

**CAPSTONE PROJECT REGISTER**

**Class**: **Duration time**: from 12/5/2025 To 30/8/2025.

**(\*) Profession:** Software Engineer **Specialty**: <IS> 🗹

**(\*) Kinds of person make registers:**  Lecturer Students Hộp Văn bản

**1. Register information for the supervisor**

| No. | Fullname | Phone | **E-Mail** | **Title** |
| --- | --- | --- | --- | --- |
| Supervisor 1 | Nguyễn Thị Cẩm Hương |  | Huongntc2@fe.edu.vn | Ms. |

**2. Register information for students**

|  | **Full name** | **Student code** | **Phone** | **Email** | **Role in Group** |
| --- | --- | --- | --- | --- | --- |
|  | Phan Trần Bảo Thiên | SE172958 | 0902579872 | thienptbse172958@fpt.edu.vn | Leader |
|  | Phùng Trần Mai Hà | SE172939 | 0902694262 | haptmse172939@fpt.edu.vn | Member |
|  | Đoàn Huỳnh Tường Vy | SE173622 | 0981927941 | vydhtse173622@fpt.edu.vn | Member |
|  | Phạm Huy Hoàng | SE172789 | 0763160426 | hoangphse172789@fpt.edu.vn | Member |

**3. Register content of the Capstone Project**

**(\*) 3.1. Capstone Project name:**

* English: FPTU Science Research Project Management
* Vietnamese: Ứng dụng quản lý đề tài nghiên cứu khoa học cấp trường
* Abbreviation: SRPM

1. **Context:**

* Currently, the school lacks a dedicated tool for managing research projects, relying instead on Gmail and Google Forms for coordination. This approach results in inefficiencies in organization, evaluation, and transparency in the research process. The proposed **SRPM** system aims to modernize this workflow by introducing an **AI-powered platform** that automates the initial evaluation of research proposals and transitions them into a structured web-based management system.

1. **Proposed Solutions** :

Build a Web application to support a comprehensive research management ecosystem with the following roles:

* **Research Member:** Researchers and students who register to participate in projects. They are responsible for updating progress on their assigned tasks and collaborating closely with the Principal Investigator.
* **Principal Investigator:** These users are in charge of each research project. They propose new projects, oversee progress, assign tasks to team members, and evaluate research outcomes.
* **Host Institution**: These individuals are authorized to create research topics and are also responsible for assuming the outcomes of the completed research projects.
* **Appraisal council:** They can create evaluations of projects, project’s milestone, and proposals.
* **Staff:** Personnel responsible for reviewing project proposals and generating formal reports. They play a key role in the preliminary evaluation and documentation of the projects. approval of research projects
* **Administrators:** Privileged users who monitor system activity, transactions, reports and manage system employees.

*Note: An authenticated user may hold multiple roles based on their responsibilities (e.g., a Principal Investigator might also contribute as a Team Member).*

* **Functional requirements:**

**Web Application**

| **Researcher Member** | | |
| --- | --- | --- |
| **No.** | **Function** | **Description** |
| **1** | **Login** | Principal Investigators can log in using their Google account. |
| **2** | **Registration** | Guests can sign up using their institutional Google account, with an email domain ending in @fe.edu.vn. |
| **3** | **User profile management** | Manage their profile information, update their name, avatar, background, and social links. |
| **4** | **Project Visibility** | This feature controls who can view detailed information about a project. Only users who are assigned as members of a project can access full project details, including evaluations, progress, funding, and internal discussions.  Users who are not part of the project can only see basic information such as the project title, description, status, and owner. This ensures data privacy, while still allowing public or organizational visibility where necessary. |
| **5** | **Project’s Task**  **Management** | Update progress on assigned tasks, upload supporting documents, and mark milestones. |
| **6** | **Real-Time Notifications** | Researchers receive real-time updates about task assignments, milestone reviews, and other project activities to stay informed. |
| **7** | **Funding Request** | Researchers can submit and manage requests for project funding. Users can specify the required amount and purpose of the funds and attach supporting details such as budget breakdowns or justifications. It helps streamline the approval process, maintain transparency in resource allocation, and ensure that project teams have the necessary financial support to move forward. |

| **Principal Investigator** | | |
| --- | --- | --- |
| **No.** | **Function** | **Description** |
| **1** | **Login** | Principal Investigators can log in using their Google account. |
| **2** | **Monitoring Tools** | Monitor the timeline and ensure all tasks are completed per the planned schedule. |
| **3** | **User profile management** | Manage their profile information, update their name, avatar, background, and social links. |
| **4** | **Real-Time Notifications** | Receive alerts when tasks are updated, milestones approach, or any significant activity occurs within the project. |
| **5** | **Project’s Task Monitor** | Continuously monitor the progress of the project tasks, evaluate outcomes against set milestones, and make adjustments to ensure the project's success. |
| **6** | **Reports and Analytics** | Access detailed analytics and reporting on the project's performance, including progress metrics, team contributions, and insights into outcomes. |
| **7** | **Proposal Submission** | Allows the Principal Investigator to submit research proposals via the SRPM platform, ensuring centralized management. |

| **Host Institution** | | |
| --- | --- | --- |
| **No.** | **Function** | **Description** |
| **1** | **Login** | Host Institution can log in using their Google account. |
| **2** | **Research Topic Creation** | This feature allows **host institutions** to create and publish **research topics for project proposals**. These topics are then made available for interested individuals or teams to view and apply for. Each topic can include detailed descriptions, objectives, expected outcomes, requirements, and available funding (if any). |
| **3** | **Principal Investigator Approval** | Enables the host institution to review and approve attendance for the position of Principal Investigator. This process ensures that appointed individuals meet necessary qualifications and eligibility criteria before taking responsibility for the research project. |

| **Appraisal council** | | |
| --- | --- | --- |
| **No.** | **Function** | **Description** |
| **1** | **Login** | Appraisal council can log in using their Google account. |
| **2** | **Project Evaluations** | Allows users to create and manage project reviews, providing feedback on project outcomes, performance, and overall quality. Users can assess different aspects of a project, such as planning, execution, teamwork, and deliverables. It helps in tracking project success, identifying areas for improvement, and sharing insights for future reference. |
| **3** | **Progress Evaluations** | Allows users to create reviews for individual project milestones. Each progress evaluation focuses on assessing the quality, timeliness, and effectiveness of work completed at a specific stage of the project. It helps ensure that every step of the project is aligned with goals and standards, enabling early detection of issues and continuous improvement throughout the project lifecycle. |

| **Staff** | | |
| --- | --- | --- |
| **No.** | **Function** | **Description** |
| **1** | **Login** | Staffs can log in using their Google account. |
| **2** | **User profile management** | Manage their profile information, update their name, avatar, background, and social links. |
| **3** | **System Account Management** | A staff member can add, delete, edit, and view the list of users who can access and use the web admin application functions. |
| **4** | **Transaction Approval** | Staff members can monitor transactions and modify their statuses within the application. They are able to search for specific transactions and review detailed information, including transaction date, transaction type, and other relevant details. |

| **Admin** | | |
| --- | --- | --- |
| **No.** | **Function** | **Description** |
| **1** | **Login** | Admin can log in with their email to access the app’s features. |
| **2** | **System Configuration** | The system parameter management function enables an admin to configure and manage various system settings. As an admin, you can adjust these settings to optimize the system's performance and ensure it operates correctly. |
| **3** | **Account Role Management** | Administrators are responsible for overseeing authenticated user accounts and their permissions. They have the ability to view all user profiles within the system, modify existing ones, and perform targeted searches to efficiently manage user access and roles. |
| **4** | **Reports and Statistics** | The reports and statistics function provides an admin with various reports and statistics that offer insights into the stories and user behavior. As an admin, you can use these reports to track transactions and optimize the system. You can also use this function to track user engagement and identify areas for improvement in the user experience. |

(\*) 3.2. Main proposal content (including result and product)

1. **Theory and practice (document):**

* Students should apply the software development process and UML 2.0 in the modeling system.
* The documents include User Requirement, Software Requirement Specification, Architecture Design, Detail Design, System Implementation, and Testing Document, Installation Guide, sources code, and deployable software packages.
* Server-side technologies:
* Server: ASP.NET Core 8 Web API, NGrok, Azure Cloud, Redis, Firebase.
  + - * AI: OpenAPI
* Database Design: SQL Server.
* Client-side technologies:
* Web Client: ReactTS, TanStack, ShadCN, TailwindCSS, Axios.

1. **Products:**

* Web application

1. **Proposed Tasks:**

* Task package 1: Deploy DB
* Task package 2: Deploy a web app

4. Other comments.

| **Supervisor**  *(Sign and full name)*  Nguyễn Thị Cẩm Hương | HCM, date 00/00/2025  **On behalf of the Registers**  *(Sign and full name)*  Phan Trần Bảo Thiên |
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