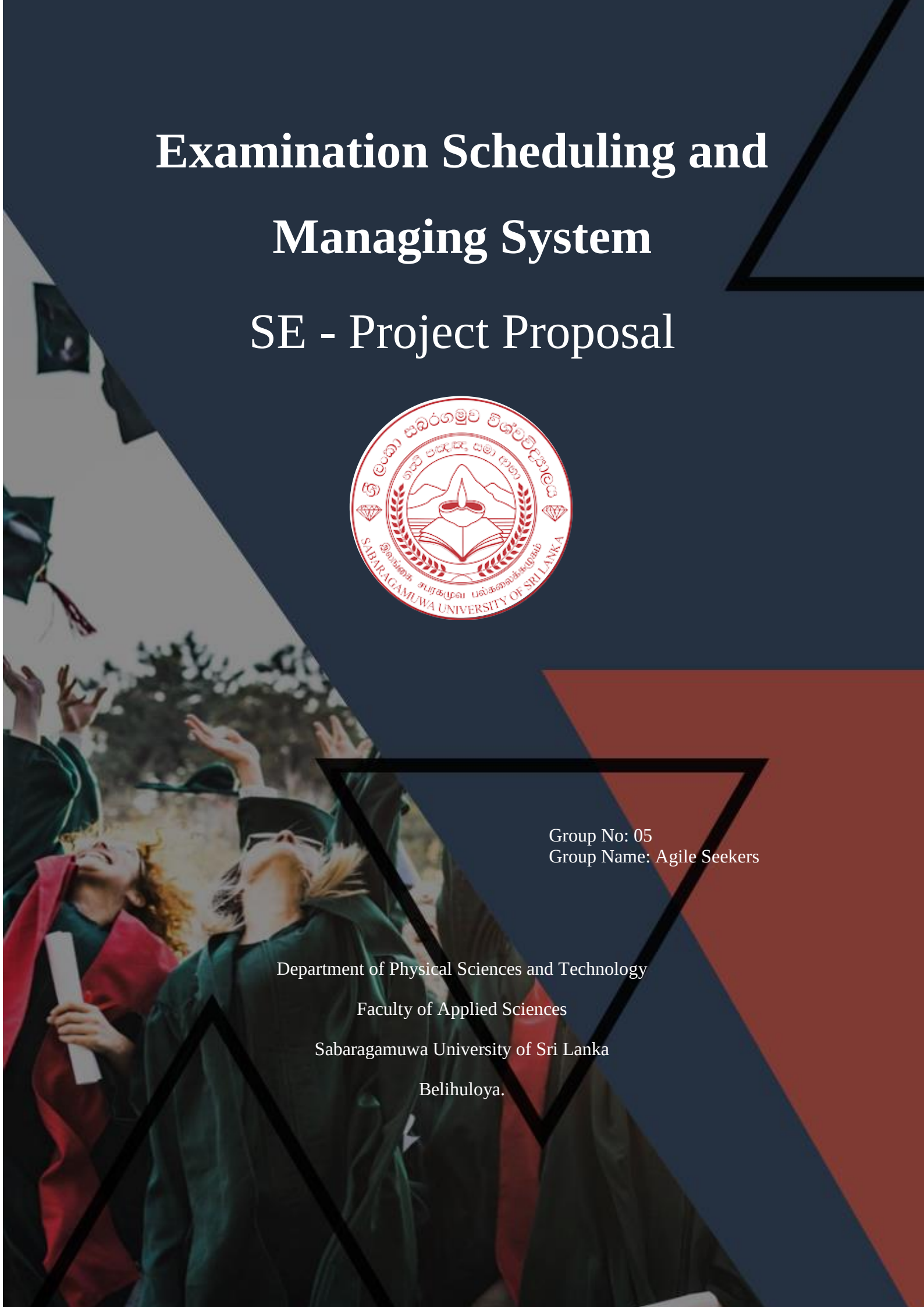
Examination Scheduling and Managing System

SE - Project Proposal



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1. **Overview**

Examination scheduling and managing is a crucial part of the university which is done by the examination branch of the Sabaragamuwa University of Sri Lanka. There are lots of works to be done when an examination arrives such as the pre-examination activities like preparing examination time table, seating arrangement and invigilation allotment and as the post-examination activities like result uploading, generating reports that is done by the examination branch. Currently almost all of these processes are done manually in the examination branch. The purpose of developing the Examination Scheduling and Managing System is to computerize the traditional way of managing examination processes. It provides a series of modules designed to support different parts of the above processes.

The stakeholders of the Examination scheduling and managing system will be admin, undergraduate students, lecturers and faculty wise staff assistant managers (exam branch non academics).

2. Objectives of the system and Target Users

Most of the processes of the current system in the examination branch are carried out manually like academic and non-academic staff details, student details and hall details which are available for the examination. Since these processes are done manually, it increases the workload and easily gets errors. This outdated current system takes a lot of time and requires manpower. Sometimes due to the increasing number of students, there might be issues associated with examination settings which have to be dealt with by the examination branch. The existing current system is inefficient, ineffective and less accurate, in such a situation report generation is not a simple task also if report is generated calculations have to be done manually which will surely result in errors. The current system requires more manual work and some paperwork required and also previous records may not be stored with proper descriptions.

The main objectives of this project are, to overcome above stated drawbacks of the current system and facilitate following advantages to target users.

- Easy to handle and operate.
- Friendly interface.
- Fast and convenient.
- Less human effort and easy to update.
- Easy message passing and smart way of communication
- No paperwork required.

Target users of the new system: Admin, undergraduate students, lecturers and faculty wise staff assistant managers (exam branch non academics).

3. Methodology

We are hoping to develop the Examination Scheduling and Managing System using an iterative incremental model.

Gathering of requirements through discussions, and inspections of the manual system and also the files maintained. Gathering of problems and requirements are done through questionnaires answered by students and lecturers. Requirements can be gathered through several cycles iteratively. The development project is less complex and requirements are identified. So, using an iterative model would be more suitable to develop this system flexibly. This will take comparatively less time such as 3-4 months for the completion of the project. The risks can be managed while each iteration. Testing of the system is done for few individual stakeholders in order to identify challenges and experiences with the new system. Analysis of data is obtained by surveys and tests. Implementing is planned to be done parallel until the stakeholders become friendly with the new system. Updating of the system is guaranteed until 2 years of implementation.

4. Tools and technologies

1. Java: Swing, Spring Boot

Since this is a web application we are going to use Spring Boot as backend framework because it is a java based framework and we have experiences in using Java and also it eases the development by abstracting lots of work.

2. PHP: Laravel

Open source, integration with mail services and tools for making web applications faster, automation of testing work, error configuration and exception handling, message queue system, higher security

3. UI and web development frameworks: Angular

As for the frontend we are hoping to use Angular because we need to study new technologies and angular has auto refreshing capabilities and it supplies a type safe environment unlike Javascript. It is an open source where the codes are reusable, efficient and quick to develop

4. Web technologies: HTML, XML, CSS

5. Databases/Web Servers: MySQL, Apache

Because of we already have experiences in using these technologies.

5. Challenges

- Success criteria are not defined clearly; it is normal for stakeholders to know that they have a problem or an opportunity to explore, but not know exactly what they want.
- Stakeholders change their minds
- Stakeholders are not willing to speak up or they are being too expressive
- Stakeholders have Conflicting priorities
- Stakeholders imply or insist on a particular technical solution
- Communication Problems; this is a broad category of requirements issues and includes: miscommunication, language barriers, wrong assumptions, unclearly defined vocabulary
- Limited infrastructure/resources
- Time limitations
- Rapid technology advancement

6. Gantt chart

Activity	Time duration													
	April		May				June				July			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Planning														
Designing														
Development														
Testing														
Delivery														
Maintenance														

7. References

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- [3]J. GRADY, *SYSTEM REQUIREMENTS ANALYSIS*. [Place of publication not identified]: ELSEVIER, 2017.