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CSD 460 Capstone – Module 2.1

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21 Oct 23

**Technical Design Document (TDD) - Proviso Project**

**1. Introduction**

**1.1 Purpose**

The purpose of this Technical Design Document (TDD) is to outline the requirements and technical design for the Proviso project. This document will provide a structured approach to fulfill the project's objectives and deliverables.

**1.2 Terminology**

* TDD: Technical Design Document
* HTML/CSS: HyperText Markup Language and Cascading Style Sheets
* MySQL: A relational database management system
* Session: A temporary storage space to maintain user information during their visit to the website

**1.3 User Personas**

In this section, we will define three user personas who will interact with the Proviso project. Understanding these personas is crucial for crafting user stories and designing a system that meets their needs.

**1.3.1 User Persona 1: Administrator**

* Name: Sarah
* Role: Administrator
* Background: Sarah is responsible for managing user accounts, permissions, and system configurations. She needs a system that allows her to efficiently perform administrative tasks.

**1.3.2 User Persona 2: Data Analyst**

* Name: Alex
* Role: Data Analyst
* Background: Alex is responsible for analyzing data and generating reports. He needs a system that provides easy access to data, tools for analysis, and report generation capabilities.

**1.3.3 User Persona 3: End User**

* Name: David
* Role: End User
* Background: David is a regular user of the system. He needs a user-friendly interface for accessing information and performing common tasks.

**1.4 User Stories**

In this section, we will define user stories that capture the key features and functionalities that our Proviso project should deliver. Each user story includes a title, description, and story points.

**1.4.1 User Story 1: Administrator Account Management**

Description: As an administrator (Sarah), I want the ability to manage user accounts efficiently. This includes creating, updating, and deactivating user accounts, as well as setting and modifying user permissions.

**Story Points: 8**

**1.4.2 User Story 2: System Configuration**

Description: As an administrator (Sarah), I need to configure system settings such as email notifications, password policy, and other system parameters to ensure the system functions according to our organization's requirements.

**Story Points: 5**

**1.4.3 User Story 3: User Access Validation**

Description: As an administrator (Sarah), I want to validate and grant user access based on their registration and login information, ensuring that only authorized users can access restricted features.

**Story Points: 4**

**User Persona 2: Data Analyst (Alex)**

**1.4.4 User Story 4: Data Access for Analysts**

Description: As a data analyst (Alex), I need access to data and databases for analysis. I expect the system to provide a secure and user-friendly interface for retrieving data relevant to my analysis tasks.

**Story Points: 6**

**1.4.5 User Story 5: Data Analysis Tools**

Description: As a data analyst (Alex), I require tools for data analysis such as querying, filtering, and generating reports. The system should integrate these features to streamline my data analysis workflow.

**Story Points: 7**

**1.4.6 User Story 6: Report Generation**

Description: As a data analyst (Alex), I want the capability to generate reports based on the data I analyze. These reports should be customizable and exportable in various formats for easy sharing and presentation.

**Story Points: 8**

**User Persona 3: End User (David)**

**1.4.7 User Story 7: User-Friendly Interface**

Description: As an end user (David), I need the website to have a user-friendly interface for easily accessing information and performing common tasks like exploring lodge details and available activities.

**Story Points: 4**

**1.4.8 User Story 8: Lodge Reservation**

Description: As an end user (David), I want the ability to reserve a lodge efficiently by selecting room size, specifying the number of guests, and choosing check-in/check-out dates. The system should provide a clear summary and confirmation process.

**Story Points: 7**

**1.4.9 User Story 9: Reservation Lookup**

Description: As an end user (David), I would like to look up my previous reservations with ease. The system should provide a straightforward search feature using reservation ID or email address and display a summary of my past reservations.

**Story Points: 5**

**1.5 Work Estimations (ToDo List)**

The following tasks need to be added to the team Kanban board for development and testing. Please delegate these tasks to the appropriate team members:

**1. Task 1: User Account Management**

- Assigned to: Joel

User Story for Task 1: User Account Management

As an Administrator named Sarah, I want to have a system that will allow me to effectively allow me to create, update, and deactivate user accounts, as well as set and/or modify permissions. This will help me in maintaining, the reservation process, and validate user accounts.

Acceptance Criteria:

1. As an Administrator named Sarah, I should be able to create user accounts.

2. The user information should be stored into a database.

3. I should have the ability as an administrator, to update user accounts.

4. I should have the ability as an administrator, to deactivate an account or accounts.

5. I should be able to set the permissions as an administrator, for the user accounts.

6. As an administrator I should be able to modify the permissions for user accounts.

7. I should be able to access the information for user accounts by calling on that user account. Things such as phone number or email address.

8. I should be able to pull a report and print of the User Accounts that we currently have. Potentially the length that they have been a member.

**2. Task 2: Data Access and Analysis Features**

User Story for Task 2: Data Access and Analysis Features

As a Data Analyst named Alex, I want to have easy access to data related to Moffat Bay Lodge's reservations for analysis and reporting purposes. This will help me in generating meaningful reports and insights.

Acceptance Criteria:

1. As a Data Analyst, I should be able to access the reservation data from Moffat Bay Lodge's website.

2. The reservation data should include relevant information such as room size, number of guests, and check-in/check-out dates.

3. I should have the ability to search for reservation records using either a reservation ID or an email address associated with the reservation.

4. The system should provide a summary of each reservation, displaying details like room size, number of guests, and check-in/check-out dates.

5. I need the option to export or download the reservation data for analysis in common data analysis tools.

6. The system should have a user-friendly interface that allows me to easily filter and sort the data.

7. The reservation data should be up-to-date, reflecting the latest reservations made on the website.

8. Access to the reservation data should be secure and restricted to authorized personnel.

9. I should be able to generate reports based on the reservation data, with the option to customize the report parameters.

10. The system should support the export of reports in common formats like CSV or PDF.

11. The reports should be well-organized and contain relevant information to facilitate data analysis and decision-making.

12. Any changes to the reservation data or reports should be logged for auditing purposes.

By implementing these features, I will be able to efficiently analyze Moffat Bay Lodge's reservation data and generate reports that can assist in decision-making and improve the lodge's services.

**3. Task 3: User-Friendly Interface Design**

- Assigned to: Gabriel

- User Story for Task 3: User-Friendly Interface Design

I, David, need the website to have a user-friendly interface for easily accessing information and performing common tasks like exploring lodge details and available activities. It should match the overall aesthetic of the website as to not be too distracting, and allows the content to be smoothly maneuverable from one element to another.

Acceptance Criteria:

1. Visual elements should match overall aesthetic established in the landing page without overwhelming the user experience.

2. All information should be presented in a clear and minimalistic manner to communicate what information is available and where.

3. Display a summary of activities related to the area of the website that is being explored and/or possible recommendations.

4. Summary of activities should include a graphic or image to help visualize the activity presented.

5. Moving from page to page or visual element to another should be a smooth transition. Ex. Looking through different lodge models or details.

Definition of Done:

1. David can see all elements of the website without any contradictory choices both in aesthetic and functionality.

2. David can maneuver through different tabs or areas of information without error and in a smooth manner.

3. David can clearly read what information is available and where it is located in the website.

4. David can see and navigate through recommendations but they should not be intrusive to his experience.

**4. Task 4: Data Import and Export Functionality**

- Assigned to: Tabark

As a data analyst (Alex), I need to import and export data for analysis and reporting purposes. The system should provide features for securely importing external data into the system and exporting analyzed data in various formats.

Acceptance Criteria:

* The system must allow data imports in common formats such as CSV and Excel.
* Imported data should be validated for consistency and accuracy before being incorporated into the system.
* Users should be able to map imported data to the appropriate fields within the system.
* Imported data should be stored securely in the system's database.
* Users, especially data analysts like Alex, should be able to schedule regular data imports for automation.
* The system must provide data export capabilities in common formats like CSV and Excel.
* Exported data should be customizable to include specific fields and time frames.
* The export process should be efficient and not hinder system performance.
* Security measures should be in place to protect the integrity of imported and exported data.

Definition of Done:

* The system allows secure data imports and exports.
* Imported data is validated and mapped correctly.
* Data export is customizable and efficient.
* Data security measures are in place to protect data during import and export processes.

**5. Task 5: Report Generation Module**

- Assigned to: Tabark

As a data analyst (Alex), I need a robust report generation module that allows me to create, customize, and export reports based on the data I analyze. These reports should assist in decision-making and be suitable for sharing with the lodge management.

Acceptance Criteria:

* The system must provide a user-friendly interface for creating and customizing reports.
* Report templates should be available for common types of reports, such as reservation statistics and customer demographics.
* Data visualization tools should be integrated for creating charts and graphs within reports.
* Users should be able to customize report parameters, including date ranges and specific data fields.
* Reports should be exportable in common formats like PDF and Excel.
* Exported reports should be well-organized, visually appealing, and contain relevant information for decision-making.
* Any changes made to the data or reports should be logged for auditing purposes.

**6. Task 6: Data Security Implementation**

- Assigned to: Gabriel

- User Story for Task 6: Data Security Implementation

Description:

All users involved with the platform, including those that do and do not provide sensitive information as well as those that manipulate that user information are subject to having any information compromised. The website must be safe in all levels of interaction and covers all systems to ensure any point of vulnerability is addressed.

Acceptance Criteria:

1. There is a clear roadmap for what security systems/implementation will take place, when, and where.

2. There is a clear understanding on the development end on what types of systems are used and why.

3. All possible vunerabilities are reviewed and addressed properly.

4. Website must meet industry standards for safety.

Definition of Done:

1. Website meets requirements set by industry standards.

2. Website is able to pass different tests (TBD) as well as maintain stability under specific conditions (TBD).

3. All security concerns are addressed and logged with systems in place running properly.

**7. Task 7: Mobile Accessibility Enhancement**

- Assigned to: Andrew

As an end user named David, I require the Moffat Bay Lodge website to have a user-friendly interface that allows me to easily access information and perform common tasks on my mobile device. This will enhance my experience while exploring lodge details and available activities.

Acceptance Criteria:

* The website should be responsive and fully accessible on mobile devices, ensuring that all features and content are usable and visually appealing on various screen sizes.
* The navigation menu, including links to lodge details, available activities, and other key sections, should be easily accessible and functional on mobile screens.
* All text content, images, and multimedia elements should be appropriately resized and formatted to fit mobile screens without sacrificing readability or usability.
* Buttons, links, and interactive elements on the website should be large enough and well-spaced to facilitate easy touch interactions on touchscreens.
* Forms for tasks like registration and reservation should be optimized for mobile input, with well-designed input fields and user-friendly error messages.
* The website should load quickly and perform efficiently on mobile devices to provide a smooth and frustration-free experience for users like David.
* User feedback mechanisms, such as alerts or notifications, should be clear and easily noticeable on mobile screens.
* The website should maintain a consistent and visually appealing design across different mobile devices and orientations (portrait and landscape).

Definition of Done:

* The Moffat Bay Lodge website is fully responsive, providing a seamless user experience on mobile devices.
* All key navigation links and menu items are functional and easily accessible on mobile screens.
* Text, images, and multimedia elements are appropriately formatted and sized for mobile screens.
* Interactive elements are designed for easy touch interactions, enhancing user convenience.
* Forms are optimized for mobile input, with clear and helpful error messages.
* The website's performance on mobile devices meets acceptable speed and efficiency standards.
* User feedback mechanisms are clear and noticeable on mobile screens.
* The website maintains a consistent and visually appealing design across various mobile devices and orientations.
* Extensive testing on different mobile devices and browsers confirms the website's mobile accessibility and usability.
* Code is reviewed and approved for compliance with responsive web design best practices.
* Documentation is updated to reflect the mobile accessibility enhancements and their impact on the user experience.

**8. Task 8: Integration with External Systems**

- Assigned to: Andrew

Description:

As a data analyst, Alex needs access to data related to customer reservations, lodge occupancy, and other relevant information for the purpose of conducting data analysis and generating reports. The integration with external systems should provide him with the tools and capabilities to efficiently access, analyze, and report on this data.

Acceptance Criteria:

1. The system must provide a secure and authenticated data access mechanism for Alex.

2. Alex should have access to the following data points through the integrated system:

- Reservation data, including room size, number of guests, and check-in/check-out dates.

- Customer data, including email address, first name, last name, and contact details.

- Lodge occupancy and availability information.

3. The integrated system should allow Alex to retrieve and download data in a structured format suitable for data analysis (e.g., CSV or Excel files).

4. Alex should be able to apply data analysis tools, including filtering, sorting, and basic calculations, to the retrieved data within the integrated system.

5. The system should enable Alex to generate reports based on the analyzed data, including reservation statistics, customer demographics, and lodge occupancy trends.

6. The reports should be exportable in a common format (e.g., PDF or Excel) for sharing with the lodge management.

7. The integration should be built to ensure data security and privacy, adhering to best practices for data protection and encryption.

Definition of Done:

- Alex can access the integrated system securely with his provided credentials.

- Alex can successfully retrieve the required data through the integrated system.

- Alex can analyze the data and generate reports.

- The reports are downloadable and exportable.

- Data security measures are implemented as per best practices.

- User documentation and training are provided to help Alex effectively utilize the integrated system.

**9. Task 9: User Training and Support Resources**

- Assigned to: Joel

David an end user, would like to have documentation from the lodge’s website that assists in finding previous reservations with ease. The system should have an easy-to-follow form that is a path that is easy for the end user to follow. David would like some potential help videos, helpful files, instructions, things to make his experience easier.

Acceptance Criteria:

- The system must provide an easy to navigate process to look up reservations.

- The system must provide an easy-to-follow form.

- There should be clearly labeled fields.

- Along the user input fields in the form, there should be greyed out information of what to type in the boxes.

- Next to the input boxes there should be help files that open instructions on what to place in that form and why it is important.

- The submit button should appear clear as this is the button to press to send the form.

- The form should pull the reservation information from a database and display it in a nice, formatted presentation.

- Story: User Story 9

**Design**

**2.1 Prototypes**

**2.2 ERD**

**QA Testing**

**3.1 QA Test Plan**

To complete the test case plan, fill out the information for Project, Course, Description and Date in the header below.

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|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test 1 | **Test Name** | | | |
|  | **Test Objective:** | **Developer:**  **Date tested:** | **Peer tester:**  **Date tested:** <yyyy/mm/dd> | |
| **Step** | **Action** | **Expected results:** | **Developer pass/fail** | **Tester pass/fail**  **+ Screenshot** |
| 1 |  |  | **pass/fail** | <yes/no> |
| 2 |  |  | **pass/fail** | <yes/no> |
| **Comments** | Comments should be substantive; this means there should be at least 2-3 well-structured sentences with constructive feedback. | | | |