2.3: Hardware Components

Carnival cruise line wish a management system which keep records of customers, cruise, order that accessible from anywhere over the internet. Therefore, carnival cruise line management system is implemented and deploy as web application, which enable customer to access their service as well as make order from any location and at any time. Though, it requires infrastructure-based resources in term of hardware components. There are some options for owner of carnival cruise line to implement and deploy a system. Owner may make initial investment on hardware infrastructure in premises or may take rental hardware components from cloud vendors such as Amazon, Azure, Google etc. In both the scenario, owner needs some sort of hardware to run their application. Hardware components specification is given below.

• Intel Core 2 Duo Processor 2.4 GHZ

• 512 MB RAM (Random Access Memory)

• 20 GB Hard Disk (Secondary Storage)

• Server Computers or Workstations

• UPS (Un-interrupted Power Supply)

• Backup Storage

Intel Core 2 Duo Processor 2.4 GHZ – Minimum intel core 2 duo processor is required to implement carnival cruise line management system. It offers 2.4 GHz cpu speed, 2400 MHz frequency, 1066 MHz Bus speed and 2 cores of processor.

512 MB RAM (Random Access Memory) - To store all implementation process of system, at-least 512 MB RAM is required. RAM allows storing processes of system which are concurrently executed by the processor for the application development.

20 GB Hard Disk (Secondary Storage) - During the development or implementation of an application, several files are created that require to store persistently. For this, at-least 20 GB hard disk is required as hardware components.

Server Computers or workstations- Carnival cruise line management system is served as web application. Therefore, after the development of system, it is deployed on high computing sever computers or workstations that make application available on internet. It is very crucial components, because performance, reliability and availability of an application depend on it.

UPS (Un-interrupted Power Supply) - To make an application always available, require un-interruptible service of system regardless of power failure. If power failure or cut off then UPS is maintained as backup.

Backup Storage- In case of any failure like server crash or hardware malfunction, we require backup plan of application. For, this we require backup storage and recovery tools so we can recover an application from backup copy. Backup storage leads extra cost for cruise line owner but it assures application reliability in case of any fault.

In above discussion, some hardware components are used to implements application and their modules. Rest hardware components used for deployment and backup purpose. After the hardware components requirement, we require sort of software which runs on this hardware for system development. Further, minimum software components require for the development, run and accessing of an application are discusses here.

2.4 Software Components

As it is known, carnival cruise line management system is implements and deploy as web-based system. Therefore, to design web interface i.e., web layouts, database for the management system require web development technology, languages, web servers and operating system. Following software components require implementing and deploying desired management system.

• Windows Operating System 64 bit

• HTML, CSS, Java Script

• JQuery

• MySQL5.5

• XAMPP Web Server

• Web Browser (For example Mozilla, Google Chrome, IE8, OPERA etc.)

Windows Operating System 64 bit- For the implementation of the system, hardware components are accessed through windows operating system 64-bit architecture interface. It helps developers to develop system components using web application languages. Windows operating system 64 bit is minimum requirement as software components.

HTML, CSS, Java Script- To design layout of web pages and implement events and activities, HTML language is used. HTML is Hypertext Markup Language that allows designing of web contents. CSS is Cascading Stylesheet enable attractive and customized layout of web pages. Java Script is a scripting language which allows dynamic contents and input handling at the web servers. With the help HTML, CSS and java script developers able to implement dynamic, responsive and customized web application.

MySQL5.5 – Apart from the design and development of web interface. To keep records of all stakeholders and activities of the system, a database is to require implementing using MySQL5.5. MySQL5.5 is database software that enable to define, create, storing and manipulating database.

JQuery – JQuery is query language which is used to execute SQLquery at back end side i.e. database of application. JQuery allow writing of different type of queries to store data in database and retrieve required records from database. It also allows manipulation and deletions of records using Data Manipulation Language (DML) query.

XAMPP Web Server- To test deployment of web application, require web server configuration on a server machine which enable remote access of carnival cruise line management system. Any server instance may be configuring for this purpose but for carnival cruise line management application, XAMPP server is configured.

Web Browser (For example Mozilla, Google Chrome, IE8, OPERA etc.)- At the client or customer side, to access the carnival cruise line management system require client program. Therefore, client may use any web browser such as Mozilla, Google Chrome, IE8, OPERA etc. With the help of web browsers customer or internal staff may access the functionality of the system.

The motive of the web-based development is to access carnival cruise line management system from any place and at any device for example desktop computer, laptop, palm top, mobile phone and other device. Development of system is ensuring that if system is accessed from mobile phone or palm top then appearance should be uniform. Even it is accessible and functional on the devices, web browsers and operating system.

Further, functional view of entire system using component diagram and user interface design is illustrates and discussed.