ÇANKAYA UNIVERSITY

**Software Design**

**Document**

Usability Testing Platform Development

**15.04.2024**

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# 1. Introduction

This software design document details the design and implementation of the "Usability Testing Platform Development" project.

It plays a very important role in the software process to be able to test the usability of the work that software teams do or design during the project. Proper usability is often achieved through testing and feedback. We develop our web-based usability testing platform to meet this need.

Our platform aims to combine in a single web application the main purpose of preventing time loss in the software process and evaluating, developing and improving the usability of products.

# 2. Overview

This Software Design Document (SDD) provides a comprehensive outline of the design and architecture of the Usability Testing Platform. The document is structured to ensure a clear understanding of the system’s functionalities, design considerations, and the technological framework supporting its implementation. The following sections make up the body of this document:

## 2.1 System Architecture

The Usability Testing Platform Development consists primarily of four main components:

* Frontend Components” User Interface”
* Backend Services
* Database
* E-mail Services

## 2.2 Technological Structure

The system will utilize the following technologies:

* Web Development: html, CSS, js, etc.
* Backend Development
* Database: SQL Server
* External Integrations: Authentication, and Email Server, Interface Communication

# 3. Component Design

This section encompasses the design of major components within the system.

## 3.1 User Interface Design

Each page of the testing platform should have a clean and intuitive design to ensure ease of use for all types of users. UI design should prioritize clarity, functionality, and accessibility to enhance the overall user experience.

## 3.2 Backend Services Design

These backend services provide the necessary functionality for managing users, software, usability issues, comments, administrative tasks, blog posts, email notifications and error handling for the web usability testing platform. Each service has clearly defined end points, input parameters and output formats to facilitate communication between front- and back-end components.

## 3.3 Database Design

The database is used to store the data required to log into the system. This includes administrator accounts and registration requests. Components such as first name, last name, email address and password will be included in the data model.

# 4. Data Flow and Workflow

This section outlines the data and workflow within the system.

## 4.1 User Registration Flow

* User navigates to the User Registration Page and fills out the registration form.
* Upon submission, the system validates the user input.
* Users can submit the registration form to create their accounts.

### 4.1.1 User Login Flow

* User navigates to the Login Page.
* User enters their email address and password into the designated fields.
* Upon submission, the system validates the user's credentials against the stored data.
* If the credentials are valid, the system grants access to the user's account.
* If the credentials are invalid, the system displays an error message indicating the problem.
* Optionally, the system provides a "Forgot Password" link for users who need to reset their password.
* After successful login, the user is redirected to their dashboard or a designated landing page.

## 4.2 Software Home Page Workflow

* User accesses homepage.
* Reads overview section about platform's mission.
* Views informative section highlighting key features.
* Clicks buttons to navigate:
  1. User Registration
  2. Software Listing
  3. Blog Page
  4. Profile Page
  5. Login Page

## 4.3 Software Listing Workflow

* Users view the Software Listing Page to see available software titles.
* They can click on a software title to view its detailed usability page.

## 4.4 Software Usability Workflow

* Users access the Software Usability Page to view detailed information about a specific software.
* They can see usability problems submitted by testers, along with comments and ratings.
* Only software owners can add comments or updates regarding the findings.

## 4.5 Usability Problem Submission Workflow

* Testers submit usability problems through the Usability Problem Submission Page.
* Submitted findings undergo an approval process by the admin before being displayed.

## 4.6 Admin Panel Workflow

* Admins manage user accounts, software listings, blog posts, and other platform functionalities through the Admin Panel.

## 4.7 Blog Page Workflow

* Users can access informative blog posts related to usability and user experience through the Blog Page.

# 5. Security Design

The platform implements robust security measures to protect user data and ensure system integrity. Encryption, access control, validation mechanisms, and intrusion detection systems are utilized to safeguard the platform against security threats.

The system will implement the following security measures:

* All user data will be encrypted using industry-standard protocols.
* Access to sensitive information will be restricted based on user roles.
* Third-party libraries and dependencies will be carefully vetted and validated to ensure they do not introduce security vulnerabilities.
* Intrusion detection and prevention systems will be used to detect and mitigate security threats in real-time.

# 6. Performance Design

The system is designed to meet performance requirements such as supporting concurrent users, optimizing data retrieval, utilizing database caching mechanisms, and ensuring efficient operation of key functionalities to provide users with a seamless experience.

The system is designed to meet the following performance requirements:

* Ability to support 500 concurrent users.
* Optimize needs to efficiently retrieve usability findings and related data for the selected software.
* Use database caching mechanisms to cache frequently access data and data load.
* Optimize needs to efficiently retrieve blog posts based on user requests.