Inter Server Service Allocation Model using SOA

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Abstract: *The aim of the project is to provide various services from different servers based on the client request, when the server is busy. If one server is busy then the client request is forwarded to the adjacent server. The adjacent server processes the client request and it sends response to the client. This approach can be used while more clients are accessing the same web server at the same time and the web server struck by responding more clients. In that time, the adjacent server takes care of the client side requests and it provides corresponding services to those clients.*

Keywords: web server, client, services, and adjacent server.

1. Introduction

A web service is a software function provided at a network address over the web or the cloud, it is a service in the concept of utility computing. It has an interface described in a machine process able format specifically WSDL (Web Service Description Language). Other systems interact with the Web service in a manner prescribed by its description using SOAP (Simple Object Access Protocol) messages, typically conveyed using HTTP with an XML (eXtensible Markup Language) serialization in conjunction with other Web related standards. The two major classes of web services are REST-compliant Web services and arbitrary Web services. Web server can refer to either the hardware (the computer) or the software (the computer application) that helps to deliver web content that can be accessed through the Internet. The primary function of a web server is to deliver web pages on the request of clients using the Hypertext Transfer Protocol (HTTP). Service Oriented Architecture or SOA is a new architecture for the development of loosely coupled distributed applications.

A client-server application is a distributed system consisting of both client and server software. The client process always initiates a connection to the server, while the server process always waits for requests from any client. When both the client process and server process are running on the same computer, this is called a single seat setup. SOA architecture enables seamless Enterprise Information Integration. The Characteristics of Service Oriented Architecture are SOA services communicate with messages by using the XML Schema.

2. Related works

Different approaches have been used for enabling dynamic invocation of web service methods from mobile devices. Recently an application for Peer-to-Peer (P2P) web services is recommended in [1] for use in ad hoc networks. A characteristic between two different P2P realizations is made. One in a stand-alone node acts as a broker and another one where no centralized service broker is available.

In [2] presented a framework of Organic Grid, a radical departure from current approaches and is examined after the way complex biological systems organize themselves. The

other web service techniques used in Academic and corporate communities have been dedicating effort to World Wide Web caching. When correctly deployed, Web caching systems can lead to important bandwidth savings, server load balancing, perceived network latency reduction, and higher content availability in [3].
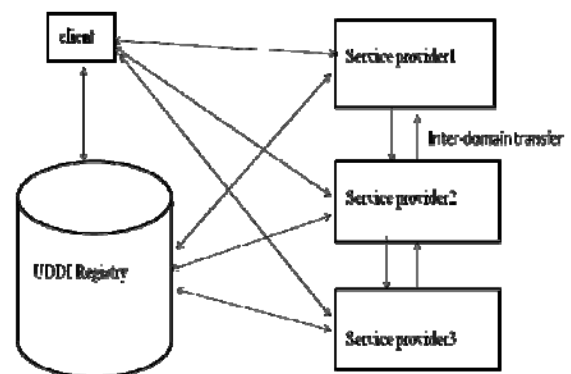
3. Proposed System Architecture

Figure 1: Proposed System Architecture

The Proposed system architecture incorporates a process of service decision making system for interserver service allocation based on the client requests.When one or more clients accessing the same webserver at the same time and the web server struck by responding more clients.In that time,the adjacent server takes care of the client side requests and it provides corressponding services to those clients.This proposed decision making system can significantly improve the service process.

It consists of mainly three processes.client process,server process,Query transferring process.In client process,if one client is requesting the web server for processing the data and in that same time the next client is requesting the same web server for processing data.So the web server struck for processing data.The web server forwards the second client request to the adjacent server and it sends response to that client.The performing of requests and responses known as Query transferring process.
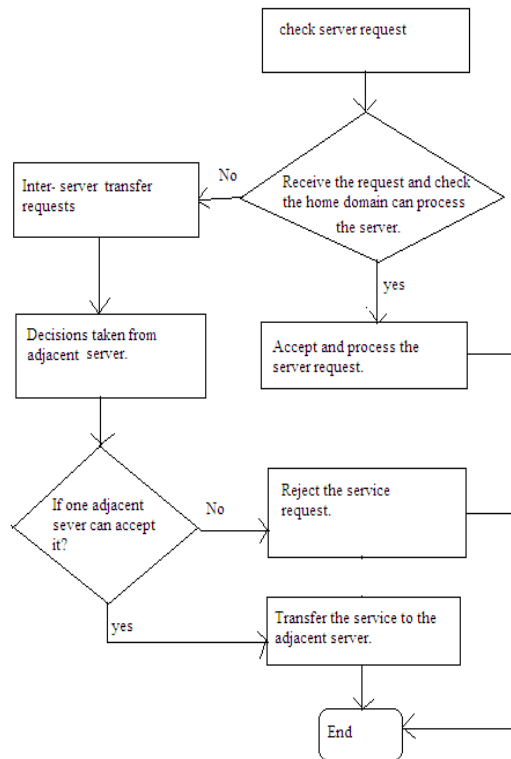
Figure 2: Flowchart of Inter server service allocation

3.1 Registration Process

In this process after the webservice starts by using IIS(Internet Information Services)server,the website can be accessed.After the admin login into the website,he can do the functions of upload,edit,delete the records of Temples,Colleges and Hospital details.The user can be registered only after the admin allows it.Then after the user registers into it he can search for any details of Temples,Colleges and Hospitals.

3.2 Server process

In this process the server can be processed only when the client requesting the server and the server responds to the client.At the same time if another client requesting the server and if the server is busy in processing first client,it forwards the new client request to the adjacent server.And the adjacent server responds to that client.

3.3 Client process

In this process after client registered his details,by using his username and password he can search for any details of Temples,Colleges and Hospitals by giving its corresponding Id and the details can be retrieved from the database.

3.4 Query Transferring process

In this process after the client request the details to the server and the server responds to the client.At the same time when another client is requesting the same server and the server is busy in processing in first client.So it transfer the request to the adjacent server and the adjacent process the new client request.

4. Simulation Test Bed

The proposed system implemented in .Net Framework.ASP.Net is used for Front end design.The features of ASP.Net are building real world Web applications dramatically easier Displaying data, validating user input, and uploading files are all easy. ASP.NET now supports more than 25 .NET languages (built-in support for VB.NET, C#, and JScript.NET).It was rich class Framework with Improved Performance and Scalability.

ASP.NET uses more users with the same hardware. ASP.NET is much faster than classic ASP. Here the language used is C#. C# is a simple, modern, object-oriented, and type-safe programming language. C# is an object-oriented language, but C# further includes support for *component-oriented* programming. C# provides automatic garbage collection, whereas traditional C and C++ do not. *Garbage collection* automatically reclaims memory occupied by unused objects; *exception handling* provides a structured and extensible approach to error detection and recovery and the type-safe design of the language makes it impossible to read from uninitialized variables, to index arrays beyond their bounds, or to perform unchecked type casts. C# was created by Microsoft and also standardized by the European Computer Manufacturers Association (ECMA).

For maintain information SQL database is used.The features of SQL Server are as follows. In Client Server technology, a server is a program which does all the jobs that is requested by the client and Client is a program which depends on the Server to accomplish its task. Client is mainly used to interact with Users and most Server software doesn't have direct interaction with Users.

A DBMS should have the following functionality – Interaction with users (developers), Managing Data. Since these two functionalities are entirely different modern DBMS is divided into two or more parts. Almost all current DBMS has the following module – Server and one or more clients. A server module is program which manages the data and handles requests from the client applications. It interprets the SQL queries and returns results back to the clients. A client program is a program which sends SQL commands to server and gets the result. Client program does not know the detailed underground structure of the server. SQL Server uses Local or Network IPC (Inter process communication) to communicate with the clients.

IIS(Internet Information service)web server is used for structured web component. It is an enterprise-level Web server that is included with Windows. It also included with several versions of windows like Windows server 2003, Windows Vista, Mac OS X or Linux. It enables a computer to serve documents.
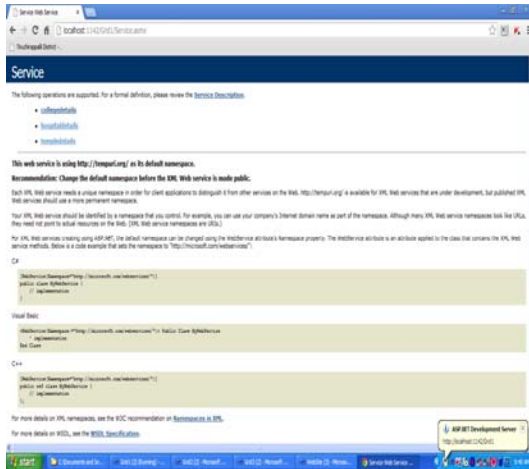
Sample screen shots are given below.
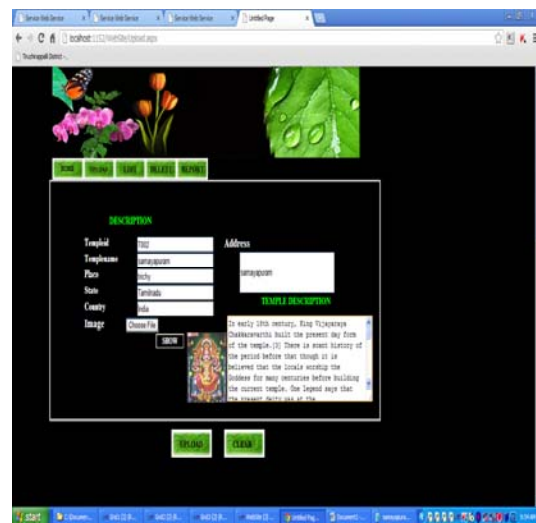

Figure 3: Service is started.

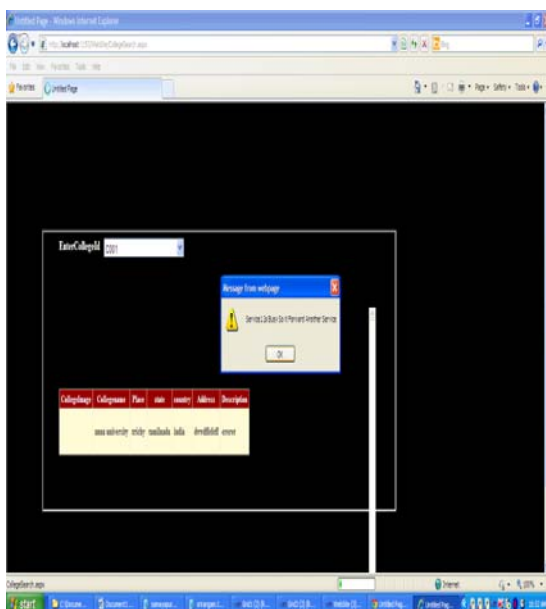**Figure 4:** Firstclient details is processed.

Figure 5: Another newclient details is processed

5. Conclusion

In this paper interserver service allocation is processed between clients.Thus when one server is busy the client request is forwarded to the adjacent server. The adjacent server processes the client request and it sends response to the client. So that two or more clients can access the same webservice at the same time. The optimal decision is made such that the service rejections are minimized and service processing are maximized.

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