-level (double in-direction) index block. The 13th address points to a three-level(triple in-direction)index block. This provides a very large maximum file size with efficient access to large files, but also small files are accessed directly in one disk read.

## What is a shell?
A shell is an interactive user interface to an operating system services that allows an user to enter commands as character strings or through a graphical user interface. The shell converts them to system calls to the OS or forks off a process to execute the command. System call results and other information from the OS are presented to the user through an interactive interface. Commonly used shells are sh,csh,ks etc.

## Brief about the initial process sequence while the system boots up.
While booting, special process called the 'swapper' or 'scheduler' is created with Process-ID 0. The swapper manages memory allocation for processes and influences CPU allocation. The swapper inturn creates 3 children:
the process dispatcher,
vhand and
dbflush
with IDs 1,2 and 3 respectively.
This is done by executing the file /etc/init. Process dispatcher gives birth to the shell. Unix keeps track of all the processes in an internal data structure called the Process Table (listing command is ps -el).

## What are various IDs associated with a process?
Unix identifies each process with a unique integer called ProcessID. The process that executes the request for creation of a process is called the 'parent process' whose PID is 'Parent Process ID'. Every process is associated with a particular user called the 'owner' who has privileges over the process. The identification for the user is 'UserID'. Owner is the user who executes the process. Process also has 'Effective User ID' which determines the access privileges for accessing resources like files.
getpid() -process id
getppid() -parent process id
getuid() -user id
geteuid() -effective user id

## Explain fork() system call.
The `fork()' used to create a new process from an existing process. The new process is called the child process, and the existing process is called the parent. We can tell which is which by checking the return value from `fork()'. The parent gets the child's pid returned to him, but the child gets 0 returned to him.

## Predict the output of the following program code

main()
{
fork();
printf("Hello World!");
}
Answer:
Hello World!Hello World!

**Explanation:**
The fork creates a child that is a duplicate of the parent process. The child begins from the fork().All the statements after the call to fork() will be executed twice.(once by the parent process and other by child). The statement before fork() is executed only by the parent process.

**Predict the output of the following program code**
```
main()
{
fork(); fork(); fork();
printf("Hello World!");
}
```

Answer:
"Hello World" will be printed 8 times.
Explanation:
2^n times where n is the number of calls to fork()

**List the system calls used for process management:**
System calls Description
fork() To create a new process
exec() To execute a new program in a process
wait() To wait until a created process completes its execution
exit() To exit from a process execution
getpid() To get a process identifier of the current process
getppid() To get parent process identifier
nice() To bias the existing priority of a process
brk() To increase/decrease the data segment size of a process

**How can you get/set an environment variable from a program?:**
Getting the value of an environment variable is done by using `getenv()'. Setting the value of an environment variable is done by using `putenv()'.

**How can a parent and child process communicate?**
A parent and child can communicate through any of the normal inter-process communication schemes (pipes, sockets, message queues, shared memory), but also have some special ways to communicate that take advantage of their relationship as a parent and child. One of the most obvious is that the parent can get the exit status of the child.

**What is a zombie?**
When a program forks and the child finishes before the parent, the kernel still keeps some of its information about the child in case the parent might need it - for example, the parent may need to check the child's exit status. To be able to get this information, the parent calls `wait()'; In the interval between the child terminating and the parent calling `wait()', the child is said to be a `zombie' (If you do `ps', the child will have a `Z' in its status field to indicate this.)

**What are the process states in Unix?**
As a process executes it changes state according to its circumstances. Unix processes have the following states:
Running : The process is either running or it is ready to run .
Waiting : The process is waiting for an event or for a resource.
Stopped : The process has been stopped, usually by receiving a signal.
Zombie : The process is dead but have not been removed from the process table.

**UNIX INTERVIEW QUESTIONS**

I've put together a document here to use to evaluate someone's UNIX knowledge. You can freely use and distribute this document providing it is in accordance with the TFS © Policy on our main page.

**Level I**

**How can you tell what shell you are running on a UNIX system?**

**Answer :**

You can do the Echo $RANDOM. It will return a undefined variable if you are from the C-Shell, just a return prompt if you are from the Bourne shell, and a 5 digit random numbers if you are from the Korn shell. You could also do a ps -l and look for the shell with the highest PID.

**What are conditions on which deadlock can occur while swapping the processes?**

**Answer :**
All processes in the main memory are asleep. All 'ready-to-run' processes are swapped out.
There is no space in the swap device for the new incoming process that are swapped out of the main memory. There is no space in the main memory for the new incoming process.

### How do you change File Access Permissions?

**Answer :**
Every file has following attributes:
owner's user ID ( 16 bit integer )
owner's group ID ( 16 bit integer )
File access mode word
'r w x -r w x- r w x'
(user permission-group permission-others permission)
r-read, w-write, x-execute
To change the access mode, we use chmod(filename,mode).
Example:
To change mode of myfile to 'rw-rw-r–' (ie. read, write permission for user - read,write permission for group - only read permission for others)  we give the args as:
chmod(myfile,0664) .
Each operation is represented by discrete values
'r' is 4
'w' is 2
'x' is 1
Therefore, for 'rw' the value is 6(4+2).
Example 2:
To change mode of myfile to 'rwxr–r–' we give the args as:
chmod(myfile,0744).

### List the system calls used for process management.

**Answer :**
System calls         Description
fork()                To create a new process
exec()                To execute a new program in a process
wait()                To wait until a created process completes its execution
exit()                To exit from a process execution
getpid()             To get a process identifier of the current process
getppid()             To get parent process identifier
nice()                To bias the existing priority of a process
brk()                 To increase/decrease the data segment size of a process

### What is the difference between Swapping and Paging?

**Answer :**

Swapping:
Whole process is moved from the swap device to the main memory for execution. Process size must be less than or equal to the available main memory. It is easier to implementation and overhead to the system. Swapping systems does not handle the memory more flexibly as compared to the paging systems.

Paging:
Only the required memory pages are moved to main memory from the swap device for execution. Process size does not matter. Gives the concept of the virtual memory.

It provides greater flexibility in mapping the virtual address space into the physical memory of the machine. Allows more number of processes to fit in the main memory simultaneously. Allows the greater process size than the available physical memory. Demand paging systems handle the memory more flexibly.

### What is the difference between cmp and diff commands?
**Answer :**

cmp - Compares two files byte by byte and displays the first mismatch
diff - tells the changes to be made to make the files identical

### What is meant by the nice value?
**Answer :**

Nice value is the value that controls {increments or decrements} the priority of the process. This value that is returned by the nice () system call. The equation for using nice value is:

**Priority = ("recent CPU usage"/constant) + (base- priority) + (nice value)**
Only the administrator can supply the nice value. The nice () system call works for the running process only. Nice value of one process cannot affect the nice value of the other process.

## What is a daemon?

**Answer :**

A daemon is a process that detaches itself from the terminal and runs, disconnected, in the background, waiting for requests and responding to them. It can also be defined as the background process that does not belong to a terminal session. Many system functions are commonly performed by daemons, including the sendmail daemon, which handles mail, and the NNTP daemon, which handles USENET news. Many other daemons may exist. Some of the most common daemons are:

init: Takes over the basic running of the system when the kernel has finished the boot process.

inetd: Responsible for starting network services that do not have their own stand-alone daemons. For example, inetd usually takes care of incoming rlogin, telnet, and ftp connections.

cron: Responsible for running repetitive tasks on a regular schedule.

## What are the process states in UNIX?

**Answer :**
As a process executes it changes state according to its circumstances. Unix processes have the following states:
**Running** : The process is either running or it is ready to run .
**Waiting** : The process is waiting for an event or for a resource.
**Stopped** : The process has been stopped, usually by receiving a signal.
**Zombie** : The process is dead but have not been removed from the process table.

## Interview Questions

### PHP

1. Create a PHP web script with the following attributes: on start, three HTML form elements are shown: an string input field, a checkbox field, a dropdown/pull down list with 5 elements and a submit button. On submission, the form should be redisplayed (while remaining all options/inputs as the user has selected/entered them). Additionally, the selections/inputs of the user should be displayed in text. Please solve this without the use of any external libraries.
2. What are the differences between Get and post methods in form submitting, give the case where we can use get and we can use post methods?
3. what output do you get here?
   ```
   <?php
   $here = "/home/httpd/html/test ";
   list ($j1,$j2,$j3,$j4) = split('/',$here);
   print "$j3";
   ?>
   ```

   a. home
   b. Array
   c. test
   d. httpd

4. What is the difference between the functions unlink() and unset()?
5. How can we encrypt the username and password using php?
6. If you have to work with dates in the following format: "Tuesday, February 14, 2006 @ 10:39 am", how can you convert them to another format, that is easier to use?
7. How i will check that user is, logged in or not. i want to make it a function and i want to use in each page and after login i want to go in current page(same page. where i was working)?
8. =,==,=== - what is the difference between these?
9. Are variables passed to functions by reference or value?
10. What will these functions do? (explode(), file(), mysql_insert_id(), time() )

### Smarty

11. What is smarty?
12. Can I have a Smarty template include other Smarty templates?
13. How do you iterate over an array with Smarty? -
    Let's say you've got an array of user comments.
    ```
    $comments = array (
                       [0] => array(
                         'author' => 'ABC',
                         'title' => 'Smarty',
                         'text' => 'Smarty tutorial'
                         ),
    ```

```
            [1] => array(
              'author' => 'XYZ',
              'title' => 'PHP',
              'text' => 'PHP tutorial'
              )
          );
```

14. How can we capitalize and lower the string using smarty.

## MySql

15. How can we know the number of days between two given dates using MySQL?
16. How would you select all the users, whose email address is null(empty)?
17. Write down the insert , update and delete query with database connectivity.
18. What is the difference between mysql_fetch_object and mysql_fetch_array, mysql_fetch_row() With example?
19. What is the query to get the number of "names" from a table that is occuring more than 10 times.
20. How can increase the performance of mysql select query?

The structure of table view buyers is as follows

```
+----------------+-------------+------+-----+---------+----------------+
| Field | Type | Null | Key | Default | Extra |
+----------------+-------------+------+-----+---------+----------------+
| user_pri_id | int(15) | | PRI | NULL | auto_increment |
| userid | varchar(10) | YES | | NULL | |
+----------------+-------------+------+-----+---------+----------------+
```

the value of user_pri_id the last row 2345 then What will happen in the following conditions

Condition1: Delete all the rows and insert another row then What is the starting value for this auto incremented field user_pri_id
,
Condition2: Delete the last row(having the field value 2345) and insert another row then What is the value for this auto incremented field user_pri_id

21. A select query over a large table runs very slow because of the growing number of entries in that table. What different measures could be taken to improve speed?

## Javascript

22. How can we submit a form without a submit button?
23. How you will send data from JavaScript to PHP?
24. How can we send mail using JavaScript?
25. How do you convert numbers between different bases in JavaScript?
26. What is negative infinity?
27. What does "1"+2+4 evaluate to?
28. How about 2+5+"8"?
29. How do you create a new object in JavaScript?
30. What's a way to append a value to an array?
31. What are JavaScript types?
32. What does isNaN function do?
33. What boolean operators does JavaScript support?

## Ajax
34. What API function provides the connection between the client and server?
35. What are readystates and response codes in Ajax?

*PHP Interview Questions And Answers* [Php Frequently Asked Questions ,Php FAQ ]

**What's PHP ?**
The PHP Hypertext Preprocessor is a programming language that allows web developers to create dynamic content
that interacts with databases. PHP is basically used for developing web based software applications.

**What Is a Session?**
A session is a logical object created by the PHP engine to allow you to preserve data across subsequent HTTP
requests.

There is only one session object available to your PHP scripts at any time. Data saved to the session by a script can be
retrieved by the same script or another script when requested from the same visitor.

Sessions are commonly used to store temporary data to allow multiple PHP pages to offer a complete functional
transaction for the same visitor.

## What is meant by PEAR in php?

Answer1:

PEAR is the next revolution in PHP. This repository is bringing higher level programming to PHP. PEAR is a framework and distribution system for reusable PHP components. It eases installation by bringing an automated wizard, and packing the strength and experience of PHP users into a nicely organised OOP library. PEAR also provides a command-line interface that can be used to automatically install "packages"

Answer2:

PEAR is short for "PHP Extension and Application Repository" and is pronounced just like the fruit. The purpose of PEAR is to provide:
A structured library of open-sourced code for PHP users
A system for code distribution and package maintenance
A standard style for code written in PHP
The PHP Foundation Classes (PFC),
The PHP Extension Community Library (PECL),
A web site, mailing lists and download mirrors to support the PHP/PEAR community
PEAR is a community-driven project with the PEAR Group as the governing body. The project has been founded by Stig S. Bakken in 1999 and quite a lot of people have joined the project since then.

## How can we know the number of days between two given dates using PHP?

Simple arithmetic:

$date1 = date('Y-m-d');
$date2 = '2006-07-01';
$days = (strtotime() - strtotime()) / (60 * 60 * 24);
echo "Number of days since '2006-07-01': $days";

## How can we repair a MySQL table?

The syntex for repairing a mysql table is:

REPAIR TABLE tablename
REPAIR TABLE tablename QUICK
REPAIR TABLE tablename EXTENDED

This command will repair the table specified.
If QUICK is given, MySQL will do a repair of only the index tree.
If EXTENDED is given, it will create index row by row.

## What is the difference between $message and $$message?

Anwser 1:
$message is a simple variable whereas $$message is a reference variable. Example:
$user = 'bob'

is equivalent to

$holder = 'user';
$$holder = 'bob';

Anwser 2:
They are both variables. But $message is a variable with a fixed name. $$message is a variable who's name is stored in $message. For example, if $message contains "var", $$message is the same as $var.

## What Is a Persistent Cookie?

A persistent cookie is a cookie which is stored in a cookie file permanently on the browser's computer. By default, cookies are created as temporary cookies which stored only in the browser's memory. When the browser is closed, temporary cookies will be erased. You should decide when to use temporary cookies and when to use persistent cookies based on their differences:
*Temporary cookies can not be used for tracking long-term information.
*Persistent cookies can be used for tracking long-term information.
*Temporary cookies are safer because no programs other than the browser can access them.
*Persistent cookies are less secure because users can open cookie files see the cookie values.

## What does a special set of tags <?= and ?> do in PHP?

The output is displayed directly to the browser.

## How do you define a constant?

Via define() directive, like define ("MYCONSTANT", 100);

## What are the differences between require and include, include_once?

Anwser 1:
require_once() and include_once() are both the functions to include and evaluate the specified file only once. If the specified file is included previous to the present call occurrence, it will not be done again.

But require() and include() will do it as many times they are asked to do.

Anwser 2:
The include_once() statement includes and evaluates the specified file during the execution of the script. This is a behavior similar to the include() statement, with the only difference being that if the code from a file has already been included, it will not be included again. The major difference between include() and require() is that in failure include() produces a warning message whereas require() produces a fatal errors.

Anwser 3:
All three are used to an include file into the current page.
If the file is not present, require(), calls a fatal error, while in include() does not.
The include_once() statement includes and evaluates the specified file during the execution of the script. This is a behavior similar to the include() statement, with the only difference being that if the code from a file has already been included, it will not be included again. It des not call a fatal error if file not exists. require_once() does the same as include_once(), but it calls a fatal error if file not exists.

Anwser 4:
File will not be included more than once. If we want to include a file once only and further calling of the file will be ignored then we have to use the PHP function include_once(). This will prevent problems with function redefinitions, variable value reassignments, etc.

## What is meant by urlencode and urldecode?

Anwser 1:
urlencode() returns the URL encoded version of the given string. URL coding converts special characters into % signs followed by two hex digits. For example: urlencode("10.00%") will return "10%2E00%25". URL encoded strings are safe to be used as part of URLs.
urldecode() returns the URL decoded version of the given string.

Anwser 2:
string urlencode(str) - Returns the URL encoded version of the input string. String values to be used in URL query string need to be URL encoded. In the URL encoded version:

Alphanumeric characters are maintained as is.
Space characters are converted to "+" characters.
Other non-alphanumeric characters are converted "%" followed by two hex digits representing the converted character.

string urldecode(str) - Returns the original string of the input URL encoded string.

For example:

$discount ="10.00%";
$url = "http://domain.com/submit.php?disc=".urlencode($discount);
echo $url;

You will get "http://domain.com/submit.php?disc=10%2E00%25".

## How To Get the Uploaded File Information in the Receiving Script?

Once the Web server received the uploaded file, it will call the PHP script specified in the form action attribute to process them. This receiving PHP script can get the uploaded file information through the predefined array called $_FILES. Uploaded file information is organized in $_FILES as a two-dimensional array as:
$_FILES[$fieldName]['name'] - The Original file name on the browser system.
$_FILES[$fieldName]['type'] - The file type determined by the browser.
$_FILES[$fieldName]['size'] - The Number of bytes of the file content.
$_FILES[$fieldName]['tmp_name'] - The temporary filename of the file in which the uploaded file was stored on the server.
$_FILES[$fieldName]['error'] - The error code associated with this file upload.

The $fieldName is the name used in the <INPUT TYPE=FILE, NAME=fieldName>.

## What is the difference between mysql_fetch_object and mysql_fetch_array?

MySQL fetch object will collect first single matching record where mysql_fetch_array will collect all matching records from the table in an array

## How can I execute a PHP script using command line?

Just run the PHP CLI (Command Line Interface) program and provide the PHP script file name as the command line argument. For example, "php myScript.php", assuming "php" is the command to invoke the CLI program.
Be aware that if your PHP script was written for the Web CGI interface, it may not execute properly in command line environment.

**I am trying to assign a variable the value of 0123, but it keeps coming up with a different number, what's the problem?**
PHP Interpreter treats numbers beginning with 0 as octal. Look at the similar PHP interview questions for more numeric problems.

**Would I use print "$a dollars" or "{$a} dollars" to print out the amount of dollars in this example?**
In this example it wouldn't matter, since the variable is all by itself, but if you were to print something like "{$a},000,000 mln dollars", then you definitely need to use the braces.

**What are the different tables present in MySQL? Which type of table is generated when we are creating a table in the following syntax: create table employee(eno int(2),ename varchar(10))?**
Total 5 types of tables we can create
1. MyISAM
2. Heap
3. Merge
4. INNO DB
5. ISAM
MyISAM is the default storage engine as of MySQL 3.23. When you fire the above create query MySQL will create a MyISAM table.

**How To Create a Table?**
If you want to create a table, you can run the CREATE TABLE statement as shown in the following sample script:

```
<?php
include "mysql_connection.php";

$sql = "CREATE TABLE Tech_links ("
. " id INTEGER NOT NULL"
. ", url VARCHAR(80) NOT NULL"
. ", notes VARCHAR(1024)"
. ", counts INTEGER"
. ", time TIMESTAMP DEFAULT sysdate()"
. ")";
if (mysql_query($sql, $con)) {
print("Table Tech_links created.\n");
} else {
print("Table creation failed.\n");
}

mysql_close($con);
?>
```

Remember that mysql_query() returns TRUE/FALSE on CREATE statements. If you run this script, you will get something like this:
Table Tech_links created.

**How can we encrypt the username and password using PHP?**
Answer1
You can encrypt a password with the following Mysql>SET PASSWORD=PASSWORD("Password");

Answer2
You can use the MySQL PASSWORD() function to encrypt username and password. For example,
INSERT into user (password, ...) VALUES (PASSWORD($password")), ...);

**How do you pass a variable by value?**
Just like in C++, put an ampersand in front of it, like $a = &$b

**What is the functionality of the functions STRSTR() and STRISTR()?**
string strstr ( string haystack, string needle ) returns part of haystack string from the first occurrence of needle to the end of haystack. This function is case-sensitive.

stristr() is idential to strstr() except that it is case insensitive.

**When are you supposed to use endif to end the conditional statement?**
When the original if was followed by : and then the code block without braces.

**How can we send mail using JavaScript?**
No. There is no way to send emails directly using JavaScript.

But you can use JavaScript to execute a client side email program send the email using the "mailto" code. Here is an example:

```
function myfunction(form)
{
tdata=document.myform.tbox1.value;
location="mailto:mailid@domain.com?subject=...";
return true;
}
```

### What is the functionality of the function strstr and stristr?

strstr() returns part of a given string from the first occurrence of a given substring to the end of the string. For example: strstr("user@example.com","@") will return "@example.com".
stristr() is identical to strstr() except that it is case insensitive.

### What is the difference between ereg_replace() and eregi_replace()?

eregi_replace() function is identical to ereg_replace() except that it ignores case distinction when matching alphabetic characters.

### How do I find out the number of parameters passed into function9. ?

func_num_args() function returns the number of parameters passed in.

### What is the purpose of the following files having extensions: frm, myd, and myi? What these files contain?

In MySQL, the default table type is MyISAM.
Each MyISAM table is stored on disk in three files. The files have names that begin with the table name and have an extension to indicate the file type.

The '.frm' file stores the table definition.
The data file has a '.MYD' (MYData) extension.
The index file has a '.MYI' (MYIndex) extension,

### If the variable $a is equal to 5 and variable $b is equal to character a, what's the value of $$b?

100, it's a reference to existing variable.

### How To Protect Special Characters in Query String?

If you want to include special characters like spaces in the query string, you need to protect them by applying the urlencode() translation function. The script below shows how to use urlencode():

```php
<?php
print("<html>");
print("<p>Please click the links below"
." to submit comments about TECHPreparation.com:</p>");
$comment = 'I want to say: "It\'s a good site! :->"';
$comment = urlencode($comment);
print("<p>"
."<a href=\"processing_forms.php?name=Guest&comment=$comment\">"
."It's an excellent site!</a></p>");
$comment = 'This visitor said: "It\'s an average site! :-("';
$comment = urlencode($comment);
print("<p>"
.'<a href="processing_forms.php?'.$comment.'">'
."It's an average site.</a></p>");
print("</html>");
?>
```

### Are objects passed by value or by reference?

Everything is passed by value.

### What are the differences between DROP a table and TRUNCATE a table?

DROP TABLE table_name - This will delete the table and its data.

TRUNCATE TABLE table_name - This will delete the data of the table, but not the table definition.

### How do you call a constructor for a parent class?

parent::constructor($value)

### WHAT ARE THE DIFFERENT TYPES OF ERRORS IN PHP?

Here are three basic types of runtime errors in PHP:

1. Notices: These are trivial, non-critical errors that PHP encounters while executing a script - for example, accessing a variable that has not yet been defined. By default, such errors are not displayed to the user at all - although you can change this default behavior.

2. Warnings: These are more serious errors - for example, attempting to include() a file which does not exist. By default, these errors are displayed to the user, but they do not result in script termination.

3. Fatal errors: These are critical errors - for example, instantiating an object of a non-existent class, or calling a non-existent function. These errors cause the immediate termination of the script, and PHP's default behavior is to display them to the user when they take place.

Internally, these variations are represented by twelve different error types

## What's the special meaning of __sleep and __wakeup?
__sleep returns the array of all the variables than need to be saved, while __wakeup retrieves them.

## How can we submit a form without a submit button?
If you don't want to use the Submit button to submit a form, you can use normal hyper links to submit a form. But you need to use some JavaScript code in the URL of the link. For example:

<a href="javascript: document.myform.submit();">Submit Me</a>

## How can we register the variables into a session?
session_register($session_var);

$_SESSION['var'] = 'value';

## What is the difference between characters \023 and \x23?
The first one is octal 23, the second is hex 23.

## With a heredoc syntax, do I get variable substitution inside the heredoc contents?
Yes.

## How can we submit form without a submit button?
We can use a simple JavaScript code linked to an event trigger of any form field. In the JavaScript code, we can call the document.form.submit() function to submit the form. For example: <input type=button value="Save" onClick="document.form.submit()">

## How can we create a database using PHP and mysql?
We can create MySQL database with the use of mysql_create_db($databaseName) to create a database.

## How many ways we can retrieve the date in result set of mysql using php?
As individual objects so single record or as a set or arrays.

## Can we use include ("abc.php") two times in a php page "makeit.php"?
Yes.

## For printing out strings, there are echo, print and printf. Explain the differences.
echo is the most primitive of them, and just outputs the contents following the construct to the screen. print is also a construct (so parentheses are optional when calling it), but it returns TRUE on successful output and FALSE if it was unable to print out the string. However, you can pass multiple parameters to echo, like:

<?php echo 'Welcome ', 'to', ' ', 'techpreparations!'; ?>

and it will output the string "Welcome to techpreparations!" print does not take multiple parameters. It is also generally argued that echo is faster, but usually the speed advantage is negligible, and might not be there for future versions of PHP. printf is a function, not a construct, and allows such advantages as formatted output, but it's the slowest way to print out data out of echo, print and printf.

## I am writing an application in PHP that outputs a printable version of driving directions. It contains some long sentences, and I am a neat freak, and would like to make sure that no line exceeds 50 characters. How do I accomplish that with PHP?
On large strings that need to be formatted according to some length specifications, use wordwrap() or chunk_split().

## What's the output of the ucwords function in this example?
$formatted = ucwords("TECHPREPARATIONS IS COLLECTION OF INTERVIEW QUESTIONS");
print $formatted;
What will be printed is TECHPREPARATIONS IS COLLECTION OF INTERVIEW QUESTIONS.
ucwords() makes every first letter of every word capital, but it does not lower-case anything else. To avoid this, and get a properly formatted string, it's worth using strtolower() first.

## What's the difference between htmlentities() and htmlspecialchars()?
htmlspecialchars only takes care of <, >, single quote ', double quote " and ampersand. htmlentities translates all occurrences of character sequences that have different meaning in HTML.

### How can we extract string "abc.com" from a string "mailto:info@abc.com?subject=Feedback" using regular expression of PHP?

$text = "mailto:info@abc.com?subject=Feedback";
preg_match('|.*@([^?]*)|', $text, $output);
echo $output[1];

Note that the second index of $output, $output[1], gives the match, not the first one, $output[0].

**So if md5() generates the most secure hash, why would you ever use the less secure crc32() and sha1()?**
Crypto usage in PHP is simple, but that doesn't mean it's free. First off, depending on the data that you're encrypting, you might have reasons to store a 32-bit value in the database instead of the 160-bit value to save on space. Second, the more secure the crypto is, the longer is the computation time to deliver the hash value. A high volume site might be significantly slowed down, if frequent md5() generation is required.

**How can we destroy the session, how can we unset the variable of a session?**
session_unregister() - Unregister a global variable from the current session
session_unset() - Free all session variables

### What are the different functions in sorting an array?
Sorting functions in PHP:
asort()
arsort()
ksort()
krsort()
uksort()
sort()
natsort()
rsort()

### How can we know the count/number of elements of an array?
2 ways:
a) sizeof($array) - This function is an alias of count()
b) count($urarray) - This function returns the number of elements in an array.
Interestingly if you just pass a simple var instead of an array, count() will return 1.

### How many ways we can pass the variable through the navigation between the pages?
At least 3 ways:

1. Put the variable into session in the first page, and get it back from session in the next page.
2. Put the variable into cookie in the first page, and get it back from the cookie in the next page.
3. Put the variable into a hidden form field, and get it back from the form in the next page.

### What is the maximum length of a table name, a database name, or a field name in MySQL?
Database name: 64 characters
Table name: 64 characters
Column name: 64 characters

### How many values can the SET function of MySQL take?
MySQL SET function can take zero or more values, but at the maximum it can take 64 values.

### What are the other commands to know the structure of a table using MySQL commands except EXPLAIN command?
DESCRIBE table_name;

### How can we find the number of rows in a table using MySQL?
Use this for MySQL

SELECT COUNT(*) FROM table_name;

### What's the difference between md5(), crc32() and sha1() crypto on PHP?
The major difference is the length of the hash generated. CRC32 is, evidently, 32 bits, while sha1() returns a 128 bit value, and md5() returns a 160 bit value. This is important when avoiding collisions.

### How can we find the number of rows in a result set using PHP?
Here is how can you find the number of rows in a result set in PHP:

$result = mysql_query($any_valid_sql, $database_link);
$num_rows = mysql_num_rows($result);
echo "$num_rows rows found";

## How many ways we can we find the current date using MySQL?

SELECT CURDATE();
SELECT CURRENT_DATE();
SELECT CURTIME();
SELECT CURRENT_TIME();

## Give the syntax of GRANT commands?

The generic syntax for GRANT is as following

GRANT [rights] on [database] TO [username@hostname] IDENTIFIED BY [password]

Now rights can be:
a) ALL privilages
b) Combination of CREATE, DROP, SELECT, INSERT, UPDATE and DELETE etc.

We can grant rights on all databse by usingh *.* or some specific database by database.* or a specific table by database.table_name.

**Give the syntax of REVOKE commands?**

The generic syntax for revoke is as following

REVOKE [rights] on [database] FROM [username@hostname]

Now rights can be:
a) ALL privileges
b) Combination of CREATE, DROP, SELECT, INSERT, UPDATE and DELETE etc.

We can grant rights on all database by using *.* or some specific database by database.* or a specific table by database.table_name.

## What is the difference between CHAR and VARCHAR data types?

CHAR is a fixed length data type. CHAR(n) will take n characters of storage even if you enter less than n characters to that column. For example, "Hello!" will be stored as "Hello! " in CHAR(10) column.

VARCHAR is a variable length data type. VARCHAR(n) will take only the required storage for the actual number of characters entered to that column. For example, "Hello!" will be stored as "Hello!" in VARCHAR(10) column.

## How can we encrypt and decrypt a data present in a mysql table using mysql?

AES_ENCRYPT() and AES_DECRYPT()

## Will comparison of string "10" and integer 11 work in PHP?

Yes, internally PHP will cast everything to the integer type, so numbers 10 and 11 will be compared.

## What is the functionality of MD5 function in PHP?

string md5(string)

It calculates the MD5 hash of a string. The hash is a 32-character hexadecimal number.

## How can I load data from a text file into a table?

The MySQL provides a LOAD DATA INFILE command. You can load data from a file. Great tool but you need to make sure that:

a) Data must be delimited
b) Data fields must match table columns correctly

## How can we know the number of days between two given dates using MySQL?

Use DATEDIFF()

SELECT DATEDIFF(NOW(),'2006-07-01');

## How can we change the name of a column of a table?

This will change the name of column:

ALTER TABLE table_name CHANGE old_colm_name new_colm_name

## How can we change the data type of a column of a table?

This will change the data type of a column:

ALTER TABLE table_name CHANGE colm_name same_colm_name [new data type]

## What is the difference between GROUP BY and ORDER BY in SQL?

To sort a result, use an ORDER BY clause.

The most general way to satisfy a GROUP BY clause is to scan the whole table and create a new temporary table where all rows from each group are consecutive, and then use this temporary table to discover groups and apply aggregate functions (if any).

ORDER BY [col1],[col2],...[coln]; Tells DBMS according to what columns it should sort the result. If two rows will have the same value in col1 it will try to sort them according to col2 and so on.

GROUP BY [col1],[col2],...[coln]; Tells DBMS to group (aggregate) results with same value of column col1. You can use COUNT(col1), SUM(col1), AVG(col1) with it, if you want to count all items in group, sum all values or view average.

## What is meant by MIME?

Answer 1:

MIME is Multipurpose Internet Mail Extensions is an Internet standard for the format of e-mail. However browsers also uses MIME standard to transmit files. MIME has a header which is added to a beginning of the data. When browser sees such header it shows the data as it would be a file (for example image)

Some examples of MIME types:

audio/x-ms-wmp

image/png

application/x-shockwave-flash

Answer 2:

Multipurpose Internet Mail Extensions.

WWW's ability to recognize and handle files of different types is largely dependent on the use of the MIME (Multipurpose Internet Mail Extensions) standard. The standard provides for a system of registration of file types with information about the applications needed to process them. This information is incorporated into Web server and browser software, and enables the automatic recognition and display of registered file types. ...

## How can we know that a session is started or not?

A session starts by session_start() function.

This session_start() is always declared in header portion. it always declares first. then we write session_register().

## What are the differences between mysql_fetch_array(), mysql_fetch_object(), mysql_fetch_row()?

Answer 1:

mysql_fetch_array() -> Fetch a result row as a combination of associative array and regular array.

mysql_fetch_object() -> Fetch a result row as an object.

mysql_fetch_row() -> Fetch a result set as a regular array().

Answer 2:

The difference between mysql_fetch_row() and mysql_fetch_array() is that the first returns the results in a numeric array ($row[0], $row[1], etc.), while the latter returns a the results an array containing both numeric and associative keys ($row['name'], $row['email'], etc.). mysql_fetch_object() returns an object ($row->name, $row->email, etc.).

## If we login more than one browser windows at the same time with same user and after that we close one window, then is the session is exist to other windows or not? And if yes then why? If no then why?

Session depends on browser. If browser is closed then session is lost. The session data will be deleted after session time out. If connection is lost and you recreate connection, then session will continue in the browser.

## What are the MySQL database files stored in system ?

Data is stored in name.myd

Table structure is stored in name.frm

Index is stored in name.myi

## What is the difference between PHP4 and PHP5?

PHP4 cannot support oops concepts and Zend engine 1 is used.

PHP5 supports oops concepts and Zend engine 2 is used.

Error supporting is increased in PHP5.

XML and SQLLite will is increased in PHP5.

## Can we use include(abc.PHP) two times in a PHP page makeit.PHP"?

Yes we can include that many times we want, but here are some things to make sure of:

(including abc.PHP, the file names are case-sensitive)

there shouldn't be any duplicate function names, means there should not be functions or classes or variables with the same name in abc.PHP and makeit.php

## What are the differences between mysql_fetch_array(), mysql_fetch_object(), mysql_fetch_row()?

mysql_fetch_array - Fetch a result row as an associative array and a numeric array.

mysql_fetch_object - Returns an object with properties that correspond to the fetched row and moves the internal data pointer ahead. Returns an object with properties that correspond to the fetched row, or FALSE if there are no more rows

mysql_fetch_row() - Fetches one row of data from the result associated with the specified result identifier. The row is returned as an array. Each result column is stored in an array offset, starting at offset 0.

### What is meant by nl2br()?

Anwser1:

nl2br() inserts a HTML tag <br> before all new line characters \n in a string.

echo nl2br("god bless \n you");

output:
god bless<br>
you

### How can we encrypt and decrypt a data presented in a table using MySQL?

You can use functions: AES_ENCRYPT() and AES_DECRYPT() like:

AES_ENCRYPT(str, key_str)
AES_DECRYPT(crypt_str, key_str)

### How can I retrieve values from one database server and store them in other database server using PHP?

For this purpose, you can first read the data from one server into session variables. Then connect to other server and simply insert the data into the database.

### Who is the father of PHP and what is the current version of PHP and MYSQL?

Rasmus Lerdorf.
PHP 5.1. Beta
MySQL 5.0

### In how many ways we can retrieve data in the result set of MYSQL using PHP?

mysql_fetch_array - Fetch a result row as an associative array, a numeric array, or both
mysql_fetch_assoc - Fetch a result row as an associative array
mysql_fetch_object - Fetch a result row as an object
mysql_fetch_row —- Get a result row as an enumerated array

### What are the functions for IMAP?

imap_body - Read the message body
imap_check - Check current mailbox
imap_delete - Mark a message for deletion from current mailbox
imap_mail - Send an email message

### What are encryption functions in PHP?

CRYPT()
MD5()

### What is the difference between htmlentities() and htmlspecialchars()?

htmlspecialchars() - Convert some special characters to HTML entities (Only the most widely used)
htmlentities() - Convert ALL special characters to HTML entities

### What is the functionality of the function htmlentities?

htmlentities() - Convert all applicable characters to HTML entities
This function is identical to htmlspecialchars() in all ways, except with htmlentities(), all characters which have HTML character entity equivalents are translated into these entities.

### How can we get the properties (size, type, width, height) of an image using php image functions?

To know the image size use getimagesize() function
To know the image width use imagesx() function
To know the image height use imagesy() function

### How can we increase the execution time of a php script?

By the use of void set_time_limit(int seconds)
Set the number of seconds a script is allowed to run. If this is reached, the script returns a fatal error. The default limit is 30 seconds or, if it exists, the max_execution_time value defined in the php.ini. If seconds is set to zero, no time limit is imposed.

When called, set_time_limit() restarts the timeout counter from zero. In other words, if the timeout is the default 30 seconds, and 25 seconds into script execution a call such as set_time_limit(20) is made, the script will run for a total of 45 seconds before timing out.

### HOW CAN WE TAKE A BACKUP OF A MYSQL TABLE AND HOW CAN WE RESTORE IT?

Answer 1:
Create a full backup of your database: shell> mysqldump tab=/path/to/some/dir opt db_name
Or: shell> mysqlhotcopy db_name /path/to/some/dir

The full backup file is just a set of SQL statements, so restoring it is very easy:

shell> mysql "."Executed";

Answer 2:
To backup: BACKUP TABLE tbl_name TO /path/to/backup/directory
' To restore: RESTORE TABLE tbl_name FROM /path/to/backup/directory

mysqldump: Dumping Table Structure and Data

Utility to dump a database or a collection of database for backup or for transferring the data to another SQL server (not necessarily a MySQL server). The dump will contain SQL statements to create the table and/or populate the table.
-t, no-create-info
Don't write table creation information (the CREATE TABLE statement).
-d, no-data
Don't write any row information for the table. This is very useful if you just want to get a dump of the structure for a table!

## How to set cookies?
setcookie('variable','value','time')
;
variable - name of the cookie variable
value - value of the cookie variable
time - expiry time
Example: setcookie('Test',$i,time()+3600);

Test - cookie variable name
$i - value of the variable 'Test'
time()+3600 - denotes that the cookie will expire after an one hour

**How to reset/destroy a cookie ?**
Reset a cookie by specifying expire time in the past:
Example: setcookie('Test',$i,time()-3600); // already expired time

Reset a cookie by specifying its name only
Example: setcookie('Test');

## What types of images that PHP supports ?
Using imagetypes() function to find out what types of images are supported in your PHP engine.
imagetypes() - Returns the image types supported.
This function returns a bit-field corresponding to the image formats supported by the version of GD linked into PHP.
The following bits are returned, IMG_GIF | IMG_JPG | IMG_PNG | IMG_WBMP | IMG_XPM.

## Check if a variable is an integer in JAVASCRIPT ?
var myValue =9.8;
if(parseInt(myValue)== myValue)
alert('Integer');
else
alert('Not an integer');

## Tools used for drawing ER diagrams.
Case Studio
Smart Draw

## How can I know that a variable is a number or not using a JavaScript?
Answer 1:
bool is_numeric( mixed var)
Returns TRUE if var is a number or a numeric string, FALSE otherwise.

Answer 2:
Definition and Usage
The isNaN() function is used to check if a value is not a number.

Syntax
isNaN(number)

Parameter Description
number Required. The value to be tested

## How can we submit from without a submit button?
Trigger the JavaScript code on any event ( like onSelect of drop down list box, onfocus, etc )
document.myform.submit(); This will submit the form.

**How many ways can we get the value of current session id?**
session_id() returns the session id for the current session.


**How can we destroy the cookie?**
Set the cookie with a past expiration time.


**What are the current versions of Apache, PHP, and MySQL?**
PHP: PHP 5.1.2
MySQL: MySQL 5.1
Apache: Apache 2.1


**What are the reasons for selecting LAMP (Linux, Apache, MySQL, Php) instead of combination of other software programs, servers and operating systems?**
All of those are open source resource. Security of  Linux is very more than windows. Apache is a better server that IIS both in functionality and security. Mysql is world most popular open source database. Php is more faster that asp or any other scripting language.


**What are the features and advantages of OBJECT ORIENTED PROGRAMMING?**
One of the main advantages of OO programming is its ease of modification; objects can easily be modified and added to a system there by reducing maintenance costs. OO programming is also considered to be better at modeling the real world than is procedural programming. It allows for more complicated and flexible interactions. OO systems are also easier for non-technical personnel to understand and easier for them to participate in the maintenance and enhancement of a system because it appeals to natural human cognition patterns. For some systems, an OO approach can speed development time since many objects are standard across systems and can be reused. Components that manage dates, shipping, shopping carts, etc. can be purchased and easily modified for a specific system.


**How can we get second of the current time using date function?**
$second = date("s");


**What is the use of friend function?**
Friend functions
Sometimes a function is best shared among a number of different classes. Such functions can be declared either as member functions of one class or as global functions. In either case they can be set to be friends of other classes, by using a friend specifier in the class that is admitting them. Such functions can use all attributes of the class which names them as a friend, as if they were themselves members of that class.
A friend declaration is essentially a prototype for a member function, but instead of requiring an implementation with the name of that class attached by the double colon syntax, a global function or member function of another class provides the match.

```
class mylinkage
{
private:
mylinkage * prev;
mylinkage * next;

protected:
friend void set_prev(mylinkage* L, mylinkage* N);
void set_next(mylinkage* L);

public:
mylinkage * succ();
mylinkage * pred();
mylinkage();
};

void mylinkage::set_next(mylinkage* L) { next = L; }

void set_prev(mylinkage * L, mylinkage * N ) { N->prev = L; }
```

Friends in other classes
It is possible to specify a member function of another class as a friend as follows:
```
class C
{
friend int B::f1();
};
class B
{
int f1();
};
```

It is also possible to specify all the functions in another class as friends, by specifying the entire class as a friend.
```
class A
{
friend class B;
```

};

Friend functions allow binary operators to be defined which combine private data in a pair of objects. This is particularly powerful when using the operator overloading features of C++. We will return to it when we look at overloading.

### How can we get second of the current time using date function?
$second = date("s");

### What is the maximum size of a file that can be uploaded using PHP and how can we change this?
You can change maximum size of a file set upload_max_filesize variable in php.ini file

### How can I make a script that can be bilingual (supports English, German)?
You can change char set variable in above line in the script to support bi language.

### What are the difference between abstract class and interface?
Abstract class: abstract classes are the class where one or more methods are abstract but not necessarily all method has to be abstract. Abstract methods are the methods, which are declare in its class but not define. The definition of those methods must be in its extending class.

Interface: Interfaces are one type of class where all the methods are abstract. That means all the methods only declared but not defined. All the methods must be define by its implemented class.

### What are the advantages of stored procedures, triggers, indexes?
A stored procedure is a set of SQL commands that can be compiled and stored in the server. Once this has been done, clients don't need to keep re-issuing the entire query but can refer to the stored procedure. This provides better overall performance because the query has to be parsed only once, and less information needs to be sent between the server and the client. You can also raise the conceptual level by having libraries of functions in the server. However, stored procedures of course do increase the load on the database server system, as more of the work is done on the server side and less on the client (application) side. Triggers will also be implemented. A trigger is effectively a type of stored procedure, one that is invoked when a particular event occurs. For example, you can install a stored procedure that is triggered each time a record is deleted from a transaction table and that stored procedure automatically deletes the corresponding customer from a customer table when all his transactions are deleted. Indexes are used to find rows with specific column values quickly. Without an index, MySQL must begin with the first row and then read through the entire table to find the relevant rows. The larger the table, the more this costs. If the table has an index for the columns in question, MySQL can quickly determine the position to seek to in the middle of the data file without having to look at all the data. If a table has 1,000 rows, this is at least 100 times faster than reading sequentially. If you need to access most of the rows, it is faster to read sequentially, because this minimizes disk seeks.

### What is maximum size of a database in mysql?
If the operating system or filesystem places a limit on the number of files in a directory, MySQL is bound by that constraint. The efficiency of the operating system in handling large numbers of files in a directory can place a practical limit on the number of tables in a database. If the time required to open a file in the directory increases significantly as the number of files increases, database performance can be adversely affected.
The amount of available disk space limits the number of tables.
MySQL 3.22 had a 4GB (4 gigabyte) limit on table size. With the MyISAM storage engine in MySQL 3.23, the maximum table size was increased to 65536 terabytes (2567 – 1 bytes). With this larger allowed table size, the maximum effective table size for MySQL databases is usually determined by operating system constraints on file sizes, not by MySQL internal limits.
The InnoDB storage engine maintains InnoDB tables within a tablespace that can be created from several files. This allows a table to exceed the maximum individual file size. The tablespace can include raw disk partitions, which allows extremely large tables. The maximum tablespace size is 64TB.
The following table lists some examples of operating system file-size limits. This is only a rough guide and is not intended to be definitive. For the most up-to-date information, be sure to check the documentation specific to your operating system.
Operating System File-size Limit
Linux 2.2-Intel 32-bit 2GB (LFS: 4GB)
Linux 2.4+ (using ext3 filesystem) 4TB
Solaris 9/10 16TB
NetWare w/NSS filesystem 8TB
Win32 w/ FAT/FAT32 2GB/4GB
Win32 w/ NTFS 2TB (possibly larger)
MacOS X w/ HFS+ 2TB

### Explain normalization concept?
The normalization process involves getting our data to conform to three progressive normal forms, and a higher level of normalization cannot be achieved until the previous levels have been achieved (there are actually five normal forms, but the last two are mainly academic and will not be discussed).

First Normal Form
The First Normal Form (or 1NF) involves removal of redundant data from horizontal rows. We want to ensure that there is no duplication of data in a given row, and that every column stores the least amount of information possible (making the field atomic).

Second Normal Form
Where the First Normal Form deals with redundancy of data across a horizontal row, Second Normal Form (or 2NF) deals with redundancy of data in vertical columns. As stated earlier, the normal forms are progressive, so to achieve Second Normal Form, your tables must already be in First Normal Form.

Third Normal Form
I have a confession to make; I do not often use Third Normal Form. In Third Normal Form we are looking for data in our tables that is not fully dependant on the primary key, but dependant on another value in the table

## What's the difference between accessing a class method via -> and via ::?
:: is allowed to access methods that can perform static operations, i.e. those, which do not require object initialization.

## What are the advantages and disadvantages of CASCADE STYLE SHEETS?
External Style Sheets
Advantages
Can control styles for multiple documents at once Classes can be created for use on multiple HTML element types in many documents Selector and grouping methods can be used to apply styles under complex contexts

Disadvantages
An extra download is required to import style information for each document The rendering of the document may be delayed until the external style sheet is loaded Becomes slightly unwieldy for small quantities of style definitions

Embedded Style Sheets
Advantages
Classes can be created for use on multiple tag types in the document Selector and grouping methods can be used to apply styles under complex contexts No additional downloads necessary to receive style information

Disadvantage
This method can not control styles for multiple documents at once

Inline Styles
Advantages
Useful for small quantities of style definitions Can override other style specification methods at the local level so only exceptions need to be listed in conjunction with other style methods

Disadvantages
Does not distance style information from content (a main goal of SGML/HTML) Can not control styles for multiple documents at once Author can not create or control classes of elements to control multiple element types within the document Selector grouping methods can not be used to create complex element addressing scenarios

## What type of inheritance that php supports?
In PHP an extended class is always dependent on a single base class, that is, multiple inheritance is not supported. Classes are extended using the keyword 'extends'.

## How can increase the performance of MySQL select query?
We can use LIMIT to stop MySql for further search in table after we have received our required no. of records, also we can use LEFT JOIN or RIGHT JOIN instead of full join in cases we have related data in two or more tables.

## How can we change the name of a column of a table?
MySQL query to rename table: RENAME TABLE tbl_name TO new_tbl_name
or,
ALTER TABLE tableName CHANGE OldName newName.

## When you want to show some part of a text displayed on an HTML page in red font color? What different possibilities are there to do this? What are the advantages/disadvantages of these methods?
There are 2 ways to show some part of a text in red:

1. Using HTML tag <font color="red">
2. Using HTML tag <span style="color: red">

## When viewing an HTML page in a Browser, the Browser often keeps this page in its cache. What can be possible advantages/disadvantages of page caching? How can you prevent caching of a certain page (please give several alternate solutions)?
When you use the metatag in the header section at the beginning of an HTML Web page, the Web page may still be cached in the Temporary Internet Files folder.

A page that Internet Explorer is browsing is not cached until half of the 64 KB buffer is filled. Usually, metatags are inserted in the header section of an HTML document, which appears at the beginning of the document. When the HTML code is parsed, it is read from top to bottom. When the metatag is read, Internet Explorer looks for the existence of the page in cache at that exact moment. If it is there, it is removed. To properly prevent the Web page from appearing in the cache, place another header section at the end of the HTML document.

**What are the different ways to login to a remote server? Explain the means, advantages and disadvantages?**
There is at least 3 ways to logon to a remote server:
Use ssh or telnet if you concern with security
You can also use rlogin to logon to a remote server.


**Please give a regular expression (preferably Perl/PREG style), which can be used to identify the URL from within a HTML link tag.**
Try this: /href="([^"]*)"/i


**How can I use the COM components in php?**
The COM class provides a framework to integrate (D)COM components into your PHP scripts.
string COM::COM( string module_name [, string server_name [, int codepage]]) - COM class constructor.

Parameters:

module_name: name or class-id of the requested component.
server_name: name of the DCOM server from which the component should be fetched. If NULL, localhost is assumed.
To allow DCOM com, allow_dcom has to be set to TRUE in php.ini.
codepage - specifies the codepage that is used to convert php-strings to unicode-strings and vice versa. Possible
values are CP_ACP, CP_MACCP, CP_OEMCP, CP_SYMBOL, CP_THREAD_ACP, CP_UTF7 and CP_UTF8.
Usage:
$word->Visible = 1; //open an empty document
$word->Documents->Add(); //do some weird stuff
$word->Selection->TypeText("This is a test...");
$word->Documents[1]->SaveAs("Useless test.doc"); //closing word
$word->Quit(); //free the object
$word->Release();
$word = null;


**How many ways we can give the output to a browser?**
HTML output
PHP, ASP, JSP, Servlet Function
Script Language output Function
Different Type of embedded Package to output to a browser


**What is the default session time in php and how can I change it?**
The default session time in php is until closing of browser


**What changes I have to do in php.ini file for file uploading?**
Make the following line uncomment like:
; Whether to allow HTTP file uploads.
file_uploads = On
; Temporary directory for HTTP uploaded files (will use system default if not
; specified).
upload_tmp_dir = C:\apache2triad\temp
; Maximum allowed size for uploaded files.
upload_max_filesize = 2M


**How can I set a cron and how can I execute it in Unix, Linux, and windows?**
Cron is very simply a Linux module that allows you to run commands at predetermined times or intervals. In Windows, it's called Scheduled Tasks. The name Cron is in fact derived from the same word from which we get the word chronology, which means order of time.
The easiest way to use crontab is via the crontab command.

# crontab

This command 'edits' the crontab. Upon employing this command, you will be able to enter the commands that you wish to run. My version of
Linux uses the text editor vi. You can find information on using vi here.

The syntax of this file is very important – if you get it wrong, your crontab will not function properly. The syntax of the file should be as follows:
minutes hours day_of_month month day_of_week command

All the variables, with the exception of the command itself, are numerical constants. In addition to an asterisk (*), which is a wildcard that allows any value, the ranges permitted for each field are as follows:

Minutes: 0-59
Hours: 0-23
Day_of_month: 1-31
Month: 1-12
Weekday: 0-6

We can also include multiple values for each entry, simply by separating each value with a comma.

command can be any shell command and, as we will see momentarily, can also be used to execute a Web document such as a PHP file.

So, if we want to run a script every Tuesday morning at 8:15 AM, our mycronjob file will contain the following content on a single line:

15 8 * * 2 /path/to/scriptname

This all seems simple enough, right? Not so fast! If you try to run a PHP script in this manner, nothing will happen (barring very special configurations that have PHP compiled as an executable, as opposed to an Apache module). The reason is that, in order for PHP to be parsed, it needs to be passed through Apache. In other words, the page needs to be called via a browser or other means of retrieving

Web content. For our purposes, I'll assume that your server configuration includes wget, as is the case with most default configurations. To test your configuration, log in to shell. If you're using an RPM-based system (e.g. Redhat or Mandrake), type the following:

# wget help

If you are greeted with a wget package identification, it is installed in your system.
You could execute the PHP by invoking wget on the URL to the page, like so:

# wget http://www.example.com/file.php

Now, let's go back to the mailstock.php file we created in the first part of this article. We saved it in our document root, so it should be accessible via the Internet. Remember that we wanted it to run at 4PM Eastern time, and send you your precious closing bell report? Since I'm located in the Eastern timezone, we can go ahead and set up our crontab to use 4:00, but if you live elsewhere, you might have to compensate for the time difference when setting this value.

This is what my crontab will look like:

0 4 * * 1,2,3,4,5 we get http://www.example.com/mailstock.php

### Steps for the payment gateway processing?
An online payment gateway is the interface between your merchant account and your Web site. The online payment gateway allows you to immediately verify credit card transactions and authorize funds on a customer's credit card directly from your Web site. It then passes the transaction off to your merchant bank for processing, commonly referred to as transaction batching

### How many ways I can redirect a PHP page?
Here are the possible ways of php page redirection.

1. Using Java script:
'; echo 'window.location.href="'.$filename.'";'; echo ''; echo ''; echo ''; echo ''; } } redirect('http://maosjb.com'); ?>

2. Using php function: header("Location:http://maosjb.com ");

### List out different arguments in PHP header function?
void header ( string string [, bool replace [, int http_response_code]])

### What type of headers have to be added in the mail function to attach a file?
$boundary = '--' . md5( uniqid ( rand() ) );
$headers = "From: \"Me\"\n";
$headers .= "MIME-Version: 1.0\n";
$headers .= "Content-Type: multipart/mixed; boundary=\"$boundary\"";

### What is the difference between Reply-to and Return-path in the headers of a mail function?
Reply-to: Reply-to is where to delivery the reply of the mail.

Return-path: Return path is when there is a mail delivery failure occurs then where to delivery the failure notification.

**How to store the uploaded file to the final location?**
move_uploaded_file ( string filename, string destination)

This function checks to ensure that the file designated by filename is a valid upload file (meaning that it was uploaded via PHP's HTTP POST upload mechanism). If the file is valid, it will be moved to the filename given by destination.

If filename is not a valid upload file, then no action will occur, and move_uploaded_file() will return FALSE.

If filename is a valid upload file, but cannot be moved for some reason, no action will occur, and move_uploaded_file() will return FALSE. Additionally, a warning will be issued.

### Explain about Type Juggling in php?

PHP does not require (or support) explicit type definition in variable declaration; a variable's type is determined by the context in which that variable is used. That is to say, if you assign a string value to variable $var, $var becomes a string. If you then assign an integer value to $var, it becomes an integer.

An example of PHP's automatic type conversion is the addition operator '+'. If any of the operands is a float, then all operands are evaluated as floats, and the result will be a float. Otherwise, the operands will be interpreted as integers, and the result will also be an integer. Note that this does NOT change the types of the operands themselves; the only change is in how the operands are evaluated.

$foo += 2; // $foo is now an integer (2)
$foo = $foo + 1.3; // $foo is now a float (3.3)
$foo = 5 + "10 Little Piggies"; // $foo is integer (15)
$foo = 5 + "10 Small Pigs"; // $foo is integer (15)

If the last two examples above seem odd, see String conversion to numbers.
If you wish to change the type of a variable, see settype().
If you would like to test any of the examples in this section, you can use the var_dump() function.
Note: The behavior of an automatic conversion to array is currently undefined.

Since PHP (for historical reasons) supports indexing into strings via offsets using the same syntax as array indexing, the example above leads to a problem: should $a become an array with its first element being "f", or should "f" become the first character of the string $a? The current versions of PHP interpret the second assignment as a string offset identification, so $a becomes "f", the result of this automatic conversion however should be considered undefined. PHP 4 introduced the new curly bracket syntax to access characters in string, use this syntax instead of the one presented above:

### How can I embed a java programme in php file and what changes have to be done in php.ini file?

There are two possible ways to bridge PHP and Java: you can either integrate PHP into a Java Servlet environment, which is the more stable and efficient solution, or integrate Java support into PHP. The former is provided by a SAPI module that interfaces with the Servlet server, the latter by this Java extension.
The Java extension provides a simple and effective means for creating and invoking methods on Java objects from PHP. The JVM is created using JNI, and everything runs in-process.

Example Code:

getProperty('java.version') . "; echo 'Java vendor=' . $system->getProperty('java.vendor') . "; echo 'OS=' . $system->getProperty('os.name') . ' ' . $system->getProperty('os.version') . ' on ' . $system->getProperty('os.arch') . ' '; // java.util.Date example $formatter = new Java('java.text.SimpleDateFormat', "EEEE, MMMM dd, yyyy 'at' h:mm:ss a zzzz"); echo $formatter->format(new Java('java.util.Date')); ?>

The behaviour of these functions is affected by settings in php.ini.
Table 1. Java configuration options
Name
Default
Changeable
java.class.path
NULL
PHP_INI_ALL
Name Default Changeable
java.home
NULL
PHP_INI_ALL
java.library.path
NULL
PHP_INI_ALL
java.library
JAVALIB
PHP_INI_ALL

### Explain the ternary conditional operator in PHP?

Expression preceding the ? is evaluated, if it's true, then the expression preceding the : is executed, otherwise, the expression following : is executed.

### What's the difference between include and require?

It's how they handle failures. If the file is not found by require(), it will cause a fatal error and halt the execution of the script. If the file is not found by include(), a warning will be issued, but execution will continue.

### How many ways can we get the value of current session id?

session_id() returns the session id for the current session.

MySQL interview questions
1          How can we create a database using PHP and mySQL?
           We can create MySQL database with the use of mySQL_create_db("Database_Name")
or

```
$SQL = 'CREATE DATABASE `database_name`';
if (mySQL_query($SQL, $link))
    echo "Database my_db created successfully\n";
else
     echo 'Error creating database: ' . mySQL_error() . "\n";
```

2       What are the different tables present in mySQL, which type of table is generated when we are creating a table in the following syntax: create table employee(eno int(2),ename varchar(10)) ?
         Total 5 types of tables we can create
1. ISAM (Index Sequential Access Method)
2. MyISAM
  o Static
  o Dynamic
  o Compress
3. Heap (Fastest tables because it stores in to the RAM. It is ideal if you need a small amount of     fast but temporary local table space)
4. Merge ( allows to combine several other tables into a single logical table)
5. INNO DB (Transaction safe table)
6. BDB ( berkelyeyDB)
MyISAM is the default storage engine as of MySQL 3.23.

3       What are the current versions of apache, PHP, and mySQL?
         For information about latest version of Apache, Php and MySQL please visits the following sites respectively:
http://www.apache.org/
http://www.php.net/
http://www.mySQL.com/

4       How can we optimize or increase the speed of a mySQL select query?
?       First, one thing that affects all queries: The more complex permission system setup you have, the more overhead you get.
If you do not have any GRANT statements done, MySQL will optimise the permission checking somewhat. So if you have a very high volume it may be worth the time to avoid grants. Otherwise, more permission check results in a larger overhead.

5       How can we change the name and data type of a column of a table ?
         $SQL = 'ALTER TABLE `webprogrammer` CHANGE `duration` `durations` INT(30) NOT NULL';

6       What are the differences between drop a table and truncate a table
         drop a table command, drops a full table ( deletes structure and table data )truncate table deletes data only, and keeps the structure alive.
Drop: "DROP TABLE table_name"
Truncate: "TRUNCATE TABLE table_Name"

7       A select query over a large table runs very slow because of the growing number of entries in that table. What different measures could be taken to improve speed?
or How can we increase the speed of a mySQL select query?
or How can increase the performance of mySQL select query?
         should on indexed field,generally using primarykey.
or using "Index" fileds.

8       What is meant by MIME
         Multipurpose Internet Mail Extensions
or
MIME is Multipurpose Internet Mail Extensions is an internet standard for the format of e-mail. Howewer browsers also uses MIME standart to transmit files. MIME has a header wich is added to a begining of the data. When browser sees such header it shows the data as it would be a file (for example image)
some mimes:
audio/x-ms-wmp
image/png
aplication/x-shockwave-flash

9       What's the difference between primary key and unique key?
         Index:
An index is a structure in a table that orders the data. It allows the database to access data quickly (In MySQL its implemented using B-tree algorithms).
Primary Key:
This is an index that cannot be NULL, Primary Keys are used in building relationships between tables in a database. (an index is automatically created on the primary key). The difference between primary and ordinary keys is that there can be multiple keys, but only one primary key.
Unique Key:
Unique and Index are same, the difference is, in Unique, duplicate are not allowed in any circumstances and that is enforced by database server. Primary key(s) qualify to be Unique on basis
of their uniqueness.
In case, your table has 2 primary keys means that the 2 fields together form one unique key. Each field by itself may have repeating values, but both primary keys combined together must be unique.

10      List of MySQL Commands:
         alter table, analyze table, backup table, begin, check table, commit, create database, create function, create index, create table, delete, describe, drop database, dop function, drop index, drop table, explain, flush, grant, insert, join, kill, load data infile, lock tables, optimize table, rename table, repair table, replace, restore table, revoke, rollback, select, set, set transaction, show, truncate, unlock tables, update, use.

11      how many ways we can find the current date using mySQL?
?       date() and now()

12      How many values can the SET function of MySQL take?
?       MySQL set can take zero or more values but at the maximum it can take 64 values
```

13        Explain Normalization concept

            Normalization helps to reduce redendence. Ist normlization gives primary key, 2 nd foreign key.

14        Explain MySQL optimization?

15        How can we repair a MySQL table?

            The syntex for repairing a mySQL table is

REPAIR TABLENAME, [TABLENAME, ], [Quick],[Extended]

or $SQL = "REPAIR TABLE `Table_Name`";

or REPAIR TABLE table_name TO new_tabel_name [,table_name1 TO new_tabel_name1,..] ;

This command will repair the table specified

if the quick is given the mySQL will do a repair of only the index tree if the extended is given it will create index row by row.

16        What are the advantages of stored procedures, triggers, indexes?

17        What is the maximum length of a table name, database name, and fieldname in MySQL?

            maximum lenghth of Names of database, table, columns are:

database- 64

table -64

columns-64

alias-255

18        What are the other commands to know the structure of table using MySQL commands except explain command?

            describe table_name;

19        How many tables will create when we create table, what are they?

            3 files, *.frm, *.MYD, *.MYI

20        What is the purpose of the following files having extensions 1) .frm 2) .myd 3) .myi? What do these files contain?

            data's are stored in name.Myd

table Structure are name.$frm

Index tables are name.myi

21        What is maximum size of a database in MySQL?

            no limit database. database containing 50,000,000 records, Table size: 64TB~16PB, Rows in a table: 2^64, table Indexes: 32, column size: 16MB~4GB, columns in a table: 1,000 , Row size: 4GB

22        Give the syntax of Grant and Revoke commands?

?        The generic syntax for grant is as following

> GRANT [rights] on [database/s] TO [username@hostname] IDENTIFIED BY [password]

now rights can be

a) All privilages

b) combination of create, drop, select, insert, update and delete etc.

we can grant rights on all databse by usingh *.* or some specific database by database.* or a specific table by database.table_name

username@hotsname can be either username@localhost, username@hostname and username@%

where hostname is any valid hostname and % represents any name, the *.* any condition

password is simply the password of user

The generic syntax for revoke is as following

> REVOKE [rights] on [database/s] FROM [username@hostname]

now rights can be as explained above

a) All privilages

b) combination of create, drop, select, insert, update and delete etc.

username@hotsname can be either username@localhost, username@hostname and username@%

where hostname is any valid hostname and % represents any name, the *.* any condition

23        If we login more than one browser window at the same time with same user and after that we close one window then is the session is exist to other window or not.And if yes then why? or if no then why?

            session depends on browser. if browser is closed then session is lost. the session data will be deleted after session time out. if connection is lost and u recreate connection, then also sesssion will continue in the browser.

24        How can we find the number of rows in a table using MySQL?

            Use this for mySQL

>SELECT COUNT(*) FROM table_name;

but if You Are particular about no of rows with some special result. do this:

>SELECT [colms],COUNT(*) FROM table_name [where u put conditions];

25        How many ways we can we find the current date using MySQL?

            SELECT CURDATE();

CURRENT_DATE() = CURDATE()

for time use

SELECT CURTIME();

CURRENT_TIME() = CURTIME()

26        What are the advantages/disadvantages of MySQL and PHP?

27        What is the difference between GROUP BY and ORDER BY in SQL?

            ORDER BY [col1],[col2],…,[coln]; Tels DBMS according to what columns it should sort the result. If two rows will hawe the same value in col1 it will try to sort them according to col2 and so on.

GROUP BY [col1],[col2],…,[coln]; Tels DBMS to group results with same value of column col1. You can use COUNT(col1), SUM(col1), AVG(col1) with it, if you want to count all items in group, sum all values or view average

28        What is the difference between char and varchar data types?

            Set char to occupy n bytes and it will take n bytes even if u r storing avalue of n-m butes

Set varchar to occupy n bytes and it will take only the required space and will not use the n bytes

eg. name char(10) will waste 5 bytes if we store 'kumar', if each char takes a byte

eg. name varchar(10) will just use 5 bytes if we store 'kumar', if each char takes a byte. rest 5 bytes will be free.

29      How can I load data from a text file into a table?

        The mySQL provides a LOAD DATA INFILE syntax. U can load data from a file. Gr8 tool but u need to make sure that

a) data is delimited

b) u match the colms and data correctly

dont use w/out first learning the syntax

eg.:- $SQL = 'LOAD DATA LOCAL INFILE "I:/wamp_install/tmp\\\\php19.tmp" INTO TABLE `webprogrammer` FIELDS TERMINATED BY ";" ENCLOSED BY "'" ESCAPED BY "\\\\" LINES TERMINATED BY "\\r\\n"';

30      How can we know the number of days between two given dates using MySQL?

        Use DATEDIFF()

>SELECT DATEDIFF(NOW(),'1947-08-15');

will give u the exact no of days India got independence from British.

31      in mySQL, what table type is required for foreign keys to work?

32      In mySQL, how do i grant access to a user to a specific database with read only permissions?

33      How would you backup and restore a big MySQL database? What are the advantages of the approach which you have taken over the others?

34      Describe the importance of DABA BASE ABSTRACTION LAYERS in PHP and database connection?

35      What is Postgres?

36      What is MySQL?

        MySQL is a Relational database management system, provided from open source community. Currently fast growing and hight used RDBMS. MySQL Developed by MySQL AB.

37      What is a stored procedure, and which databases support it?

38      differec between mySQL_num_rows() and mySQL_num_fields()?

        mySQL_num_rows():- returns the number of rows in the result set.

mySQL_num_fields():- returns the number of fields in the result set

39

        SQL HAVING:

The SQL HAVING clause is used to do exactly this, to specify a condition for an aggregate function.

or

SQL GROUP BY:

The SQL GROUP BY statement is used along with the SQL aggregate functions like SUM to provide means of grouping the result dataset by certain database table column(s).

or

SQL ORDER BY:

The SQL ORDER BY clause comes in handy when you want to sort your SQL result sets by some column(s).

or

The order by statement allows for table column assortment. It allows for ascending or descending lists of your table column values permitting SQL to reorder your table rows for the purpose of viewing.

or