Assignment Overview:

In this assignment, you are required to develop a comprehensive Project Proposal and Requirements Specification (PPRS) for your intended project. This presentation is a critical step in your project development process, where you will articulate the foundational aspects of your project and lay out a clear plan for its execution.

Assignment Objectives:

The main objectives of this assignment are to:

1. Clearly define the aims, objectives, and scope of your project.
2. Provide a thorough definition of the problem your project intends to address.
3. Conduct an initial literature review to establish the context and relevance of your project.
4. Identify and specify the tools (both hardware and software) required for project development.
5. Outline the technical and other skills necessary to complete the project successfully.
6. Describe the requirements gathering process you will employ.
7. Develop and present a detailed list of project requirements.
8. Create a time schedule that outlines key milestones and deadlines.
9. Provide a bibliography of all sources consulted and referenced in your presentation.

**Assignment Requirements:**

Your submission should include the following:

* **Aims, Objectives, and Scope:**

***Aims:*** *The primary goal of this project is to develop* *a full stack application where users can add photos to an interactive map, associating them with the countries they have visited. The system aims to allow users to create personalized galleries based on geographic locations, offering an organized and customized visual experience.*

***Objectives:***

1. *Create an intuitive and interactive interface that allows users to navigate the world map.*
2. *Enable users to log in and add photos associated with countries.*
3. *Implement a photo management system that allows uploading, viewing, and deleting images.*
4. *Ensure that photos are stored efficiently and securely.*
5. *Include a facial recognition feature to facilitate the identification of people in the photos.*

***Scope:*** *The project involves the development of a system that:*

* *Allows users to upload photos to countries they have visited.*
* *Provides an interactive, map-based interface.*
* *Ensures security through JWT authentication.*

*The project does not cover integrations with external social media platforms, nor will it provide advanced photo-editing functionalities.*

* **Definition of the Problem:**

*Many photo management applications do not offer direct integration with interactive maps, limiting the ways users can visually organize their memories. The* ***Photomap Application*** *seeks to address this gap by allowing users to organize and view their photos in a geographic context, providing a more meaningful and interactive experience.*

*The importance of this solution lies in the growing demand for applications that combine interactive maps with personalized photo galleries, which can be useful for personal, commercial, and educational purposes.*

* **Background Review:**

*In recent years, the integration of interactive maps with photo management systems has gained increasing popularity due to the growing demand for personalized user experiences. Many studies and technological developments have focused on enhancing user interaction with geographical information and digital media, leading to the rise of map-based applications in areas like travel journaling, photo-sharing platforms, and location-based services.*

***Key Findings from Literature:*** *Research indicates that most existing photo management applications focus on chronological or album-based organization, often neglecting the geographical context of images. Studies on interactive systems have shown that integrating maps can significantly improve user engagement by providing a more intuitive way to organize and view memories based on location. Geographic Information Systems (GIS) and platforms like Google Maps and Leaflet have made it easier for developers to create interactive map-based interfaces, which have become common in various industries such as tourism, real estate, and logistics.*

***Critical Analysis of Key Sources:*** *Despite the advancements, gaps still exist in systems that combine map-based interfaces with advanced photo management features. Most map-based platforms focus on navigation or location tracking but lack robust photo management capabilities, while traditional photo-sharing applications like Google Photos and Flickr focus on organizing memories chronologically or by event but do not integrate an interactive map in a meaningful way. Amazon Rekognition, an AI-based tool for facial recognition, is a powerful addition to these systems, but it is rarely integrated with map-based photo management systems*

***Trends, Gaps, and Influence on the Project:*** *While platforms like Google Photos have experimented with mapping features (e.g., displaying photo locations on a map), these functions are often secondary and lack interactive engagement. Similarly, map-based applications often have limited or non-existent photo management features, highlighting a gap in the market for applications that can effectively combine both. This gap informed the decision to focus on creating a seamless integration between photo galleries and an interactive map, using AI-based facial recognition to further enhance user experience. By drawing inspiration from platforms that excel in either maps (such as Leaflet) or photo management (such as Google Photos), the project aims to bring together the strengths of both, while addressing the shortcomings of each.*

* **Tools (Hardware/Software):**

***Hardware:*** *A development PC (already available) and potentially a hosting server.****Software:***

1. ***Frontend:*** *React with Leaflet for map manipulation.*
2. ***Backend:*** *Spring Boot with Java, JWT for authentication, and PostgreSQL as the database.*
3. ***IDE:*** *IntelliJ IDEA and Visual Studio Code.*
4. ***Other Tools:*** *Postman for API testing and Git for version control.*

* **Use Cases, Diagrams, and Requirements Elicitation:**

***Use Cases:***

1. ***User login:*** *Users can authenticate into the system with their username and password.*
2. ***Add photos to a country:*** *Users can upload photos associated with countries they have visited.*
3. ***Manage photos:*** *Users can view and delete their photos from specific countries.*

***Diagram:*** *You can create a use case diagram showing the interactions between the user, backend, and the map/photo system.*

***Requirements Gathering:*** *Requirements can be gathered through interviews with potential users and analysis of similar systems. Tools like surveys or usage log analysis can also be employed to better understand how users interact with the application.*

* **Time Schedule:**
* Develop a time schedule that includes all major tasks, milestones, and deadlines.
* Present this schedule in a clear and concise format, such as a Gantt chart.
* **References / Bibliography:**
* Provide a complete list of all sources used and cited in your presentation.
* Use a consistent and appropriate citation style.
* **Ethics** **Form**
* The completed Ethics Form must be mentioned in the presentation and included in the handout.
* If you do not include your Ethics Application signed by you and your supervisor, the overall assignment will automatically receive a mark of 0.