

Day 1

HTML



Front end — HTML CSS
Bootstrap

Backend — SQL
PHP

HyperText Markup language

HTML editors — Notepad, NotePad++, Sublime Text,
Eclipse, Atom

Comments $<!-- -->$

Basic tags used for page structure
Container tags are those tags which contains another tags inside it.
e.g. `<html>, <head>, <title>, <pr>, <body>`, etc.

HTML element = HTML tags + Content

\downarrow
`<pr> Hello World! </pr>`

Text formatting tags $\rightarrow <\text{h1}>, <\text{h2}>, <\text{h3}>, <\text{h4}>, <\text{h5}>, <\text{h6}>$

` = `

` = <i>`

Strike through — `` [Previous version]
`<s>`

(~~Hello~~) `` [HTML5]

`<u>` Underline, `</u>`

`<mark>` used to highlight text
`</mark>`

The `<tt>` element is used to make text appear as if it is typed by a typewriter.

`` used to define a deleted (removed) text ``

Default font-size of heading tags are:

<code><h1></code>	32	px
<code><h2></code>	24	px
<code><h3></code>	19	px
<code><h4></code>	16	px
<code><h5></code>	14	px
<code><h6></code>	13	px

Attribute $\begin{cases} \rightarrow \text{name} \\ \rightarrow \text{value} \end{cases}$

Global attributes, Element specific attributes

Hyper links

`<a>` ``

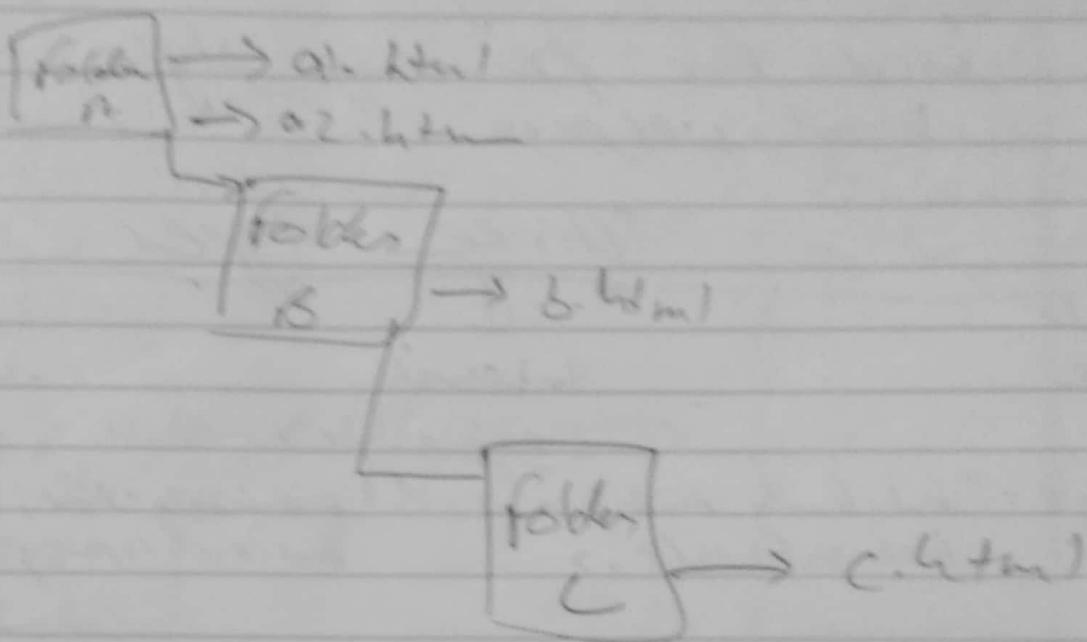
`` `target = "blank"`
link of webpage new tab

.. word for reverse directory

If no target is applied, default value is `_self`
This will open link in same tab

A line that allows you to send an email when clicked.
` Send email `

Relative reference



If we have to link a₁ with c
value for href is

(B/C/c.html)

While if we want to link c with a₂
value would be

.../.../a2.html

And a parent reference

To remove underline in hyperlink

Set text-decoration: none for anchor
tag or use

Day 2

④

CSS

Cascading Style sheet
used for providing style to an html webpage.

Three types

Inline

e.g
`<div style="font-family: Arial; font-size: 16px;>`

Internal

e.g `<style> font-family: Arial; font-size: 16px; </style>`

External

e.g `<link rel="stylesheet" type="text/css" href="style.css" />`

In html webpage for external css

`<link rel="stylesheet" type="text/css" href="style.css" />`

where rel = relationship b/w document & index file
internal

type = internet media type of document

To change color of text we use color css property

Internal: selector {color: red;}

Inline: <tag style="color: red;">

To change font size we use font-size property

Internal: selector {font-size: font-size in px; } font-sizes at

Inline: <tag style="font-size: font-size in px; & style="font-size:

CSS comment /* */

A selector ~~can~~ can be a class, id, tag, attribute etc.
Used to select/point to html elements to be styled.

apply same style on multiple html elements
e.g `h1, h2,`

```

<!DOCTYPE html>
<html>
  <head>
    <title>A</title>
    <style>
      p { color: red; }
    </style>
  </head>
  <body>
    <p style="color: blue;">
      Choose my color value
    </p>
  </body>
</html>

```

} inline CSS
style attribute has higher priority than internal CSS.

If you want to define internal styling to your HTML page, write the style statements inside the style element & place it below the link to external CSS file.

i.e. <head>

```

<link rel="stylesheet" type="text/css" href="style.css">
  <style>
    Internal styles
  </style>
</head>

```

This is the ideal way to link external CSS first then internal CSS.

In above case external CSS has more priority than internal CSS.

• If internal CSS is added before external then priority order will change. In this case if one property is mentioned in both the internal will be executed overriding external CSS.

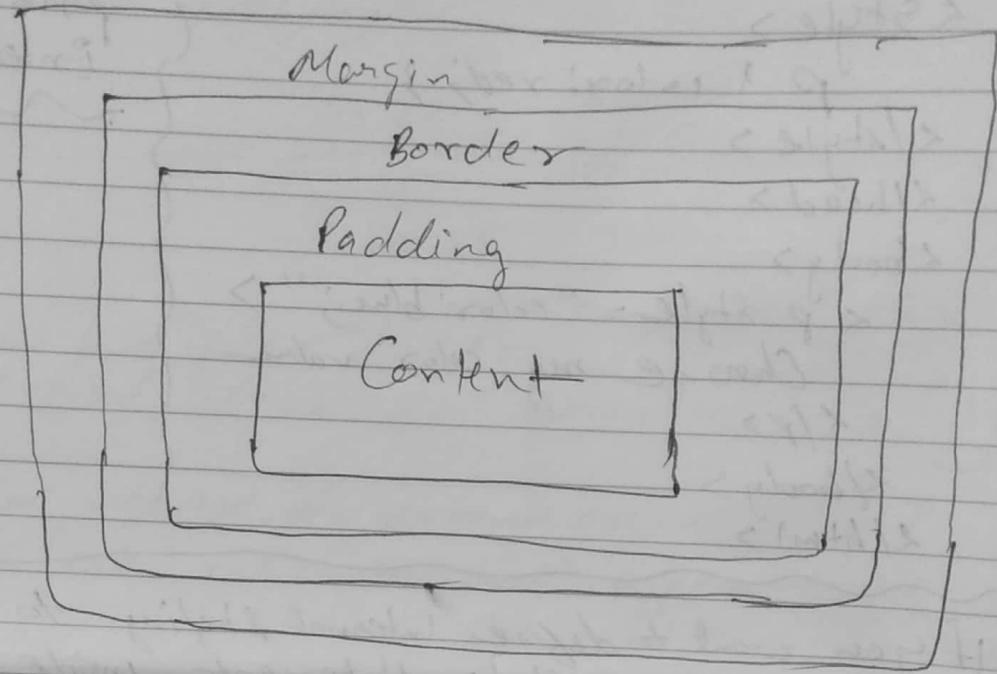
The inline CSS is always executed first in all cases.

External

CSS

- helps avoid duplication
- makes maintenance easier
- One place

Box
model



Padding - It clears area around content
default value is zero.

Border - by default transparent

Margin - Clears area around border
default value 8px

padding-top, padding-bottom, padding-left, padding-right
can also use in one line padding: 10px 0px 10px 0px
↑ ↑ ↑ ↑
top right bottom left

→ Border: border-width border-color border-style

→ Border! 1px #000 solid

→ just like padding we can set borders on any side or all

border-right: 5px;
border-bottom: 15px;

border-width: 0px 5px 15px 0px;
↑ ↑ ↑ ↑
top right bottom left

T R B L
Top Right Bottom Left

margin: 15px;

margin-top, margin-left, margin-bottom, margin-right

margin-left: 8px;

margin-right: 25px;

margin: 0px 8px 0px 25px

<style>

{

padding: 2px 3px 4px 3px;

border: 1px #ccc solid;

margin: 5px;

}

</style>

Granary div

div

{

width: 50px;

height: 50px;

border: 1px solid #8000;

border-radius: 50%;

}

now to make responsive webpage → by specifying dimensions of elements in %age.

(consequently your page will fit any device width & show responsive behaviour)

universal selector → * (Asterisk symbol)

font → style, variant, weight, size
font-weight family

font shorthand → all above in one

Day 4

font
short hand

font: italic small-caps bolder 28px arial, sans-serif;

↑ ↑ ↑ ↑ ↑
 font-style font-variant font-weight font-size font-family
 (by default) (by default) (by default)
 normal normal normal

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list

ordered → OL type = a, A, i, I, l (by default)
 Unordered → UL type = circle, disc, square, none

DL - Definition list

DT - definition term

DD - definition data

use image as list item using list-style-image CSS property.

ul {

list-style-image: url('square.jpg');

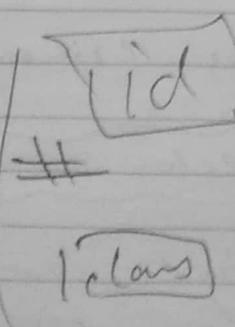
}

If you want to change the color of bullet
 you must change the color of text.

Divisions (div)

Group multiple elements

- border
- margin
- padding
- float: left, right



is used for identifying each & every div block uniquely.

No two elements have the same id

float: left

float: right

The commonly used block level elements are

- <div>
- <footer>
- <form>
- heading <h1> to <h6>
- header <head>
- lists
- <p>
- <nav>
- tables

(9)

The default value for position is static.

In relative positioning, the element is shifted to the specified position relative to its original position in document flow.

e.g. `div { position: relative; left: 20px; }`

div will be placed 20px to the left of original position of webpage.

Some class can be used for styling several items while id should be used for a single element.

Intrafile linking is the act of linking sections within a single page.

e.g. wikipedia page

If many declaration of same CSS property is present, the last declaration will be executed as all other declaration will override.

``

id selector (#) class selector (.)

In HTML, there is no minimum width specified for tables. The default width of the table is auto. i.e. The table will take the width of content in it.

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To make a particular field mandatory
use "required" attribute.

e.g. `<input type="text" name="username" required>`

User can insert image using button tag

while can't use input tag in a button
`<input type="button" value="submit"><button type="button"></button>`

It is not necessary to enclose form fields
inside form tag.

But it is best practice to use it.

For making drop-down list use `<select>` tag.

Smartphone
tablet
laptop

4" - 5.7"
7" - 11"
12" - 17"

} we are
responsive
website

@ media (media-query-list)
condition

1x CSS properties }

(Viewport) ?

The viewport is the visible area on a
user's webpage. It is small for mobile
devices whereas larger for desktop. It is
essential to set the viewport to bring
responsiveness into your webpages. With use of
viewport browsers on most devices would
display webpages to fit the device width & would
induce better readability as well as user
experience.

Pseudo classes

Pseudo classes are mainly states that are achieved during user interaction by mouse hover.

most used pseudo classes are - :link, :visited, :active, :hover, :focus, :first-child, :nth-child

:link - used to add special style to an unvisited link

:visited - used to add " " " " visited " "

:hover - " " " " " " " " an element when you

:active - " " " " " " " " active element

:focus - " " " " " " " " element while the element has focus.

:first-child → " " " " " " " " that is first child of some other element

:nth-child → used to add style to a particular child element

Order is very important when you are using pseudo class to style the links

:link, :visited, :hover, :focus, :active

To style odd/even elements or table we use :nth-child pseudo class.

Syntax - Selector: pseudo-class {
property: value }

e.g.

a:hover {

---css properties---

The width of viewport can never be changed, we write media queries to change how an elements looks like in particular viewport.

→ How To use :nth-child pseudo class, in CSS?

Ans - It can be used to style or format specific elements of a particular type. It takes an argument which can be word, number or equation.

e.g if you want to apply red background to all odd numbered of elements & yellow background to all even numbered of elements, you can

Write the code as:-

```
p:nth-child(odd) {  
    background-color: red;  
}  
  
p:nth-child(even) {  
    background-color: yellow;  
}
```

⇒ How do I check if there is some error in my HTML or CSS code?

Ans If code doesn't show desired output, there are chances that code ~~are~~ is erroneous. Most browsers provide a good way to find out common errors.
eg In Google Chrome right click on webpage with improper output & inspect ~~it~~ it using inspect element or by pressing F12 key. Open console to check if there are any errors in the code

⇒ How to change type of cursor in CSS?

Ans By using cursor property of in CSS

eg: p { cursor: pointer; }

Meta information means information about information. It is an empty element so it does not have a closing tag.

Important meta tags

<title> my webpage </title>

→ Title tag - sets title of page, which is displayed on browser tab.

→ Description - sets page description in 3-4 lines. This information is displayed on search result as link description.

⇒ <meta type="description" content="This is my Indonesian webpage">

→ Meta Robot - defines to what extent a crawler or robot can access the page -
<meta type="robot" content="index, follow" />

name or type (in case of meta tags)
meta name = "description"
meta type = "descriptor" both are same.

(3)

- Meta keywords - are an important part of SEO. These comma(,) separated words define content that exists on the page & is used by search engine to match with ^{search} query.
(meta type = "keywords" content = "Internshala, webpage, meta tags")
- Meta revisit-after defines after what time a search engine crawler should revisit the page.
(meta type = "revisit-after" content = "period")
- Meta language defines what language is the page written in!
(meta type = "language" content = "english")
- Meta author defines the author of page content, helps in author based search engine queries!
(meta type = "author" content = "Internshala")

SEO or Search Engine Optimization is a technique used to attract web crawlers to rank your sites higher in web search results. SEO techniques can be used to show your site higher in the list of search results in a search engine.

Media Queries are used to define ^{different} style rules for different media types/devices. Media query look at the capability of device & can be used to set style for different properties of device such as its height, weight, width, orientation etc.

⇒ How can I place an element over another element?

Ans - You can use z-index CSS property to create visible 3D effects by placing elements over elements. You can use the z-index property to select which element appears on top of which element. The element with higher value of z-index will appear on top of element with lower value of z-index.

e.g. p1 { z-index: 0; }

p2 { z-index: 1; }

<meta name="viewport" content="width=device-width",
initial-scale=1.0>

Important

for all webpages

as it to

make them responsive.

for refreshing webpage

<meta http-equiv="refresh" content="5" />

⇒ Which attribute adds default value to the form input elements?

Ans value.

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Bootstrap

Bootstrap is the most popular HTML, CSS & JS framework for developing responsive, mobile first projects on the web.

Launched in August 2011. It has become developers choice for UI development.

Advantages of bootstrap

- | | |
|------------------------|--------------------|
| → A developer's dream | → Javascript added |
| → device friendly | → well documented |
| → Customizable | → Grid System |
| → Huge community | |
| → Development friendly | |

There are many more points other than those which makes Bootstrap better.

Multiple Classes

- It is one of best ways of defining complex web page layout & design. At times, we have to make minor changes in an element while keeping everything else just the same. This can be achieved by using multiple classes on the element we plan to make changes to.
- Use of multiple classes on an element is a core part of designing web pages using bootstrap. Bootstrap has a number of predefined classes. To use styling defined in pre-defined classes, number of times, we have to assign two or more classes on single HTML element.
- If two classes assigned to a given element has different values for common attribute, then class which is defined later in the external stylesheet or within the style tag, will override the properties of the class defined first.
- You can use second class to assign additional properties as well.

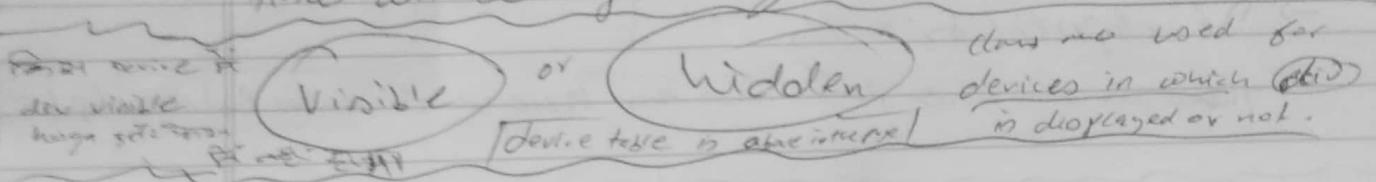
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No screen size in any category overlap with other category.

Devices	Screen size	Bootstrap name
Large devices	$>= 1200 \text{ px}$	lg
medium devices	$992 - 1199 \text{ px}$	md
small devices	$768 - 991 \text{ px}$	sm
extra small devices	$< 768 \text{ px}$	xs

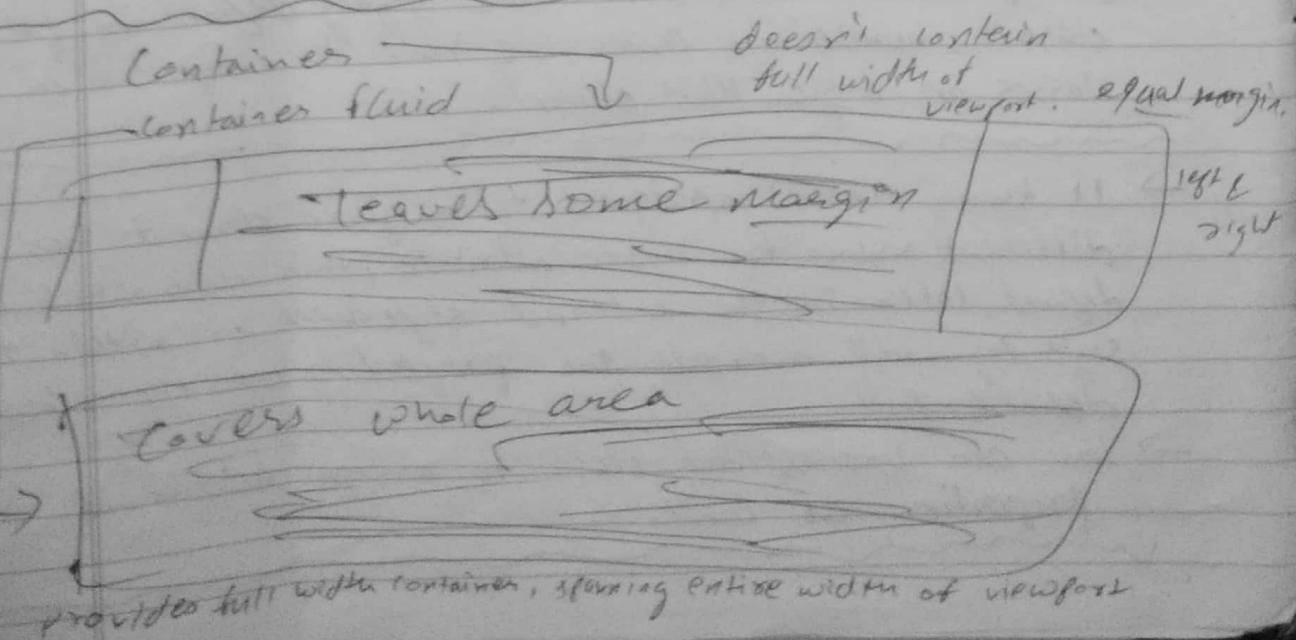
⇒ Why should we use bootstrap/jquery CDN?

As there's a high probability that someone visiting your website has already visited a site using CDN for bootstrap/jquery. This means the file has already been cached by their browser & won't need to be downloaded again. And thus, your website loading time will be significantly reduced.



Bootstrap classes adds predefined CSS properties to HTML elements. Use inspect element on output of classes to know which properties are added by bootstrap class.

- This will show exact CSS properties & media queries responsible for behaviors of HTML elements.
- Quiz question will be dependent on CSS added by bootstrap classes. Check in Inspect element, which CSS properties & their values are added by bootstrap.



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Jumbotron

grey box

This is a jumbotron.

Glyphicons

e.g.

Q search

+ files

heart

home

etc.

⇒ Consider a jumbotron with `<h1>` tag in it. What is the major breakpoint when jumbotron changes the CSS properties of the elements inside it for responsive behaviour.
As Jumbotron applies media queries for the devices with `min-width: 768px`. Below 768px, different CSS properties are applied.

{ class = table table-striped table-bordered



Table

table-hover ⇒ When you take the mouse to the specified row the background color of the row changes.

`div (class = "table-responsive")`

When we make `page < 768px` it adds `overflow-x: scroll` to the page.

As `Overflow-x: auto;` adds a scroll bar at the end.
⇒ ~~the property~~ ^{scroll} `table-responsive` adds to which results in scroll bar at the bottom?

→ Bootstrap grid structure

12 columns of equal size in 1 row

12 is the max no. of columns 1 row can hold

col - span-type - numbers

e.g. `col-12-6`

offset

200px

offset

we can achieve not using offset

(old)

col = <col offset=2>

(new)

col = <col> <col> <col>

Q-

What does "push" & "pull" mean in following class declaration "col-sm-push-3" & "col-sm-pull-6"?

A)

Push means it move the cols to right & pull means it will move cols to left.

Q-

How to open responsive mode in web browser?

A)

Hit F12 or Ctrl+Shift+I for inspect element. Then click on mobile icon in the menu.

Columns have padding on the left & right side which adds some space b/w two columns. No margin property is given to the columns.

Bootstrap adds float:left property to all column classes.

Consider a webpage of 1200px. The code for body section is given below. Calculate position for second div.

```

<div class="container-fluid">
  <div class="row">
    <div class="col-sm-5">
      Column 1 </div>
    <div class="col-sm-2 col-sm-offset-2">
      Column 2 </div>
    </div>
  </div>

```

As - webpage 1200px
 contain fluid left border 15px right border
 Row class margin-left = 15px margin-right = 15px
 available width for cols 1200px
 equally divided into 2 cols so each
 col has 1200px
 first div = 5 * 1200px = 600px
 col-sm-offset-2 take div 2 to 5th column
 hence position of second div is [1200 - 1200]

Navbar

(navbar-default) → background-color - white
 text color - black
 navbar-inverse → body color - black
 color - white

```
<button type="button" class="navbar-toggle" data-toggle="collapse" data-target="#myNavbar">
<span class="icon-bar"></span>
</span>
</button>
```

Buttons

```
<div class="collapse navbar-collapse" id="myNavbar">
<ul class="nav navbar-nav navbar-right">
<li><a href="signu.php"><span class="glyphicon glyphicon-user"></span></a></li>
<li><a href="login.php"><span class="glyphicon glyphicon-log-in"></span></a></li>
</ul>
</div>
```

when
inverse

signu	log-in
-------	--------

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Images

To make an image responsive use class img-responsive
 in img tag.

- Q How much border-radius img-rounded class adds to the div element → 6px.
- Q How much border-radius img-circle class adds to the div element → 50%.
- Q If both img-circle & img-rounded is assigned to one image. What is the final shape of the image?

Ans img would have img-circle properties.

Img-circle class border will override img-border class.

Thumbnail are the images with compressed size.
we use caption tag inside thumbnail class where we want to add caption to an image.

Q What padding thumbnail class give to the div element to create some space on all four sides?
Ans 4px

Styling forms

→ disabled attribute is used for disallowing user ^{not} to enter data in that field.

* for vertical forms we use form-group class inside form tag.

\$ for making forms inline form-inline class is used.

form control class is used to provide bootstrap's global styles for the form inputs. for example: input, textarea & select elements with class form-control have a width of 100% for horizontal form & width auto for inline forms.

Button classes in bootstrap -

btn-primary

btn-success

btn-info

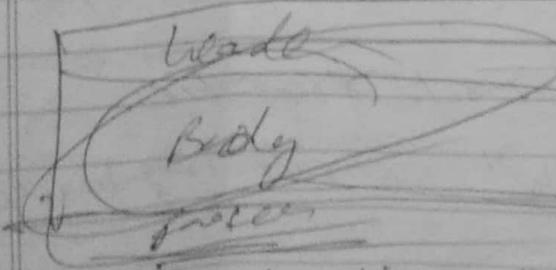
btn-warning

btn-danger

Q Why form-group class is added for all input fields?

Ans To provide margin-bottom: 15px

PANEL



Padding inside panel is provided by panel-body, panel-heading or panel-footer classes.

If none of them are used then no padding will be applicable. Only border property will effect.

Q → What will be the output of the following code?

```
<div class="row">  
  <div class="col->s-4"></div>  
  <div class="col->s-9" col->s-offset-4"></div>  
</div>
```

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Ans - The first col div will be in the first line, while second col div will be in the second line & will start from where first div ends. The whole page will have horizontal scroll.

Q In the following code, how many children will be present in first line?

Ans

```
<div class="row"> <div class="col->s-3">  
</div> <div class="col->s-4"></div>  
<div class="col->s-1"></div> <div class="col->s-5">  
</div> </div>
```

Ans 3 In the following code how many child elements will be present in first line?

```
<div class="row"> <div class="col->s-3"></div>  
<div class="col->s-4" col->s-offset-4"></div>  
<div class="col->s-2"></div> <div class="col->s-5"></div>  
</div>
```

Ans 2 What does class form-group do?

Ans Adds a margin at the bottom element with class form-group.

Q - What width does following element have? `<div class="col->s-13">`

M col->s-13 is not a predefined bootstrap class. Therefore, bootstrap does not add any CSS to this HTML element. Therefore its width will always be 100%.

Q What is the use of form-control in bootstrap?

Ans form-control class is used to provide bootstrap's global styles for form inputs. for e.g. input, textarea & select elements with class form-control have a width of 100% for horizontal forms & auto width for inline forms.

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SQL

PAGE NO.	
DATE	

Database — A collection of individual data items in a structured manner which can be stored in a single location or can be distributed across large networks.

In database we can save text, images, audio, video

DBMS - A system application for creating & managing data

Types

- Flat file system
- Relational database - Hierarchical, RDBMS
- NoSQL - key value, column oriented, document oriented, Graph DB

(1) Flat file system - It is one of the earliest to understand & oldest technique used. It basically revolves around creating a single file that would act as a huge dump for data. All the records will be stored in the single file.

(2) Relational database - One of the most widely used techniques. Here we split data into various tables and link each other based on the relations they carry. It works best when the data you get is structured & organized properly.

(3) NoSQL Database - Often known as 'Not Only SQL'. The necessity of developing such technique was due to rapid increase in unstructured data in the industry. Such systems don't work on standard RDBMS concepts & cater to unstructured data appropriately.

WAMP - Windows Apache Microsoft PHP

WAMP Installation Process

- Download WAMP from its original website
www.wampserver.com/en/
- Go to download section & choose download wampserver according to your system requirement
- When download is done click on the icon to install it.
- Select default language as English
- Choose accept the agreement
- next
- next
- choose destination folder
- Install
- Choose default browser
- choose text editor
 (Follow Apache HTTP server)

Software application that can be used for SQL.

- WAMP for windows, LAMP for Linux, MAMP for Mac, XAMPP for all platforms.

Q. How to fix "wampserver msver110.dll is missing"

A. "wampserver runtime 110.dll is missing"?

A. Download & install microsoft visual c++ redistributable 2008, 2012, 2015. from <https://www.microsoft.com/en-in/download/details.aspx?ID=>

value	2	for	2008	Version
link	32679	for	2008	
link	41935	for	2015	

MySQL datatypes

<u>Type</u>	<u>Size</u>	<u>Description</u>
char[length]	length bytes	A fixed length from 0-255 char long
Varchar[length]	length + 1 bytes	" variable " " " " "
Tinytext	1 byte	" string with maximum length of 255 chars.
Text	length + 2 bytes	" " " " " " 65535 "
Medium	" + 3 "	" " " " " " " " 16,777,215 "
Long	" + 4 "	" " " " " " " " 4,294,967,295 "
Tinyint[length]	1 byte	Range -128 to 127 or 0-255 unsigned
Small	["] 2 bytes	" -32768 to 32767 or 0-65535 "
Medium	["] 3 "	" -8,388,608 to 8388608 or 0-16777215 "
Int	["] 4 "	" -2,147,483,648 to 2147483647 or 0-4294967295 "
Big	["] 8 "	" -9223372036854785808 to 9,223,372,036,854,709,507 or 0-18,446,744,073,709,581,615 "
Float	4 "	A small number with floating decimal point
Double	8 "	" large " " " " " "
Decimal[length,decimal]	length + 2 bytes	" double stored as string, allowing for fixed decimal point"
Date	3 bytes	In the format YYYY-MM-DD
Datetime	8 "	" " " " YYYY-MM-DD HH:MM:SS
Timestamp	4 "	" " " " YYYYMMDDHHMMSS acceptable range ends in year 2037.
Time	3 "	In the format HH:MM:SS
Enum	1 or 2 "	Short for enumeration, which means that each column can have one of several possible values.
Set	1, 2, 3, 4, or 8 bytes	like enum except that each column can have more than one of several possible values.

SQL

used for communicate with database.

MySQLi is the advanced version of MySQL.

⇒ Create database database-name;

⇒ Create Table database-name.table-name (column-name
datatype(value), ...);

{Creating table without database name is not
a valid statement.}

⇒ Create Table database-name.table-name (column-name
datatype(value) Not null, ...);

This will not allow the user to insert
null value in not null column
specified.

Primary key

Create table temp-db.product (id int not null
name varchar(30), category int(30), primary key(id))

or

Create table temp-db.product (id int not null
primary key, name varchar(70), category int(30));

Create table temp-db.product(id int auto-increment
primary key, name varchar(30), category int(30));

This command will automatically add new id to each new entry.

Without making a column as an primary key, one can not autoincrement it.

It is not mandatory to use auto increment for primary key but it is the best approach to let database handle the unique values in the column.

⇒ Alter table database-name.table-name Change
Column-name new-column-name datatype (length) constraints;

⇒ Alter table temp-db.temp-users Change first-name name
varchar(285);

⇒ Alter table database-name.table-name Modify
column-name datatype properties;

⇒ Alter table temp-db.temp-users Modify last-name
varchar(285) not null;

⇒ Alter table temp-db.temp-users Modify name char(255)
not null;

⇒ Alter table temp-db.products Modify ID int not null;

- ⇒ Alter table temp-db.products Add primary key (id);
 ⇒ Alter table temp-db.products Modify column id as auto-increment;

~~Drop table database.table-name;~~

~~Drop database database-name;~~

diff b/w Change & Modify

Change - rename a column
 change its datatype
 move it within the schema.

Modify - ~~(rename)~~ X
 change its datatype
 move it within schema.

~~Drop table database.table-name;~~

Truncate table users_products;

Truncate table users;

Create table users_products_guess;
 Create table users_guess;

DML

Insert -

Update -

Delete -

Select -

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SQL Joins

Used to perform action on two or more tables simultaneously.

Inner-Join

Query fetches you rows which have common entries in two columns.

If there are multiple rows in these tables with same common value, query will display each of such rows.

- ⇒ Select * from users_products inner join users
on users_products.users_id = users.id ;
- ⇒ Select * from users_products up inner join
users u on u.id = up.users_id ;
- ⇒ Select u.firstname, u.phone, u.email from users_products
up innerjoin users u On u.id = up.users_id ;
- ⇒ Select u.firstname, u.phone, u.email, p.name from
users_products up inner join users u On
u.id = up.users_id inner join products p On
p.id = up.product_id ;
- ⇒ Select u.firstname, u.phone, u.email, p.name from
users_products up inner join users u On
u.id = up.users_id inner join products p On
p.id = up.product_id where p.name = 'derelicto-
pient' OR p.name = 'animal_farm' ;

where can't be used with aggregate functions while having can be used with aggregate functions

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left join

Select * from users left join usersproducts
UP On uid = up.userrid;

Select * from usersproducts left join users
On up.usrid = uid;

Q) Which among cannot be done on phpmyadmin
And writing a php script

(E) It is not possible to add an auto-increment feature to a column which is not the primary key

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- Hypertext Preprocessor
- PHP is a server side scripting language which is used to perform operations on database.
- It helps in building dynamic pages

ECHO statement is used to display output in the browser

<?php

php code

?>

ECHO statement is not case sensitive.

Q → If I am using any other text editor instead of netbeans, then how can I run my PHP code?

- AS
- i) Install WAMP / XAMPP
 - ii) put your project in
-- path/wamp/www or
-- path/xampp/htdocs
 - iii) run wamp/xampp
 - iv) ~~localhost/project-name/filename.php~~
in browser & run it.
 - v) In netbeans
① install wamp/xamp
② put your project in folder
path/favicon/forw
path/xamp/htdocs
for run wamp/xamp
 - vi) run from netbeans by
clicking on  icon.

Q Diff b/w static & dynamic websites!

Ans In static content is fixed. Every visitor to that page will be greeted with exact same text, multimedia design, or video every time he visits the page until you alter page source code.

In dynamic website however, content can be changed at runtime. Dynamic website has a backend written in PHP, Python, Ruby etc. These website can take user input & change their content based on databases, external APIs etc.

Q - How to debug PHP code ?

Ans The browser notifies the problem through a warning or a notice or an error. This notification consists of warning/notice/error that has occurred & also specifies the line number in PHP file where this has occurred. You can just go that line & check your code to rectify it.

Q Different ways of adding comments in php!

- Ans**
- (1) // (double slash)] single line comment
 - (2) # (hash)
 - (3) multi line comment (/* */)

Q Difference b/w print & echo ?

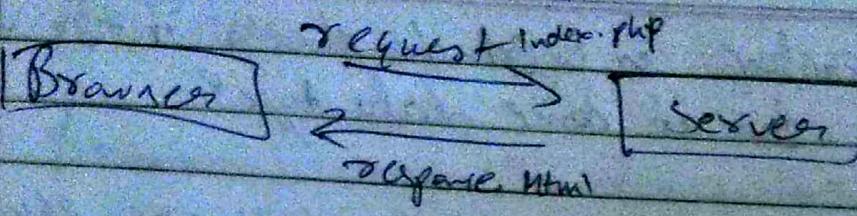
Ans Echo & print are more or less the same. They are both used to output data to the screen. The difference is echo has no return value, while print has return value so it can be used in expressions. print can't just print one variable while echo can print multiple variables separated by comma(,) in syntax.

Q Rules for naming a PHP Variable?

Ans Variable name must begin with a letter or (-) underscore character. In PHP numbers, letters underscore are allowed for a variable name but you can't use characters like +, -, %, !, ;, :, &, etc.

Q What is the use of include_once ?

Ans If includes a specified file, a file that has already been included, will not be included again. It will produce a warning if fails to find the file & execute remaining script. A fatal error if it fails the file & execute remaining script.



\$ Variable-name Syntax for declaring a variable
 e.g. \$var1 = 20;

echo 'get type(variable)' / It will return integer and
 will be displayed on screen

Concatenation is an action of combining two strings
 to make it one string.

```

$ var1 = "Hello" ;
$ var2 = " Intermediate" ;
echo $var1 . $var2 ;
```

 This operator is used for concatenation in php.

```

$ var1 = 18 ;
$ var2 = 12 ;
echo "The value for first variable is " . $var1 ;
```

⇒ 12

Boolean variable

\$var = True;

Arithmetical

+ , - , * , / , %, ** Exponentiation

e.g. 5² = 25

Result of raising 3 to 4
 the power 36 is introduced
 in php 5.6.

Logical

AND OR, XOR, NOT, mod

and, ||, xor, !, ~

log, exp, log10

& Which operator is used to check if two values are equal & of same data type?

Ans

==

Explanation - == simply checks if values are equal.
== checks if both values & datatypes are equal.

e.g. \$a = 2

\$b = "2"

\$a == \$b true

\$a == \$b false because \$a is
 of integer type while \$b is of string

A function is an independent code that performs a particular task.

function definition

```
function function_name ($parameter1, $parameter2)
{
    $addition = $parameter1 + $parameter2;
    return $addition;
}
```

func calling [function_name (\$parameters)]

function names are case sensitive. sum & sum will be considered as two different functions in php.

An array is a special variable which can hold more than one value at a time.

\$numbers = array(18, 12);

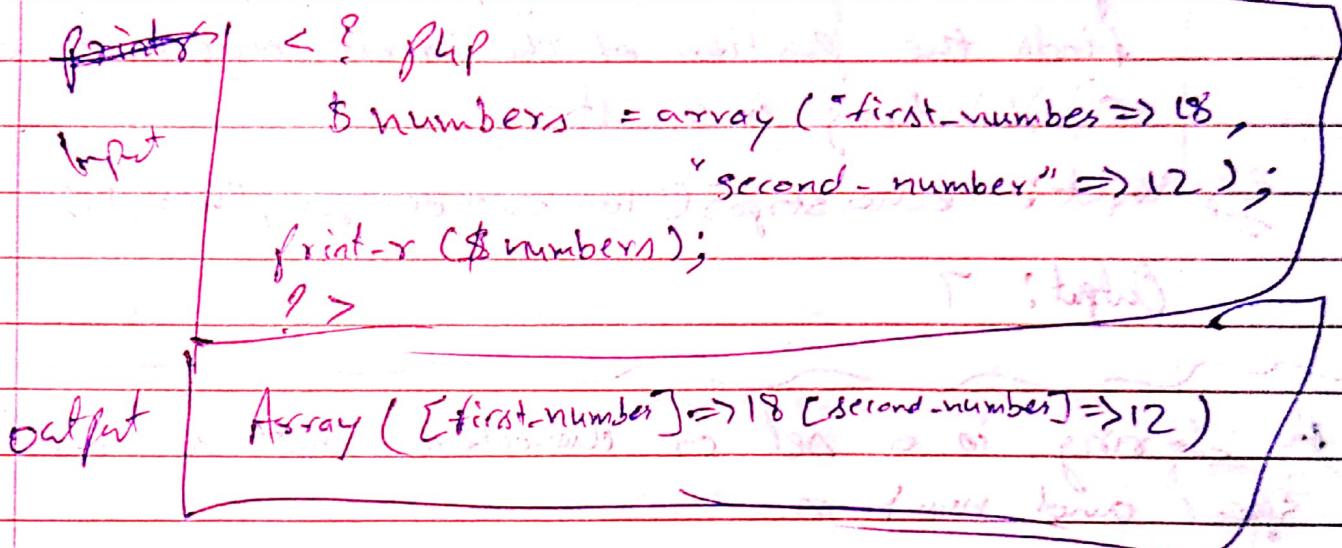
length of array is

sizeof(\$numbers)
 count

Associative array

`$numbers = array ("first-number" => 8, "second-number" => 12)`

Here `first-number`, `second-number` are defined as string indices.



2D array

`$numbers = array (array (4, 12), array (1, 2));`

Diff b/w single quotes & double quotes.

Single quotes

→ double quotes inside single quotes will be considered as strings.

→ Variables inside single quotes will be considered as strings and will display the variable name only.

e.g. `Input - $variable = 5;`
`echo 'The output is $variable.';`

Output The output is \$variable.

Double quotes

→ Single quotes inside double quotes will be considered as strings.

→ Variable inside double quotes will be considered as variables only & will display value of variable instead of name.

e.g. `Input - $variable=5;`
`echo "The output is $variable";`

Output The output is 5.

Commonly used string functions will be:

- (String) • strrev - Returns the reversed string.
- (String) • str strtolower - Returns the string with all characters in lowercase only.
- (String) • str uppercase - Returns the string with all characters in uppercase only.
- strpos (\$string, \$find, \$start) - This function finds the position of the first occurrence of a substring in a string.

Eg Input: echo strpos("I am a web developer", "web", 1);

Output: 7

A string is a set of characters that can contain spaces and numbers.

strlen(\$string);

Variables used inside the function have no existence outside the function. To get the return of the function, we need to store it in a variable or directly write echo "Division of two numbers is ". divide();

29. PHP

```
$array = array("first_number" => 1);  
echo $array['First_number'];  
?>
```

In associative array, index is case sensitive. In declaration index is first_number. In echo statement, index is First_number with first alphabet uppercase. So this index is not present.

Output is blank.

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if (condition) {

 Statement

 }

 single condition

 else {

 Statement

 }

 if

 else if

 else if

 else

Multiple

conditions

\$counter = 1

while (\$counter <= 5)

 {

 echo \$counter. "
";

 \$counter++;

 }

output

1

2

3

4

5

.

for & for each

initialization

condition

update

for (\$counter=1; \$counter<=5; \$counter++) {

 echo \$counter. "
";

}

foreach loop is used to loop through arrays

\$marks = array(4, 8, 15, 16, 23, 42);

foreach (\$marks as \$mark) {

 echo \$mark. ", ";

}

```
$marks = array("first-number"=>4, "second-number"=>5);
foreach ($marks as $mark_index => $mark_value) {
    echo "The index is $mark_index, the value
          is $mark_value <br/>";
}
```

3

Database Connection

Syntax

for connecting database

```
mysql_connect("host", "username", "password",
              "database-name");
```

mySqli error

Q What is the output of the following code?

Az <?php

```
$variable1 = "10";
$variable2 = "5";
die($variable1);
die($variable2);
?>
```

Az 10

first die will print the value of \$variable1 and die function stops the execution of the further code.

mysqli_query function : This function is used to run SQL queries in php. The function takes two parameters - (1) Connection variable.
(2) Variable in which SQL query is stored.

This time will return the data depending upon SQL query. This will contain data if select query is executed. It will contain boolean value indicating TRUE (query successfully created) or FALSE (error in executing the query).

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< ?php

```
$con = mysqli_connect("localhost", "root", "", "ecommerce");
    or die (mysqli_error($con));
$select_query = "Select id, email_id, first_name
    from users";
$select_query_result = mysqli_query($con, $select_query)
    or die (mysqli_error($con));
$row = mysqli_fetch_array($select_query_result);
echo $row[0]. "<br/>";
echo $row[1]. "<br/>";
echo $row[2]. "<br/>";
```

?>

Output

```
| venu@xyz.coms
| Venu
```

Q How to stop the execution of rest of PHP scripts in the code?

A We use the exit() or die() function to stop the execution of remaining PHP script.

Q Where do we need to write the mysqli_connect function?

A Make a separate file for the connection & include that file in all the web pages where you need database connection.

Q Explain: \$result=mysqli_query(\$con,\$sql) or die ("Error in connection".
 . mysqli_error(\$con));

A mysqli_query(\$con, \$sql) runs the query you stored in \$sql variable on port number of sql server saved in \$con variable.

- If the script runs successfully then it saves the result in \$result variable
- If the script doesn't run successfully the mysqli_error() displays the error, the die function prints a message and exits the current script.

Q

How to check whether the data is inserted in the database?

Ans

Store the result of mysqli_query in a variable & if that ~~return~~ true, the data is inserted otherwise not.

```
eg $result = mysqli_query ($con, $sql);
if ($result) {
    echo "data inserted successfully";
} else {
    echo "Error in inserting records" . mysqli_error
    my ($con);
}
```

form tag contains two attributes:

Action & method

① Action-attribute consists the name of the file to which the form data will be sent. This attribute may or may not contain any value. If no value is mentioned or this attribute is not mentioned in the form tag, the data will be sent to this page only.

② Method attribute can have two values Get or Post

diff b/w Get & Post

GET

- Values appear in the URL.
- Values can be bookmarked.
- less secure
- There is a limit on characters which can be sent through URL

POST

- Values do not appear in the URL.
- Values can't be bookmarked.
- more secure
- There is no limit on the characters send through POST requests.

Code & explanation of user-registration.php

<?php

// connection established

\$con = mysqli_connect("localhost", "root", "", "ecommerce")
or die(mysqli_error(\$con));

// Store form values into variables.

\$email = \$_POST['email'];

\$last-name = \$_POST['last-name'];

\$first-name = \$_POST['first-name'];

\$Phone = \$_POST['Phone'];

// Store insert query in a variable. Use double quotes to let PHP treat variables as variables only.

\$user-registration-query = "insert into users (email, first-name, last-name, phone) values ('\$email', '\$first-name', '\$last-name', '\$Phone');"

// Execute the query

\$user-registration-submit = mysqli_query(\$con, \$user-registration-query)
or die(mysqli_error(\$con));

If the echo is executed, this means query successfully executed. Otherwise die function with mysqli_query functions would have stopped the execution of the code.

echo "User successfully inserted";

Q 7

Q What is the use of \$REQUEST variable?

The PHP \$REQUEST variable contains the contents of both \$GET & \$POST & \$COOKIE. The PHP \$REQUEST variable can be used to get the result from form data sent with both the GET & POST method.

~~1-7-18~~ Webpages don't have any memory.

Session enables the websites you are visiting to keep track of your movement from page to page.

Session Variable :

session_start();

session_unset();

session_destroy();

unset();

Q How to unset single session variable?

Ans We can unset by using unset() function : e.g

unset(\$_SESSION['variable-name']);

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Q How can we add validation that only logged in users can visit a particular page?

A Check whether session variables are set or not using `isset($_SESSION['username'])` if variable is set then user is logged in otherwise not.

Q The use of `isset()` function?

A The `isset()` function is used to check if the variable is set with some value, for example -

- The example here means if the field "username" in the `<form>` tag is set to some value then only run the script in brackets.
- If the field is not set with some value & is empty then skip running the script.
- `isset` is usually used to check if user has entered some value to the variable / field in the form.

Q Can `isset()` function be used to redirect php page to another php page?

A The `isset()` function is used when there are functions to be performed if any input type is set. We always use `isset()` with loops.

E.g. `if(isset($_POST["submit"])) { -- code -- }`
It can't redirect php pages to another but can be used as a condition to redirect.

`if(isset($_POST["submit"])) { header("location: home.php"); exit; }`

This code will redirect the webpage if submit button is set to home.php page.

Q How can a session variable be defined in one php file & transferred to another php file? Can multiple php files share the same set of session variables and be in the same session?

- Ans → A session creates a file in a temporary directory on the server where registered session variables and their values are stored.
- This data will be available to all pages on the site during that visit. The location of the temporary file is determined by a setting in `php.ini` file, called `SESSION_SAVE_PATH`.
 - When a php script wants to retrieve the value from a session variable, PHP automatically gets the unique session identifier string from the `PHPSESSID` cookie & then looks in its temporary directory for the file bearing that name.
 - SESSION variables are stored in associative array called `$_SESSION[]`.
 - These variables can be accessed during life-time of a session.
 - Yes, multiple files can access the same set of session variables by initializing `session_start()` function at start of time.

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mysqli_insert_id()

returns the id of the row that was recently entered.

We get first name by get request.
i.e. \$first_name = \$_GET['first-name'];

We get user id from the session
i.e. \$user_id = \$_SESSION['id'];

session_unset() deletes only the variable from session but session still exists, only data is truncated.

session_destroy() will destroy the entire session from the server & session_id from the browser

Header function

The header() function sends a raw http header to a client. In simple words, header redirects the user to another page.

Suppose we want the logged out user to open only index page. If logged out user tries to open any other page, it should be redirected to index.php page.

2.php

Code

```
if (!isset($_SESSION['id'])) {  
    header('location:index.php');  
    exit;  
}
```

Header function takes a string parameter
(location: name of webpage.php).

Header functions should be used before we echo or display any HTML document element because user will be redirected as header function is encountered in the code.

~~Code challenge~~

~~Store page views in session variable~~

Instructions

- Create index.php file
- Start session using session_start()
- Check whether \$SESSION['views'] is set. If yes increment the value stored in the session by 1. Else initialize views session & store value in it.
- Echo the value of session.

Now if <?php

```
if (!isset ($SESSION['views'])) {
```

```
$SESSION['views'] = $SESSION['views'] + 1;
```

}

else {

```
$SESSION['views'] = 1;
```

}

else "views" . \$SESSION['views'];

?>

views = 3

If the code is not written in braces of if & else condition then the output of views will be two

include statement does not show any error if you write wrong name of the file.

Require stops execution of code if the file doesn't exist while include statement doesn't stop execution every statement after include will be executed.

Security features

→ Password are encrypted

⇒ md5 algorithm is used for encryption

Which is more secure?

MD5(\$password) or MD5(MD5(\$password))

MD5(MD5(\$password))

→ The output of inner MD5 will be the input of outer MD5. If we try to decrypt, firstly we will get one code. Then again decryption algorithm will run to get the original string. So double is more secure.

For validation we use pattern attribute

pattern for email

[a-zA-Z0-9_+-%.-]+@[a-zA-Z.-]+\.[a-zA-Z]{2,3}

pattern for password ~~123~~

• 26, 3

for this pattern visit <http://html5pattern.com>

preg_match() is used for frontend validation in php

preg_match(pattern, string)

Q Can we disable frontend validation?
A Yes. we can disable/remove front end validations. In input element, we can remove pattern attributes. This will allow us to submit the form without validating user input.

Q Can we disable backend validation?
A No validation

Backend code is not present in the browser. It executes the code on server and response is send to the browser. So backend validation cannot be removed/disabled.

Q What is the use of header function in php file?

A Header function is used to redirect to another webpage.

e.g. header("Location: abc.php");

This will redirect you to different page called abc.php.

Q What do you mean by \$SESSION['view']?

A This is the view key of \$SESSION array. It represents the value stored inside the array with a key named view.

\$SESSION is an associative array.

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Q What is the output of the code? consider code with line numbers

```
1 <?php  
2 function increment($number) {  
3     $number = $number + 1;  
4     return $number;  
5 }  
6 $number = 1;  
7 $incrementedNumber = increment($number);  
8 echo '$number';  
9 ?>
```

B 1 ✓

When code will start executing

Q Output of the following code:

```
<?php  
$variable = NULL;  
if (! $variable) {  
    echo 'if condition is true';  
} else {  
    echo 'else condition is true';  
}
```

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Ans

If condition is true.

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Final Test

Q Which HTML element is used to display Glyphicons.

A Any non-empty HTML element can be used

You can use any non-empty HTML element for using glyphicons like `<div>, , <i>, <button>, <a>`. But you are not able to define in br tag input tag.

Q What will be the padding assigned to div element?

A `{ padding: 5px 10px; }`

`{ padding-right: 15px; }`

(index.html)

`<div class = "A B">` This is a div element </div>

A)

`top: 5px bottom: 5px`

`right: 15px left: 10px`

Q Which important CSS properties does class `.img-thumbnail` add?

As

padding, border, border-radius.

Q Default width of div element

As

100%.

Q `mysql_real_escape_string` adds backslash/escape characters in string to make sure execution is considered as string. This does not alter the value of the variables

Initialize variable contains null value

Q How much width will the button take up in this code

`<div class = "row">`

`<div class = "col->s-6">`

`<input type = "submit" class = "btn btn-block">`

`</div>`

`</div>`

A) It always takes 50% width

Q) Output of code

```
<?php $x = 5;
$x = $x + 10;
echo $x;
```

?>

Ans 15

Q) What is advised characters limit of meta description tag?

Ans 150-160 characters

It is advised to use 150-160 characters because search engines will truncate the rest of the content.

Q) Output of code

```
<?php function increment($number)
{
    $number = $number + 1;
}
```

die (\$number);

return \$number;

?>

\$number = 1;

increment (\$number);

echo "Program completed";

Ans

The die function will stop execution of code so there will be no output.

Q) Consider table A with primary key auto incremented & 4 records stored with primary key 1,2,3,4. If data is deleted from table A. What will be the value of primary key when new record is inserted?

Ans

Primary key will have value 5.

Q Consider table A with columns id, name & table B with columns id, a-id, address. What will be the sequence of columns if query is Select * from B inner Join A on B.a-id = A.id;

Ans id, a-id, address, id, name

Q → position of following div elements

`<div style="float:right"> A </div>`

`<div " " > B " "`

`" " " " C " " " "`

Ans

CBA

Q Consider the table test with following column gender enum ('male', 'female') NOT NULL

Query: Insert into test(gender) values ('female');
What will be stored in gender column if query is executed?

Ans female

Enum will accept only specified values. All other values will be truncated as an empty string. So female is inserted.

Q What will be the output of following code?

`?> php $string = "Internshala";`

`$insert_query = "Insert into user(name)
values ('$string')";`

`$result = mysqli_query($con, $insert_query) or
die(mysqli_error($con));`

`ECHO 'User successfully inserted';`

Ans Error ?>
Connection to the database is not established. Insert query will throw an error

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Q OutPut:

? Php

```
function increment ($number) {  
    $numbers = $number + 1  
    return $number;  
}
```

```
$number = 1;  
increment ($number);
```

```
echo "Program completed";
```

No

Program completed.

Echo statement inside the increment function is written after return statement. Return statement stops execution of code inside the function & will return to the code where function was called; So any code after return statement inside the function is unexecuted & will never be executed. So the output of the code is 'Program completed'.

Q

Why should the value of 'for' attribute of label tag be same as the id of corresponding input element?

Ans This is necessary so that clicking on label directly takes focus to the corresponding input element.