**Windows vs Linux**

1. Windows is paid licensed version os and Linux is open source OS
2. Windows security is always needed Linux security is no need for anti-virus
3. Software updates easy for Linux and windows are every time needs java
4. MS Office working is good for Linux and windows is excellent for ms office
5. Linux is can't easy to learn and windows are easy to learn
6. Linux's programming part is very easy and windows are comfortable but not much compatible

**Linux Command Line**

1. php -v
2. mysql -V
3. apache2 -v
4. uname -r

**SDLC**

* Software development life cycle
* SDLC by means of step-by-step development of quality software
* SDLC aims to produce high-quality software for customer expectations

**SDLC is following phases**

1. Gathering requirements and analysis
   1. To gather requirements for customers' needs and after analysis to possible or impossible then to estimate for cost schedule and time in R&d
2. Design
   1. The web page of the home screen for example different categories, today's deals, and gift cards to add some features to a design for customer needs
3. Development and coding
   1. To developers to stars the chosen codes and languages
4. Testing
   1. Testing is to compare b/w in customer needs and developer code
5. Deployment
   1. After being tested to live on the customer
6. Maintenance
   1. To external support for further issues

**Waterfall model**

* The waterfall model is a step-by-step process
* One process is completed then after starts the next process. for example requirements, the gathering is finished after then to start the analysis process

**Agile model**

* This method is to start the all process
* For example requirements gathering is parallel to the analysis process every process is parallel to another process
* The agile process is to easy intermittent to customers so, as to easily modify the project works to consumers' needs
* This process is to reduce the rework

**Magento 2**

* Flexible shopping store eCommerce flatform
* Magento is a feature-rich and professional open-source eCommerce solution that offers merchants complete flexibility and control over the look content, and functionality of their online store
* features include powerful marketing merchandising and content management, Magento is designed for scalability and is backed by an extensive support network
* which allows freely customizing modifying and adding more features, these features can't be included in any other flatform

**Versions began to**

1. Community Version
   1. This is open source version to use on the small fields
2. Enterprise Version
   1. This is the annual paid version of Magento and to use in mediam and large industries

**Features of Magento 2**

* This is other competitors like Shopify or woocommerce parties because of rich features ranging from marketing, SEO, site management, analysis, etc. can all domains of online merchants.
* Magento 2 is modified or added features. These features can't be any other platform.

**Maintenance**

* Magento 2 is a much more difficult and challenging task

**Magento 2 functionality**

1. Magento commerce cloud
2. Magento ordering
3. Magento shipping
4. Magento business intelligence

**There are the following 09 features in Magento 2**

1. Catalog Management
2. Content Management
3. Cart and Checkout Management
4. M[arketing](http://4.marketing/) Management
5. Ordering Management
6. Customer Management
7. S[tore](http://7.store/) Management
8. System Management
9. Analysis and Reporting Management

**Magento 2 file structure**

**App**

* Includes the design folder for themes
* The configuration file env.php and code create a new module

**Bin**

* Magento command line tool named Magento

**Dev**

* Testing files for the Magento Functional Testing Framework

**Lib**

* Various libraries and packages

**Pub**

* Generated static files, the website media

**Setup**

* The performance toolkit and other important packages

**Update**

* Similar to the downloader from Magento and contains upgrade files

**Var**

* Similar to Magento and includes raw cache files, logs, and reports

**Vendor**

* The closest to app/etc/modules

**Php server**

* Includes router.php

**Remove search terms then follow the link using**

<referenceBlock name="search-term-popular-link" remove="true"/>

**Remove privacy and cookie policy**

<referenceBlock name="privacy-policy-link" remove="true"/>

**MVC**

* Generally, there are two types of MVC: convention-based and configuration based. In the convention-based MVC, you need to follow the core system’s instructions to set up your module while in configuration based you will need to specify everything to your module’s configuration file to get started. While PHP is a convention-based MVC, Magento is a configuration-based MVC.

1. **Model**
   1. The system modeling layer. Its main scope is handling system business rules and data persistence.
2. **View**
   1. This is responsible for the user information display layer, such as the product page and contact form.
3. **Controller**
   1. This is the layer that defines the main actions, requests, and responses of clients that may change the model's state and generate data views of the model layer.

**Plugin**

* The plugin is a technical plugin for better writing code.
* By using this you can modify the behavior of a class while there is no need to change the class directly.

**Benefits**

* Modifying the return value of any method call that is used on an object manager-controlled object.
* Proceeding similarly when other modules are in progress of the same method in the same or predictable way.

**Declaring a plugin**

* It will be defined in the di.xml file at
  + app/code/{namespace}/{module}/etc/di.xml.

**API**

* The Magento web API framework provides integrators and developers the means to use web services that communicate with the Magento system. Key features include:
* Support for both REST (Representational State Transfer) and SOAP (Simple Object Access Protocol). In Magento 2, the web API coverage is the same for both REST and SOAP
* Three types of authentication:
  + Third-party applications authenticate with OAuth 1.0a.
  + Mobile applications authenticate using tokens.
  + Administrators and customers are authenticated with login credentials.
* API stands for Application Programming Interface to allows you access to the data from an application. API can be called a middleman between a programmer and an application. When the programmer calls for a request via the middleman, if the request is approved, the right data will be turned back.
* As eCommerce stores based on Magento 2 platform, you should look at two architectural kinds of web APIs: REST (Representational State Transfer) and SOAP (Simple Object Access Protocol). However, in the official documentation, they only come with raw curl requests without any example. In order to connect and use Magento 2 API effectively
* API module structure example

Prakash

World

API

Customer

CustomerInterface.php

etc

di.xml

module.xml

webapi.xml

Model

Customer

Customer.php

Registration.php

**EAV Entity Attribute Value**

* Entity stores information about the type of data being stored. In the case of Magento, this is customer product, category, etc.
* The attribute is the individual property of each entity (name, weight, email address).
* Value is the value of a given entity and attribute.

**DEVELOPER DEBUG IN MAGNETO 2**

* Debugging is a critical part of the development process for any eCommerce store.
* Some developers log the whole process and then start debugging, while others prefer debugging during the runtime – both are a great way to clean your eCommerce store of errors.
* Magento 2 Development Modes
  + Default Mode
  + Developer Mode
  + Production Mode
* Enable PHP Display Errors
  + Magento 2 has disabled the PHP display errors in the production mode for obvious security reasons. However, you can enable these display errors for debugging purposes.
  + To enable PHP display error reporting, open the $Magento2Root/app/bootstrap.php file and un-comment the ini\_set(‘display\_errors’, 1); line.
  + Here ‘1’ means the display\_errors option is now set to ‘On.’ This will display PHP errors encountered while loading the Magento 2 store in the browser.
* Enable Magento 2 Display Errors
  + When an error occurs, Magento 2 logs it in the var/reports file and does not display it on the screen. However, you can get it to post the error on your screen for debugging. To do so, simply enable it from $Magento2Root/pub/errors/ directory by renaming the local.xml.sample file to local.xml.
* Enable ‘Template Path Hints
  + To enable template path hints for debugging Magento 2 store, just log in to your Magento 2 Admin panel, and navigate to STORES > Configuration. On the left panel, under the ADVANCED section, click Developer. Extend Debug from the right menu and set Enabled Template Path Hints for Storefront, Enabled Template Path Hints for Admin, and Add Block Names to Hints to YES.
* Xdebug and PhpStorm combination
  + The combination of Xdebug and PhpStorm is one of the best ways to debug the Magento 2 store. The main advantage of this method is that it adds breakpoints to the installation process and can help the developer review and change variables at any given time.
  + To set up Xdebug, you need to configure a file in your Git repo or configure it in your environment. Next, configure PhpStorm as your IDE, and set up port forwarding.

**CURL**

* cURL is an abbreviation for Client URL Request Library. Basically cURL is the name of the project. ​cURL is used to transfer data from one place to another place. It is a command line tool for receiving and sending files using URL syntax. It consists of different cURL Commands and libraries that can work with different protocols.

**Advantages with CURL**

* We can see the downloaded file directly on the console
* Ability to save downloads to a particular file name.
* With a single command, we can download multiple files.
* There is an option to resume the download, from where it stops.
* Can set the rate limits for your downloads.
* It can work on all protocols.
* Shows the stats for the download like percentage and time.
* Works on a wide variety of protocols and can be used on any of your programs.

**Aapache2**

* Apache is a free open source cross-platform web server, apache is developed by an open community of developers under the apache software foundation.
* First web server software to serve more than 100 million websites

**Features**

1. Complied modules with extended core functionality
2. Loadable dynamics modules
3. Multiple request processing module
4. Highly scalable
5. XML support
6. Common language interface supports Python, Perl
7. Configrable error message
8. Severl differnt type gui support
9. Password authentication and digital authentication

**Apache virtual host**

* Single apache web server to serve a number of different websites, the virtual host is following two types
  + Name based on vhost
    - The single server to use on multiple websites
  + Address-based or IP-based vhost
    - The 10 number of websites to the 10 number of IP addresses in the vhost

**Apache directives are following the config file**

1. Transfer log - to create a log
2. Log format - to specify custom formate
3. Custom log - to create and format a log file

**Apache log format**

1. Common log format
2. Combined lof formate

**Apache 2 commands**

1. sudo service apache2 start
2. sudo service apache2 stop
3. service apache2 status
4. sudo server apache2 restart

**Errors stored in the error log**

/var/log/apache2/error.log

**Who accesses the Magento in time, localhost, firebox,**

/var/log/apache2/access.log

**MYSQL**

* MySQL is an open-source relational database management system open source MySQL project to create MariaDB, a component of lamp web application software stack which is an acronym for Linux, apache.MySQL is used for many database-driven web applications, including drupal. Joomla.phpbb,wordprss
* MySQL is used by many small and large businesses, powerful program in its own right it handles a large subset of the functionality of the most expensive and powerful data package
* MySQL is the standard form of the well-known SQL data languages
* MySQL works on many operating systems and many languages PHP, Perl,c,c++
* Mysql works quickly and works well when large data sets

**Mysql Commands**

1. service MySQL status
2. sudo service MySQL start
3. sudo service MySQL stop
4. sudo service MySQL restart

**Linux command line**

1. Create new table
   1. mysql> CREATE TABLE contacts(id INT, name VARCHAR(20), email VARCHAR(20),mobilenumber VARCHAR(40)
      1. contacts - - Table name
      2. INT - - Integer
      3. VARCHAR - - Variable Character
      4. INT,VARCHAR(20) - - Datatype
2. Row to table contacts using INSERT
   1. mysql> INSERT INTO contacts (id,name,email) VALUES(1,"Vivek","[xuz@abc.com](mailto:xuz@abc.com)");
3. To display all rows in data stored in the contacts table (RECORDS)
   1. mysql> SELECT \* FROM contacts;
4. To select multiple columns query
   1. mysql> select name,email from contact;
5. To use where condition
   1. mysql> select \* from contacts where name="Prakash";
   2. mysql -> select \* from contacts where name="ram"and email="ram@gamil.com";
   3. mysql-> select \* from contacts where name="ram" or email="[ram@gmail.com](mailto:ram@gmail.com)";
6. Update records
   1. mysql-> update contacts set name="ramki"; then the column name fully update in ramki
   2. myslq -> update contacts set name="prakash" where email="[praksh@gmail.com](mailto:praksh@gmail.com)";
7. Delete one record in the table
   1. mysql-> delete from contacts where name="Prakash";
8. Table name rename
   1. ALTER TABLE contacts RENAME authors;
9. To add a new column an existing column
   1. ALTER TABLE tablename ADD columnname datatype
10. To remove or delete a column:
    1. ALTER TABLE tablename DROP COLUMN columname;
11. To drop multi-table then
    1. drop table table1, table2, etc;
12. To column filter with like
    1. select \*from core\_config\_data where value like '%localhost%';
       1. core\_config\_data - - Table name
       2. %localhost% - - % means before and after a string
13. To index query
    1. SHOW INDEX FROM table name
       1. Presents the details of all indexes on the table, including the PRIMARY KEY.
    2. select \*from orders order by address asc;
       1. The above command is in ascending order of the address column

**Truncate**

* Another way is truncate is not continue to create new records and then start from 01
* If you delete all records but create a new record and then continue on the id Number, for example, if old records are 1000 then new records start from 1001

**PRIMARY KEY**

* A primary key must contain unique values
* A primary key column cannot contain NULL values
* A table has only one primary key.
  + create table tablename(id int,name varchar(10),primary key(id));

**FOREIGN KEY**

* A foreign key is a key used to link two tables together.
* A foreign key is a field (or collection of fields) in one table that refers to the primary key in another table. a foreign key means one table into another table mapping.
  + create table orders123(id int(10) not null auto\_increment primary key,customer\_id int(10),address varchar(20),

-> FOREIGN KEY fk\_customer\_id(customer\_id)

-> REFERENCES customers(id)

-> );

fk\_customer\_id - - Foreign key name

customers - - Another table for the same database

**MYSQL Dump**

1. **Backup a Single MySQL Database**
   1. mysqldump -u root -p prakash > prakash.sql
      1. root - - Magento user name
      2. prakash - - Database name
      3. prakash.sql - - Backup file name
2. **Backup Multiple MySQL Databases**
   1. mysqldump -u root -p - -databases prakash magento231 > prakash.sql
3. **Backup All MySQL Databases**
   1. mysqldump -u root -p - -all-databases > prakash.sql
4. **Backup MySQL Database Structure Only**
   1. mysqldump -u root -p - - no-data prakash > prakash\_structure.sql
5. **Backup MySQL Database Data Only**
   1. mysqldump -u root -p - -no-create-db - -no-create-info ram > ram\_data.sql
6. **Backup Single Table of Database**
   1. mysqldump -u root -p dbname tablename > ram\_posts.sql
7. **Backup Multiple Tables of Database**
   1. mysqldump -u root -p dbname tablename1 tablename2 > ram\_posts.sql
8. **Restore MySQL Database**
   1. mysql -u magento -p prakash\_ram < singletable.sql

**PHP - Hypertext Preprocessor**

* Php is a widely-used, open-source scripting language
* Php scripts are executed on the server
* Php is free to download and use
* A powerful tool for making dynamic and interactive web pages

**What are PHP files**

* Php file are contain text,HTML,javascript,and PHP code
* Php codes are executed on the server, and the result is returned to the browser as plain HTML

**What can PHP do**

* Php can generate the dynamic page content
* Php can create,open,read,write,delete,and close files on the server
* Php can add, delete, and modify data in your database
* Php can use to control user-access
* Php can encrypt data

**Why PHP**

* Php runs on various platforms (Windows, Linux, UNIX)
* Php is compatible with almost all sever used today (Apache, IIS)

**Php Variables**

* Variables mean to store data in runtime.

**If else**

* Condition true or false, greater than or less than
* if is the condition is true then after checking the next condition but false print the else value

**Else if**

* More than one condition is used on the elseif

**For loop**

* First initialize to create the variable, next used on the different conditions, further increment to addition or subtraction.
  + Syntex

for (initialize, condition , increment){

execute code

}

**While loop**

* While loop is the first initialize then the condition is true then after increment but the condition is false then stop the looping
* sort form of while loop is the for loop

**Do while loop**

* First, do the codes then after checking the condition(true or false)

**Switch case**

* It only executes a single block of code depending on the value of the condition.
* The condition is equal then to directly calling the case
* Switch case is best is compare to ifelse
* The reason to switch the case is to multiple the cases on to directly on the condition but ifelse is further to check every condition and time is highly needed.
  + Syntex

<?php

switch(condition){

case value(n):

block of code to be executed

break;

?>

**Note:**

' ' - - - String

'' '' - - - Variable or string

exit(some message) - - - For medley stop the program

die(some message)

// - - Ignore one line of program

/\* \*/ - - Igone multi lines

ini\_set("display\_errors", "1"); - - Using this command is to check the errors in

error\_reporting(E\_ALL); - - Your current browser.

include 'string1.php' - - Current file to include on another files

string - - A group of character example "film"

character - - Single later

Array\_unique - - Remove duplicate strings

Var\_dump - - the array to view its content

**Arrays**

* A PHP array is a variable that stores more than one piece of related data in a single variable. (group of value stored on the single variable )
* Print\_r PHP function is used to return an array in a human-readable form

**Indexed array**

* Numeric arrays use numbers as access keys.
* Assume default on keys

**Associative array**

* Associative arrays differ from numeric arrays in the sense that associative arrays use descriptive names for id keys.

**Multidimensional array**

* singe variable is used on multi arrays

**Form Methods**

1. **POST**
   1. post method is to secure compare to get method and also post method is used on submitting the large form data values, can't show the data in URL
2. **GET**
   1. get method is using on one form data values only
   2. this method shows the form values in the URL

**INCLUDE\_ONCE AND REQURE\_ONCE**

* if both include\_once and requre\_once using to split the files when the file is more logical than confused.
* include\_once can't show the error of the file
* requre\_once is if the error is found and then shown on your web screen of the private's file

**HTML**

* Hypertext markup language
* HTML is the standard markup language for creating Web pages and web applications.

**Example explanation**

1. <!DOCTYPE html> - - Declaration defines this document to be HTML5
2. <html> - - Element is the root element of an HTML page
3. <head> - - Element contains meta-information about the document
4. <title> - - Element specifies a title for the document
5. <body> - - Element contains the visible page content
6. <h1> - - Element defines a large heading
7. <p> - - Element defines a paragraph

**HTML Basic**

1. HTML links are defined with the <a> tag:
   1. href - - - Hyper reference
2. HTML images are defined with the <img> tag.
   1. The source file (src), alternative text (alt), width, and height are provided as attributes:
3. HTML buttons are defined with the <button> tag:
4. HTML lists are defined with the <ul> (unordered/bullet list) or the <ol> (ordered/numbered list) tag, followed by <li> tags (list items):

**FILEZILLA**

* This tutorial explains how to use FileZilla to upload your website. FileZilla is a powerful and free software for transferring files over the Internet. It is a very popular FTP client and is used by webmasters from all over the world. Here you can download FileZilla software.
* With SiteGround you get unlimited FTP access and unlimited FTP accounts. FileZilla is fully compatible with our hosting services. If you would like to change your host, our professionals will assist you with your website files and database transfer.
* These are some features of the FileZilla Server
  + FTP and FTP over TLS (FTPS)
  + IPv6 support
  + Speed limits
  + Large file support >4GB
  + Remote administration
  + Permissions system with users and groups
  + IP filters

**Git**

* Git is a Distributed Version Control tool that supports distributed non-linear workflows by providing data assurance for developing quality software.
* Features Of Git
  + Free and open source
  + Speed
  + Scalable
  + Reliable
  + Secure SHA1 (Secure Hash Function)
  + Economical
  + Supports non-linear development
  + Easy Branching
  + Distributed development
  + Compatibility with existing systems or protocol

**AJAX**

* AJAX stands for Asynchronous JavaScript and XML
* AJAX is a developer's dream because you can:
  + Update a web page without reloading the page
  + Request data from a server - after the page has loaded
  + Receive data from a server - after the page has loaded
  + Send data to a server - in the background
* AJAX is a new technique for creating better, faster, and more interactive web applications with the help of XML, HTML, CSS, and JavaScript.
* AJAX is based on the following open standards −
  + Browser-based presentation using HTML and Cascading Style Sheets (CSS).
  + Data is stored in XML format and fetched from the server.
  + Behind-the-scenes data fetches using XMLHttpRequest objects in the browser.
  + JavaScript to make everything happen.

**SSH**

* One essential tool to master as a system administrator is SSH.

SSH, or Secure Shell, is a protocol used to securely log onto remote systems. It is the most common way to access remote Linux and Unix-like servers.

In this guide, we will discuss how to use SSH to connect to a remote system.

**SCP**

* SCP (secure copy) command in Linux system is used to copy file(s) between servers in a secure way. The SCP command or secure copy allows the secure transferring of files between the local host and the remote host or between two remote hosts. It uses the same authentication and security as it is used in the Secure Shell (SSH) protocol. SCP is known for its simplicity, security, and pre-installed availability.

**WGET**

* Wget command is a useful GNU command line utility used to download files from the internet. This utility can download files from servers using popular protocols like HTTP, HTTPS, and FTP. It runs in the background (non-interactive) and hence can be used in scripts and cron jobs. GNU Wget was written by Hrvoje Nikšić and currently, it is under Tim Rühsen, Darshit Shah, and Giuseppe Scrivano.
* Downloading a file with a specified filename​
  + To specify a different filename the -O option (uppercase O) is used.
  + wget <URL> -O <file\_name>
* ​Silent download
  + To make a silent download, “–q” option is used as follows –
  + wget –q <URL>
* ​Resuming the partially downloaded file
  + In order to resume the partially downloaded file, the “–c” option is used as follows –
  + wget –c <URL>
* ​Downloading files in the background
  + With “–b” option, wget start the downloading in the background and start writing -​
  + wget –b <URL>
* ​Multiple downloads
  + For this “-i” option followed by a file containing multiple URLs (one URL per line) can be used. wget will go through each URL and download them all. How simple is that? :-).​
  + wget –i <file\_name> <URL>