
FreeForums

Project Plan

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Index

Index	1
System Description	1
System Charter	3
Background Research	4
Project Objectives:	4
Current System Summary:	5
System Deficiencies:	5
News System Constraints and Assumptions:	5
Development Plan	6
Project TimeLine	10

System Description

Project Title:	FreeForums
Project Manager:	Devraj Mukherjee
Clients:	Barney Dalgarno Edward Stow
Originator:	Edward Stow
Project Goal:	To investigate and evaluate emerging technologies, in particular Java servlets, J2EE, and XML
Date:	22 nd February 2001
Business Deadline:	13 th November 2001
Assumptions:	None
Budget:	Not defined
Moral, Ethical and Legal issues:	None.

System Charter

FreeForums is an attempt to develop a forum system based upon function provided by Charles Sturt University Forums.

The software will incorporate the base features in the CSU Forums. These features include:

1. A Web interface to central server that allows many users to view, post and reply to messages, on many forums.
2. A separate client program that allows a user to connect to the server and access all new and changed messages. The client provides the viewing, posting and reply functions. The client will feature a traditional GUI interface.

Other technical features that will be investigated are:

1. Complete separation of the Model and Database functions, allowing the use of Relational DB, or OODBMS or other persistence mechanisms.
2. Investigation of XML as the interchange format between the client and server software.
3. Investigation of XML based protocols like SOAP

Particular technologies to be investigated are:

1. Server side Java Technologies like Enterprise JavaBeans, Java Servlets, Java Server Pages and Java 2 Enterprise Edition Server for Solaris, Linux and Windows 2000.
2. The Informix Cloudscape database server.
3. Implementation of the SOAP protocol for exchange information and making Remote Procedure calls.
4. Java APIs for XML parsing like DOM, JDOM and SAX.
5. Windows Application technologies like ActiveX components for XML parsing in Visual Basic, DLLs.

Alternative component architectures that are to be discussed:

These technologies will only be discussed in report as an alternative solution to the product being developed; no practical experimentation will be carried out using this technologies.

1. DCOM/ActiveX
2. CORBA
3. RMI

Background Research

Forums are electronic discussion boards, which allow electronic asynchronous communications. Forums have features like threading, attaching files with messages. Most companies and large organizations use such systems, to provide discussion areas for their products, and services and is traditionally developed in house.

Project Objectives:

To investigate and evaluate emerging technologies, in particular Java Servlets, J2EE, and XML

Deliverables to be produced:

The following is a list of all the deliverables that are to be produced during the course of this project:

Software products:

1. FreeForums Enterprise JavaBeans Server components written using Java 2
2. FreeForums web client written using Java Servlets/JSP technology
3. FreeForums desktop GUI client written in Visual Basic 6 for the Windows Family Operating Environment.

Documents:

1. Project Plan – this document, which defines the initial project plan and the expected time lines.
2. Requirements Definition (due 1st June 2001): will provide a detailed look into the analysis of the product and produce a document of the initial use cases, class diagrams, interaction diagrams, and relational database table structures. This document will reflect the requirements specified by the user and will also outline the progress of the project on that date.
3. System development documentation (due 13th November 2001):
 - a. Information about the development process, design documentation.
 - b. Class diagrams
 - c. Interaction diagrams
 - d. RDBMS table structures.
 - e. An user manual for the developed system
 - f. Reviews of alternative technologies
4. Technical documentation (due 13th November):

- a. Product Source Code
 - b. Product implementation guide
 - c. Discussion of technologies used
5. Project Evaluation documentation (due 13th November 2001)

Current System Summary:

The CSU Forums currently provides these following functions:

1. Multi-user and Multi-forum facilities
2. World Wide Web interface to listing, viewing, posting message.
3. Sorting and searching of message in the web based interface.
4. Allows a file to be attached with messages.

System Deficiencies:

The CSU Forums currently lacks:

A Desktop Client – Web clients provide you the flexibility of accessing the forums from anywhere in the world, but does not provide some of the functionality that a desktop application can provide. Thus for regular use of the forum system a desktop client seems useful and FreeForums will address that problem.

News System Constraints and Assumptions:

Technical Assumptions:

1. Available access to a Java 2 Enterprise Edition compatible platform to run this product.
2. Access to hardware to support a product written using Java 2 Enterprise Edition
3. A RDBMS server already set-up and ready to run with the Java 2 Enterprise Platform.

Technical Constraints:

The Desktop client will only be available for the Microsoft Windows Family of operating systems.

Development Plan

The development plan of this product has been broken up into two Groups; tasks in Group one are the essential tasks, which must be completed. Group two tasks are the additional features that the FreeForums project intends to implement. Attached with this document is a Time Line sheet which outlines estimations of time for each task, it also outlines when each task is due to be delivered.

Group 1 Use cases:

USE CASE:	SET UP A NEW FORUM
GOAL:	MAKE A NEW FORUM READY FOR USE.
ACTORS:	FORUM ADMINISTRATORS

USE CASE:	ADD A NEW FORUM USER
GOAL:	ADDS A NEW FORUMS USER
ACTORS:	FORUM ADMINISTRATORS

USE CASE:	SUBSCRIBE OR UN-SUBSCRIBE A USER FROM A FORUM
GOAL:	SUBSCRIBES OR UN-SUBSCRIBES A USER FROM A FORUM
ACTORS:	FORUM ADMINISTRATORS

USE CASE:	POST A NEW MESSAGE
GOAL:	TO POST A NEW MESSAGE TO A FORUM
ACTORS:	FORUM USERS

The system will be developed based upon the Group 1 use cases. Each increment in the development will add another technology component to the system, so that “a big bang” implementation is avoided.

Group 1 Task list:

1. Servlets and domain classes development – using Java Servlets, & serialized files. No Enterprise JavaBeans are to be used in the development at this stage.
 - a. Deliverables:
 - i. Web based user interface
 - ii. Servlets Code
 - iii. Class Diagram
 - iv. Interaction Diagrams for Important interactions.
 - v. Project diary notes
2. Data Persistence – this step brings in the development of an Enterprise JavaBeans based development of the forum system.
 - a. Deliverables:
 - i. RDBMS – design documentation and table structures.

- ii. Entity Beans Cde
 - iii. Session Beans Code
 - iv. Servlets/JSP Code
 - v. Architecture description
 - vi. Project Diary
- 3. Multi-Forums – the above is then extend to produce a multi-forum system using Java 2 Enterprise Edition.
 - a. Deliverables:
 - i. Entity Beans Code
 - ii. Session Beans Code
 - iii. Servlets/JSP Code
 - iv. Changes in Architecture design.
 - v. Project Diary
- 4. Desktop GUI Client: this step concentrates in developing the prototype of the Desktop GUI client. The client will only have a fully function interface with a dummy data and will have no communication methods for communicating with the server software.
 - a. Deliverables:
 - i. Desktop client software – written in Visual Basic 6, without any communication with the server software.
 - ii. Project Diary
- 5. XML on client: we then define the data that will be transferred between the server and the client, based on which we define out XML DTD(s) which is then implemented in the GUI Desktop client.
 - a. Deliverables:
 - i. Updated version of the GUI client demonstrating the ability to process XML data locally.
 - ii. XML Document Type Definitions
 - iii. Project Diary
- 6. XML handling into the server side system: this step involves the integration of XML onto the server side system, which allows the server to communicate with the client using XML data.
 - a. Deliverables:

- i. Code for updated server side components.
 - ii. Complete Architecture plan.
 - iii. Modified version of the Servlets/JSP with added layer of XML processing.
 - iv. Project Diary
- 7. XML on client with server: the above steps allow us to confirm that the XML data is being properly generated can be processed to the web-based interface. This step integrates the desktop client with the server side components to take XML data from the server and process it, instead of the dummy local XML data.
 - a. Deliverables:
 - i. Details on use of XML protocols like SOAP
 - ii. Updated version of the desktop client code.
 - iii. Project Diary

Group 2 Tasks:

Group 2 Use cases:

USE CASE:	MODIFY FORUM DETAILS
GOAL:	MODIFY THE DESCRIPTION DETAILS OF AN EXISTING FORUM
ACTORS:	FORUM ADMINISTRATORS

USE CASE:	REMOVE A FORUM
GOAL:	REMOVE A FORUM, RELATED MESSAGES AND USER SUBSCRIPTIONS
ACTORS:	FORUM ADMINISTRATORS

USE CASE:	MODIFY FORUM USER DETAILS
GOAL:	MODIFY A FORUM USER PROFILE
ACTORS:	FORUM USERS, FORUM ADMINISTRATORS

USE CASE:	REMOVE FORUM USERS
GOAL:	REMOVE EXISTING FORUM USERS FROM THE SYSTEM
ACTORS:	FORUM ADMINISTRATORS

USE CASE:	REMOVE A MESSAGE
GOAL:	TO REMOVE A POSTED MESSAGE FROM A FORUM
ACTORS:	FORUM ADMINISTRATORS

The system will be developed based upon the Group 2 use cases. Each increment in the development will add another technology component to the system, so that “a big bang” implementation is avoided.

- 1. Adding extra features to the Forum system: these features are considered secondary to the Group 1 features. The features have been listed in the use cases above.
 - a. Deliverables:

- i. Update RDBMS table structures.
- ii. Updated Source code for Enterprise JavaBeans
- iii. Updated Source code for Servlets/JSP
- iv. Updated GUI client source code.
- v. Updated design documents
- vi. Project Diary.