MES COLLEGE OF ENGINEERING, KUTTIPPURAM
DEPARTMENT OF COMPUTER APPLICATIONS
20MCA246 – MAIN PROJECT

PRO FORMA FOR THE APPROVAL OF THE FOURTH SEMESTER MAIN PROJECT

(Note: All entries of the pro forma for approval should be filled up with appropriate and complete information. Incomplete Pro forma of approval in any respect will be rejected.)

Main Project Proposal No : _____ *(Filled by the Department)*	Academic Year : 2021- 22 Year of Admission : 2020

1. Title of the Project : Middleware Based on Itec Cloud architecure.
2. Name of the Guide : Mr. Vasudevan T V
3. Student Details (in BLOCK LETTERS)

Name	Register Number	Signature
AMNA	MES20MCA-2005	

Date: 16-04-2022

Approval Status : Approved / Not Approved

Signature of Committee Members

Comments of the Guide Dated Signature

Initial Submission :

First Review :

Second Review :

Comments of the Project Coordinator Dated Signature

Initial Submission:

First Review

Second Review

Final Comments :

Dated Signature of HOD

Introduction: This project is to develop a combined web and application server, which is capable of accepting request from clients and executing PL/SQL application programs confirming to Itec Cloud architecure.

Objectives: The objective is to enable rapid cloud application by providing a protocol which is concise and comprehensive. This should cater for easy development of commercial applications which can be implemented in cloud. The combined web and application server is the central piece of cloud architecture.

Problem Definition: Demand for cloud application is very high. Applications written using HTML are providing static pages with which field validation can be done only on submission of page. To overcome this, Ajax was introduced to support dynamic pages. For validation, scripting languages are used in the backend and lot of independent files have to be written and maintained.

Although development systems like Microsoft's ASP and other similar systems based application servers are on the market, they are very resource intensive and require lot of programming.

Most of the applications do not provide facilities which are easier to use and hence reports creation is cumbersome. Users are compelled to use other tools like crystal reports to generate reports.

To overcome this, Itec cloud architecture is introduced. 100 per cent application code is written using PL/SQL which is running inside a database engine. Since the data and code are in one engine, data access is very fast.

It consists of a command set, which are sent from the database engine to the browser through the middleware, which are interpreted by a JavaScript program loaded on the Client browser. Elaborate commands are provided for creating reports.

Report coding is made easier by providing page and layout definition. After defining, layout data can be sent without any checking on the backend. Formula can be send to the browser, to generate aggregates like total, average etc. Multiple layouts can be defined one report. Grouping variables can be defined for each.

Basic functionalities: Since the web server and application server is combined, there is no synchronisation problem. Tracking and identifying returning customers are smooth by using tokens which are prepended to each validation requests using GET method. POST method is not used. Backend business code, decides whether it is a submission or only validation. This enables take any validation request as submission depending different scenario.

Since it is written in java and java VM is available anywhere, it is not OS restricted like Microsoft IIS. Since multiple treads are used for PL/SQL function execution calls, it is multitasking. Java can run multiple threads unlike python where it is restricted by Global Interpreter. One problem on simultaneous execution is synchronising shared variables. Shared variables are not used and instead, message passing through queues, one for write and another for reading, are used.

Tools / Platform, Hardware and Software Requirements: JavaScript programs can be written using any editor. Testing can be done using any browser. Modern browsers have very good debugging facilities. Since JavaScript is not a typed language, side effects of using dynamic variables exists. However, the debugging facility is very powerful and hence the side effects can be easily detected.

Hardware Requirement: Pc with dual core Intel microprocessor 2GB memory and 500GB hard disk 14 inch monitor.

Database: Database used is oracle 11g xe.