**Institute Department System**

**Ankit Singh**

[**as55194n@pace.edu**](mailto:as55194n@pace.edu)

**Software Design Methodologies**

**SE-673**

**TABLE OF CONTENTS**

1. Introduction
   1. Purpose
   2. Scope

1.3 Overview

1. System Overview
   1. Assumptions
   2. Constraints
   3. System environments
   4. Design methodology
2. System Architecture
   1. Architectural Design
   2. Design Rationale
   3. Decomposition Description
3. Data design  
   4.1 Data Description
4. Component Design
5. **Human Interface Design**
   1. Overview of user Interface
   2. Screen Images
   3. Screen Objects and actions
   4. User Interface
6. Requirements matrix

### INTRODUCTION

## Purpose

The purpose of this document is to present a detailed description of the website for the University educational System, created for the Imaginary University. This project uses a web application concept to facilitate the departmental system in educational institutes.

## Scope

This document will explain about the system how it works This document gives a detailed description of the software architecture of the inventory system. It also displays some of the use cases that had transformed into sequential and activity diagrams. It uses the most reliable way of uniquely identifying students through website.

## Overview

Through this web application, we can keep a systematic record of student’s details, mark sheet, attendance and defaulters list. This project enables the easy way of maintaining class attendance with fewer efforts. This document is written according to the standards for Software Design Documentation explained in “IEEE Recommended Practice for Software Design Documentation”. A list of functions that are implemented in this version, and that are to be implemented in future version, and a list of tools and environment used in the entire project are mentioned in this document.

### 

### SYSTEM OVERVIEW

### 2.1. Assumptions

### The user of the website is aware of basic operations of a computer and web pages. The user also understands the standard terms used for operation.

### 2.2. Constraints

### The system is built accessible only through university’s website. The system is implemented using Java and JSP technologies.

### 2.3. System environment

### The website is designed to work on all operating systems. The system is accessible through any laptop and desktop, that is connected to the IU of a server. It is accessible at all times.

### 2.4. Design methodology

### The system is designed with flexibility for further development and/or modification.

### SYSTEM ARCHITECTURE

## Architectural Design

The block diagram below shows the principal parts of the system and their interactions

A close up of text on a white background

Description automatically generated

**Figure. Block diagram**

## Design Key Features

## Students can access their data online using the website

## Faculty can also use this website for multiple purposes

## Students and faculty can raise issues

## The website can be used for campus security and for many more other features can be added in the website in near future.

* 1. **Decomposition Description**

Users with appropriate permission” in the diagram refers to the users who are given exemptions or/and users of a particular level.

The context diagram shows the main actors interacting with the system

A picture containing text

Description automatically generated

**Figure: - Context diagram**

### DATA DESIGN

## Data Description

MySQL database and JDBC to communicate with the database that is installed locally on the server.

### COMPONENT DESIGN

**Login**

## A close up of a map Description automatically generated

## Figure: - Sequence Diagram for Login

## Provide biometric characteristics

## A close up of a logo Description automatically generated

## Figure: - Activity diagram for Provide biometric characteristics

## A screenshot of a cell phone Description automatically generated

## Figure: - Sequence diagram for Provide biometric characteristics

## A screenshot of a cell phone Description automatically generated

## Figure: - Sequence Diagram for select language

## 

## A screenshot of a cell phone Description automatically generated

## Figure: - Activity diagram for select language

### HUMAN INTERFACE DESIGN

## Overview of User Interface

UI is designed according to UI design principles.

**The structure principle:** UI is organized in such a way that related things are combined together, and unrelated things are separated.

**The simplicity principle**: It is easy to follow the provided interface. In the case of mistake, system displays error message.

**The visibility principle:** All system’s functions are available through UI. It does not overwhelm users with too many alternatives.

**The feedback principle:** Through the system of messages, the design keeps users informed of actions, errors, or exceptions.

**The reuse principle:** In design, same names were used to perform the same operations with different objects in order to reduce ambiguity.

## Screen Images

## A screenshot of a social media post Description automatically generated

## 

## Figure: - A tree of webpage

**Description**

**“Welcome”** page has descriptive characters; it contains a list of main system’s functionality and contact information. After login “Welcome” page changes and guides user on how to work with system.

**“Main”** page is constantly present on the left side of the screen and contains menu, which covers main functionalities of the system. Page “Asset” has its own menu on the top of the page, which contains all required operations that could be performed with assets.

Page “**License**” has its own menu on the top of the page, which contains all required operations that could be performed with licenses. Page “Location” has its own menu on the top of the page, which contains all required operations that could be performed with locations.

Page “**Person**” has its own menu on the top of the page, which contains all required operations that could be performed with persons. Note: In inventory system, operations with DB “Person” are reduced according to requirements.

Page “**Administration**” has its own menu on the top of the page, which contains all required operations that could be performed with roles and permissions.

Page **“Faculty and Department”** has its own menu on the top of the page, which contains all required operations that could be performed with Faculties and Departments. Note: In inventory system operations with Faculties and Departments are reduced according to requirements.

Page “**Requests**” has its own menu on the top of the page, which contains all required operations that could be performed with requests.

Page “**Search**” has its own menu on the top of the page, which allows the user to perform basic and advanced search.

Page “**Report**” has its own menu on the top of the page, which contains all required operations that could be performed with reports.

## Screen Objects and Actions

A screenshot of a computer

Description automatically generated

Figure: - Scheme of the main web pages (pink rectangles) and main actions (blue rectangles) that can be performed on each page

**User interface**

Used GUI components are menus, submenus, buttons, text boxes, check boxes, down drop lists, links, and tables. The only means of access to the entire database, by all users, is through this UI.

### REQUIREMENTS MATRIX

**Hardware and Software Requirements:**

**Hardware:**

The App supports iPhone 5s,6s,6s plus,7 and so on for installing and running the application on IOS device.

**Software:**

The App is compatible with OS X 10.1 to the latest version of IOS.

The App does not support the software on iPhone 4s device and lower.