SOFTWARE ENGINEERING

Final Project Report

VIRTUAL TOUR CAMPUS

By:

Ribathullah Ahmad Yasin (001202300028)

Francis Eben Haezer rajagukguk (001202300214)

PRESIDENT UNIVERSITY

2024

Grading Summary

CLO	Indicators	Grades
	CLO1: Able to analyze a software requirement plan and apply a software development methodology and design in order to identify and create a solution	
	CLO2: Able to design, implement, and evaluate software development methodology to create solutions that meet the computing needs of a disciplinary program based on a set of requirements	
	CLO3: Able to apply software development methodologies and principles to develop a robust solution	
Total		

I. Problem Statement

The primary challenge faced by new students, matriculants, and foreign visitors is the difficulty in navigating and familiarizing themselves with the campus environment. Many individuals live far from the university, and organizing a physical tour for each individual is not practical. This issue impacts not only the students but also the administration, which seeks to simplify the process of campus orientation.

To address this, the proposed solution is a virtual campus tour application. It will allow users to view the campus environment interactively from anywhere. This application bridges the distance gap and provides users with a clear and immersive preview of the campus. By implementing this solution, we aim to minimize confusion for first-time visitors while reducing the administrative burden of arranging physical tours.

II. Application Description

1. The app provides a virtual, interactive 360-degree tour of the campus, allowing users to explore key facilities and locations from any device.
2. It eliminates the need for physical campus tours, making it easier for prospective and new students, professors, and visitors to navigate the campus remotely.
3. Unlike Google Maps, this app focuses solely on the campus and provides detailed, up-to-date images captured specifically for this purpose. It also allows personalized updates through admin features.
4. It offers a unique combination of detailed, user-specific campus navigation and accessibility anytime, anywhere.

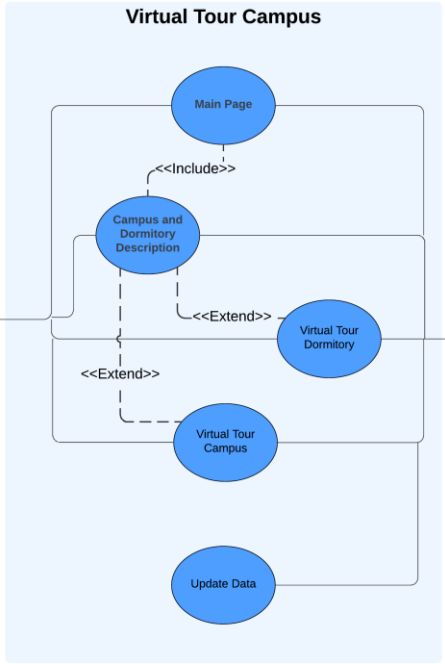
2.1 Existing Business Process

Currently, campus tours are conducted manually, requiring staff time and effort to guide students and visitors around the campus.

2.2 Proposed Business Process

The virtual campus tour replaces manual tours with a digital solution, enabling users to explore the campus independently through an interactive platform.

III. Functional Description



Case Scenario

Title	Scenario
Description	User open virtual Tour
Actor & interface	Actor: User Interface: Web Page, Virtual Tour
Pre-Condition	User has not yet entered the Virtual Tour
Basic Flow	-User open the web site -User go to campus/dormitory page -User click the button Virtual Tour
Post-Condition	-User has entered the Virtual Tour
Alternative Flow	-Bad Connection

IV. Data Requirement from user's perspective

a. **ERD (Entity Relationship Diagram)**
b. **Data Dictionary.**
c. **Entity tables**
d. **Relations with cardinality of each Relation**

V. Functional Requirement from user's perspective

A. Context Diagram

a. Actors:
- User: Can interact with functionalities like:
  1. Main Page
  2. Campus and Dormitory Description
  3. Virtual Tour Dormitory
  4. Virtual Tour Campus
- Admin: Has access to "Update Data" and potentially manages content for the virtual tour features.

b. Interactions:
- The system includes relationships such as
  1. <<Include>> between Main Page and Campus and Dormitory Description.
  2. <<Extend>> for optional features: Virtual Tour Dormitory and Virtual Tour Campus

B. Activity Diagram and Data Flow Diagram

1. Activity Diagram:
   - The Activity Diagram outlines the flow of activities for the user and admin:
     - User:
       - Accesses the Main Page.
       - From the Main Page, they can view Campus and Dormitory Description.
       - Based on the user's choice, the optional activities (extensions) include:
         - Virtual Tour Dormitory
         - Virtual Tour Campus
     - Admin:
       - Admin is responsible for Update Data, ensuring all content in the system remains up-to-date.
2. Data Flow Diagram (DFD):
   - The DFD describes how data flows between actors and processes:
     - Main Page provides a summary description to users.
     - Campus and Dormitory Description retrieves data related to campus and dormitory details.
     - The Virtual Tour Dormitory and Virtual Tour Campus receive user requests and fetch relevant multimedia or description data.
     - Admin Update Data activity feeds content updates into the system.

C. Detailed Process for Activity Diagram and DFD

User Process:

- **Main Page:**
  - **Users start by accessing the system's main interface.**
  - **This page includes a brief overview of the campus and dormitory description.**
- **Campus and Dormitory Description:**
  - **After navigating from the Main Page, users get detailed information about:**

        - **Campus facilities**
        - **Dormitory accommodations**
- **Extensions:**
    - **Virtual Tour Dormitory:**
        - **Users can trigger an extension to view the virtual tour of the dormitory.**
        - **This process may involve fetching visual or multimedia data.**
    - **Virtual Tour Campus:**
        - **Users can also access a virtual tour of the campus.**
        - **Similar to the dormitory tour, this involves fetching multimedia content.**

Admin Process:

- **Update Data:**
    - **Admins can add, edit, or delete data related to campus descriptions, dormitory details, and virtual tour content.**
    - **This ensures all user-accessible data remains accurate and up-to-date.**

VI. System Implementation

4.1 Application

1. 

Tabs allow users to go directly to the desired page instantly.
2.
3. 

"LEARN MORE" button has the function of moving to the about page.
4. 

"VIRTUAL TOUR" button has the function of opening a virtual tour.

5. 

The red circle is a hotspot in the virtual tour, its function is to move places.

5.2 Source Code

```
<nav>
    <ul>
        <li><a href="#home">Home Page</a></li>
        <li><a href="#about">About</a></li>
        <li><a href="#programs">Campus</a></li>
        <li><a href="#contact">Dormitory</a></li>
    </ul>
</nav>
```

Example:

- `href="#home"` is the link for pages
- this code has the function of moving pages instanly

```
<div class="section" id="home">
  <div>
    <h1>Welcome To President University</h1>
    <p style="margin-bottom: 20px; text-align: center;">To be an eminent university that produces leaders with entrepreneurial spirit, multicultural and global mindset</p>
    <a href="#about" class="btn">Learn More</a>
  </div>
</div>
```

Example:

- **<a href="#about" class="btn">** is the code for button in html
- The function is moving to the about page

```
<div>
    <h1>Campus</h1>
```

```
      <p style="margin-bottom: 30px;">This is the link to Campus Virtual Tour. You can explore the campus area everywhere and anytime.</p>
      <a href="http://localhost/project/index.html" class="btn">Virtual Tour</a>
   </div>
```

Example:

- href=http://localhost/project/index.html this is code for go to link virtual tour.
- main function is moving to virtual tour.
- virtual tour has a separate website from the main website, so this code is a portal to the virtual tour.

VII. Testing Results

Test Case	Input	Expected Output	Actual Output	Status
Tab Button	Click on the button	Move to the desired page	Move to the desired page	Pass
"LEARN MORE" button	Click on the button	move to the about page	move to the about page	Pass
"VIRTUAL TOUR" button	Click on the button	Open the virtual tour	Open the virtual tour	Pass
hotspot	Click on the hotspot	move places	move places	Pass

REFERENCES

{if any}

No References, just use software (Pano2vr) and web (kuula) for build the Virtual Tour

REQUIREMENTS

- **Min pages is 10 pages**
- **Provide as much graphics as you can—not only diagrams, but any kind of diagrams and illustrations that will make it easier for us to understand and evaluate your effort. Graphics are always helpful, you have probably heard the saying "a picture is worth a thousand words"!**
- **Consistency, clarity, and correctness of the report are critical. The report must be complete, in the sense that it is *self-contained* and the reader doesn't need other materials to understand it. Anticipate what could be confusing to the graders and clarify every possible source of ambiguity or inconsistency.**
- **The report should have professional appearance; make sure that it is neat, easy to read and understand, with clearly labeled section headings, figure captions, pagination, and without grammatical and typographical errors. Also, check that diagrams and images are *readable when printed* (i.e., letters or symbols are not too small and illegible). If you are using colors in images and diagrams, check that they are discernable when printed in black-and-white/grayscale. Every figure/table must be referenced in the text and properly described.**
- ***Do not write your report as a collection of hints for which only you know the actual meaning.* Write your report from a third person's point of view. You know everything about your project so you do not need much information to understand what is in. A third person has only general knowledge of OOP and needs help in understanding how general principles are applied in your specific context.**
- **The report should be submitted to the lecturer before the final examination week ended in pdf and docx format**
- **The application should be submitted in the Gdrive**
- **Late reports will be levied a late penalty of 10% per day, up to 3 days late. After that, no credit will be given, unless you provide a written excuse from a physician. Since the deadlines are known well ahead, there will be no extensions for any of the deadlines. Please do not bother asking.**