**1. Introduction**

This system is aimed towards bus pass applicants. It will allow passengers to apply for the pass directly on the website. By this system no intermediary is required to fill application for Pass system.

**1.1 Project Overview**

This system is meant to provide an extension for existing GSRTC website where the verifier is entering the details of passenger to issue a pass. Our system reduces the time of this process by making this process online.

**1.2 Project Deliverables**

The project will produce a running system that allows users to apply for Bus Pass online and as a result, will reduce the process time of generation of pass.

The following items will be produced:

* A Software Project Development Plan
* A Software Requirements Specification Document describing the functional and global requirements of the system as well as the models – Use case, E-R Diagram and a Data Dictionary.
* Source code for all subsystems of the online bus pass system.

**1.3 Evolution of the SPMP**

The software project management plan may get revised and new versions of the plan are announced and made available to all the project members.

**1.4 Reference Materials**

* [IEEE 828] IEEE Standard for Software Configuration Management Plans, ANSI/IEEE Std. 828-199.
* [IEEE 1058] IEEE Standard for Software Project Management ANSI/IEEEStd.1058.1-1987
* [IEEE 1074] IEEE Standard for Developing Software Life Cycle Processes, ANSI/IEEE Std. 1074-1991.

**2. Project Organization**

**2.1 Process Model**

The project uses an object-oriented design methodology and uses UML for the development of the software. The development process is organized in several activities. The members of the project are organized in teams. The individual approved documents produced by the teams are considered work products and are part of the software documentation.

**2.2 Organizational Interfaces**

Clients: The College

Project Managers: Sagar Ajmeri, Jay Bhadreshwara, Paras Dave and Jain Piyush

Tasks:

* Database
  + Store and replicate data on the server database
  + Respond to data queries from the verifier.
  + Allow synchronization of data on client and server computers on demand
  + Provide data upload capability for new data that needs to go to the main DB server
  + Provide verifier database services for the Authentication subsystem
* Authentication
  + Secure access to client and parts information across all viable media
  + Provide login and logout services to verifiers
  + Provide distinct level of security for administrators and verifiers.
  + Verify queries to prevent unauthorized access to data
* User Interface
  + Provide login and logout interface to the verifier.
  + Provide a status panel and information panel to the user.

**2.3 Project Responsibilities**

|  |  |  |
| --- | --- | --- |
| Project Managers | Responsible for project deliverables | Sagar Ajmeri,  Jay Bhadreshwara, Paras Dave and Jain Piyush |

**3. Managerial Process**

**3.1 Management Objectives and Priorities**

The philosophy of this system is to provide online registration form for the passengers to issue the bus pass. The verifier will be able to see the filled form with the use of the registration number given to the passenger at the registration time. The verifier may cancel request if the documents are not as the requirements.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Fixed | Constrained | Flexible |
| Cost |  |  | X |
| Schedule | X |  |  |
| Scope (functionality) |  | X |  |

**3.2 Assumptions, Dependencies, and Constraints**

1. Database
   1. Authentication provides database with a serializable user and group object, whose complete structure is stored on the database
   2. We depend on the stability of the hardware and software involved in the development of the system.
   3. We depend on the network subsystem to provide us with a connection between the client PCs and the server.
2. Authentication
   1. There will be a user class that has administration rights
   2. User List is maintained only on the server machine.
3. Network
   1. Database will handle all caching of information.
   2. All information, requests, events, and other messages will all be handled the same by the network
   3. Events that the network subsystem will publish include, but are not exclusive to, messageHasArrived, networkIsDown, and unspecifiedFailure
   4. Database or Authentication will handle encryption of all sensitive data before sending
4. User Interface
   1. We should design a user interface that is easily understood by everyone.
   2. External subsystems may have their own user interfaces.
   3. Computers used by end users might differ
   4. There are various groups of end users each of which has access to only certain types of data

**3.3 Risk Management**

**Risk**: Detection of Updates/Changes to remote data. Detection of changes to data may be quite expensive, and is an important part of the problem statement.

**Contingency:** If Detection of Changes cannot be done cheaply we will have to either settle for a slow system or redesign the system so that only a small portion of the data is replicated locally.

**Risk:** For some reason the network becomes unreliable or goes down during the transmission of data

.   
**Contingency:** We will cancel the request and notify both ends of the transmission that the network has gone down and the request has been cancelled. So that user will be notified and try again for form filling.

**Risk:** Our system may not be scalable.

**Contingency:** We are operating under the assumption that the user to server ratio will be about 500:1. If this changes dramatically, our system needs to be adaptable to handle other ratios.

**4. Technical Process**

**4.1 Methods, Tools, and Techniques**

Database – MySQL

Backend Script-PHP

Browser -Chrome, Firefox

Test Server-WAMPP

**4.2 Software Documentation**

Software Requirements Specification (SRS)

Software Design Description (SDD)

Software Test Plan

**4.3 Project Support Functions**

Document Collaboration: Google Docs

Online Team Collaboration: Google Groups

1. **Work Packages, Schedule, and Budget**

The overall project plan follows the spiral model. Two prototypes to be delivered:

* A Basic Graphical User Interface
* A functional prototype

Basic functionality to be implemented in version 1:

* Form Submission
* Login system
* Online Verification