Assignment - 3

(5) What is the role of J2EE in distributed computing?

→ A distributed system is a collection of individual system that coordinate and communicate with each other by sharing information over the network. It works on client/server or Peer to Peer model.

- A distributed application uses the layered approach to software development using middleware.
- Middleware provides a common set of services for applications & has to work in heterogeneous environment.
- Here the use of J2EE helps the developers to delvelop platform independent tools.

2) explain the use of XML in distributed computing.

→ XML is the extensible Markup language to come together & make the information base. XML Provides the basis for a wide variety language. eg - include Mathematical Markup language (Math XML), Electronic Business XML (ebXML), and Voice Markup language (VXML) XML consist of both Markup and content in the document. this flexible representation of data allows to easily send and receive data, and transforms data from one format to another. some specilized uses of XML are the Java Speech Markup language and the synchronized multimedia Integration language.

Each XML language has its own grammer. and the specific set of rules governing the content & structure of documents written in the language.

3) What is service oriented Architecture.

→ the concept of service oriented Architecture (SoA) Provides a cost effective solution.

- SoA is the concept of service oriented Architecture defined by sun. web services have taken the concept of service delivered over the web using technologies such as XML, web services Description language (WSDL), simple object Access Protocol (SoAP), and universal Description, Discovery, and Integration (UDDI).
- SoA is Integration and Architecture framework

- It also enables the software as a service concept.
- SoA is the standardlized of software Project design where services are Provided across different components using communication Protocol using internet.
- SoA and Web-services are two different thin but web services are the preferred standar based way to realize SoA.

- Service oriented Architecture (SoA) in an evolution of distributed computing based on the reques reply design for synchronous & asynchro applications. An application's business logic or individual functions are modularized & represented as services for client applications.
- The important characteristics of web service that they are loosly coupled nature help to make the service interface indepen of the implementation.

Q) explain key characteristics of SoA
i) SoA services are XML and Web services description Language (WSDL) as the standard to describe the services. There are Platform independent standards and so they help to distribute the application over web.
ii) SoA services communicate with messages formally defined via XML also called XSD. communication among clients and service providers or services is always in the heterogeneous environments.
iii) SoA services are maintained in the enterprise by a registry that acts as a directory listing. Application can look up the services in the registry & invoke the service, universal description, Definition and Integration (UDDI) is the standard used for service Registry.
iv) Each SoA service has a quality of service (QoS) associated with it. Its important elements are security requirements such as authentication & authorization reliable Messaging, & Policies regarding who can invoke services.
v) With SoA the hardware, operating system & software can be used as a service.

5) What is stateless & statfull services explain with example.

→ Stateless -

A stateless architecture or application is a type of internet Protocol where the state of the erenced in subsequent transac Each request sent between the sender & receiver can be interpreted & does not need either request for its execution This is a Protocol where a client & seaver reaues & response are made in a current state In addition the status of the current session is not retained or carried over the next transaction. stateless applications manage short term requests using print secures & a content delivery network. eg- HTTP, DNS.

Statfull - A stateful architecture or application describes a structure that allows users to store, record and return to already establish information and Process over the internet. It entails transactions that are performed using Past transactions as a reference Point. In stateful applications, the current transaction can be affected by the previous ones.

(6) explain any one web technology in details use for implementing web services.

→ HTTP- The de facto standard for the internet.
XML - The de facto standard for data message interpretation.
SOAP - choosen standard for XML Messaging

characteristics -
- It supports loose coupling everywhere in the Project.
- SOA supports interoperability.
- It increases the quality of service.
- It supports vendor diversity.
- It Promotes discovery & federation.
- It is location - transparent.
- It is still maturing & achievable area.

(7) What are RPC.

→ Remote Procedure call is a software communication protocol that one Program can use to request a service from a Program located in another computer on a network without having to understand the network's details.
- RPC is used to call other processes on the remote systems like a local system.

8) What are the features of SOAP-

→ - Protocol independence
- language independence
- Platform and Operating system independence.