BIC21003: SYSTEM ANALYSIS AND DESIGN

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SECTION 11

PROPOSAL REPORT

DEVELOPMENT OF DIGITAL SPORTS DAY SYSTEM IN WEB APPLICATION (E-TOURNAMENT)

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CHAPTER 1

INTRODUCTION

1.1 Project Background

Sports day are events staged by many schools and offices in which people participate in competitive sporting activities, often with the aim of winning trophies or prizes. This long stand tradition in schools, and interestingly, it has endured over time. The sports are an annual event held in school to promote sports among the students through an active and healthy lifestyle besides to keep students active and fit.

The transition from manual to web-based scoring systems is imperative for several reasons. Firstly, manual scoring is time-consuming, often leading to delays in announcing results and causing frustration among participants and spectators. Secondly, the margin for error in manual scoring is significantly higher, which can unfairly impact the outcome of competitions. Moreover, manual systems lack the flexibility and scalability required to accommodate the diverse needs of modern sports events.

Thus, this project aims to enhance efficiency by introducing e–tournament, an online platform designed to streamline the scoring process for sports day activities. This digital solution will be accessible to judges who are in charge of overseeing the current manual system. The web-based system will empower judges to update athletes' scores digitally. The system will then automatically compare these scores to determine the winners of each event. Furthermore, it will utilise the aggregated scores to determine the rankings of sports houses, facilitating the seamless calculation of overall standings based on individual and team performances. This automation not only reduces the burden on judges but also ensures accurate and efficient results for a more enjoyable sports day experience. Additionally, the athletes who join the sports will promptly receive updates for their curricular activities mark.

1.2 Problem Definition

In SMK Shahbandaraya Kota Raja, the management of school sports events remains rooted in traditional methods and outdated computerised systems. Within this framework, judges overseeing each sport are tasked with utilising paper forms to record scores. This reliance on manual scoring introduces inefficiencies and limitations to the process.

Judges are burdened with the laborious task of manually filling out paper forms for every athlete's performance, meticulously noting down scores and comments. This manual data entry process is not only time-consuming but also susceptible to human error, as judges may misinterpret or inaccurately transcribe scores, leading to discrepancies in the final results.

Once the scores are recorded, the paperwork undergoes a collection, collation, and processing phase led by event organisers. However, this process is also labour-intensive and prone to further errors and delays. The manual handling of paperwork not only consumes valuable time but also adds complexity to the task of ensuring accuracy in the final scoring.

Consequently, the entire scoring process often experiences delays, hindering the timely announcement of results and detracting from the overall excitement and engagement of participants and spectators alike. These inefficiencies underscore the urgent need for modernization and the adoption of more streamlined and efficient digital solutions for managing school sports events.

1.3 Objective

The aim of this project is to develop Development of Digital Sports Day System in Web Application (e-tournament) for SMK Shahbandaraya Kota Raja.
The objectives of this system are to:

1. Design an e-tournament management system with improved features
2. Develop an e-tournament management system using web-based approach
3. Test the developed system on its functionality and user-friendly

1.4 Scope

The research focus of this project centres on the development of the e-tournament web-based system aimed at streamlining scoring management processes currently reliant on outdated, manual methods. Specifically tailored for judges as the one who can key in the score and organiser that can view only at SMK Shahbandaraya Kota Raja, located in Klang, Selangor, this system is accessible via official ID account created by its user for added security. Given its deployment in national schools where Malay serves as the official language of Malaysia, the system operates primarily in Malay.

Through the e-tournament system, users gain access to a range of functionalities. These include Login Module, Registration Module, Category Module, Menu Module and Search and Filter Function will be built to satisfy users. Additionally, the system is built as the judge convenience as they are able to update the score activities freely via a website with no time limitation. This system enables comprehensive competition ranking and profile management functionalities. It allows for the seamless organisation and ranking of competitions, ensuring accurate and up-to-date standings. Additionally, it provides tools for managing participant profiles, including tracking performance history and managing personal information. These features streamline the overall management of sports events, enhancing efficiency and effectiveness.

1.5 Project Significance

The sports day management system revolutionises the tournament experience by offering a seamless platform where teachers can effortlessly input scores or points, ensuring real-time data updates through the Digital Sports Day web application. This innovative approach eliminates the burdensome task of manual score entry and constant data updates, liberating teachers from administrative burdens.

By digitising this process, teachers enjoy ample free time as the system streamlines tasks, making them simpler and more time-efficient. Consequently, the Digital Sports Day Web application significantly enhances productivity for both teachers and students, fostering increased engagement and a more dynamic co-curricular environment.

In conclusion, this web application not only ensures the security of tournament score data by storing it in a database but also provides a centralised platform for easy access and retrieval. Moreover, it facilitates seamless collaboration among stakeholders, ultimately contributing to a more organised and efficient sports day management experience.

1.6 Chapter Summary

Chapter 1 embarks with describing the introduction of the project. The main thing about this project is to build a software or web based for sport day score entry processes. It highlights the manual processes that are still in place for sport day event record-keeping, and manual score entry, emphasising the inefficiencies and burdensome processes that affect both students and teachers. Then, it continues with the objective of the project followed by delineating the scope of project. The chapter then seamlessly progresses into an overview of the significance of the project. The forthcoming chapter will further discuss more about the stakeholder that is involved in this project which is SMK Shahbandaraya Kota Raja, to elucidate their roles in contributing to the project's success.

CHAPTER 2

LITERATURE REVIEW

2.1 Basic Concept, Definition and Theory

In this chapter, the focus lies on reviewing the company profile and existing system investigation, with particular emphasis on the Sport Day Management System's development of Digital Sport Day web application for score entry for tournaments during sport day events. Transitioning to a web-based application for scoring system offers a significant improvement in efficiency compared to the manual process.

The Digital Sport Day Web application serves as a comprehensive software solution, offering an intuitive online platform for scoring tournaments during Sports Day events. With its user-friendly interface, this application empowers teachers to efficiently input data online, significantly streamlining the data entry process. Developed in alignment with client requirements, this web application embodies tailored functionalities to meet the specific needs of teachers and administrators alike.

For further clarification, this literature review drew upon resources sourced from books, the internet, and academic journals. Additionally, various methods were employed to facilitate discussion and analysis within the project.

In section 2.2, will be discussed about the company profile which is one of the project stakeholders, SMK Shahbandaraya Kota Raja. This section is divided into 5 parts. First, describing the background of the company. Then, followed by history, location and environment, vision and mission, and organization structure. The next section is 2.3, this section discusses existing system investigation. Lastly, section 2.4 will conclude with a summary of the chapter's findings.

2.2 SMK SHAHBANDARAYA KOTA RAJA

2.2.1 Background

Sekolah Menengah Kebangsaan Shahbandaraya Kota Raja was founded on 1 January 2004. It is situated at Jalan Raja Nong, Off Jalan Kota Raja, 41000 Klang, Selangor Darul Ehsan. Puan Hjh Fatimah binti Mat Tamin was the school's first principal. Formerly known as Sekolah Menengah Kebangsaan Kampung Jawa 2, the school's name was changed to Sekolah Menengah Kebangsaan Shahbandaraya Kota Raja in 2005 in order to clear up the confusion among the local community. This school utilises from Form One to Form Five students and also the Integrated Special Education Programme (PPKI). It is an ordinary secondary school. SMK Shahbandaraya Kota Raja has expanded and developed significantly since it was established. The school hired 19 teachers and had 158 students enrolled in its first year of operation. This was the first step on the path to becoming the area's best-known school.

The school increased its curriculum as it developed to help students with different educational backgrounds. In 2005, SMK Shahbandaraya Kota Raja shown its dedication to diversity and inclusivity in education by admitting students from the Special Student Programme (KRK). In addition, the school began to admit students into the Form Six Science Stream, which offers chances for higher education studies in science-related subjects. In general, the years after SMK Shahbandaraya Kota Raja’s establishing were characterised by the school's quick expansion, a variety of academic programmes, and dedication to both student achievement and academic excellence. These changes opened the way for SMK Shahbandaraya Kota Raja to rise to prominence as a local innovator in education, offering students chances for both academic success and all-around growth.

SMK Shahbandaraya Kota Raja not only focuses on academics but also emphasises building students' character through extracurricular activities. With excellent management and a culture of excellence, it has become a school known for its well-planned and engaging learning environment. It strives to nurture individuals who excel in both knowledge and character, aiming to contribute positively to religion, nation, and country.

Currently this school is still using a manual method to key in the score for a tournament during Sports Day. It has been determined that SMK Shahbandaraya Kota Raja's manual system for entering tournament results during sports day is ineffective. The Sports Day management system intends to create a web application for score entry in order to simplify this procedure and reduce the burden on teachers. Teachers' work will be made easier by this platform, which makes it simple for them to enter scores for different events. Teachers will save time and minimise errors by only logging into the web application to digitally enter the

scores, replacing the need for manual data entry. Both teachers and students will gain from this digital solution, which will improve management of sports day tournaments in terms of accuracy and efficiency.

In conclusion, since its founding, Sekolah Menengah Kebangsaan Shahbandaraya Kota Raja has grown significantly. Despite its successes, the school understands that efficiency is needed, so efforts are being made to create a web application for score entry during Sports Day tournaments. This will hopefully ease the workload for teachers and ensure accuracy and efficacy in event management.

2.2.2 History

The initiative is centred around the co-curricular system of Sekolah Menengah Kebangsaan Shahbandaraya Kota Raja. The school was established on June 9, 2003, and commenced its activities on January 1, 2004, under the leadership of Puan Hjh Fatimah Binti Mat Tamin as the principal, supported by Puan Hjh Mawarni Binti Yahya as the Senior Administrative Assistant, and Puan Hjh Jamaliah Binti Rais as the Senior Assistant for Student Affairs. The school is a daily institution that accommodates students from Form 1 to Form 6. The school opened and enrolled 158 students and 19 teachers, which was considered a significant accomplishment at the time.

The Athletic Tournament of SMK Shahbandaraya Kota Raja began in 2004. Although athletic tournaments started early at this school, the process to calculate the marks of every sport was challenging for teachers. During the initial phases of introducing sports day in the school, registration and other tasks would be recorded manually in books. This strategy is impractical, especially for teachers who must manage multiple students simultaneously. Although the system has been upgraded to Excel, it still has several flaws that we can address.

2.2.3 Location and Environment

The project location is situated at Jalan Raja Nong Off, Jalan Kota Raja, 41000 Klang, Selangor. This location is close to a densely populated residential area. The school currently has an expected total of 1735 students and 109 teachers due to the selected location. The location of

our project influences the system we designed. Schools' systems in the city tend to be more advanced compared to those in the suburbs.

Sports Day is a customary event that takes place at schools every year. At SMK Shahbandaraya Kota Raja, students are categorised into four sports teams Zamrud, Topaz, Delima, and Nilam. Students will be allocated to this team randomly at the start of the school year. Two essential steps required for this activity are athlete registration and calculation of marks for sports houses.

At Sports Day, students have the option to participate as an athlete, volunteer, or in other capacities. Each team's athletes will compete in the game they signed up for versus athletes from another team. The sports to be competed in include long jump, high jump, 100m relay, and shot put. This practice would produce pupils who are physically and mentally healthy.

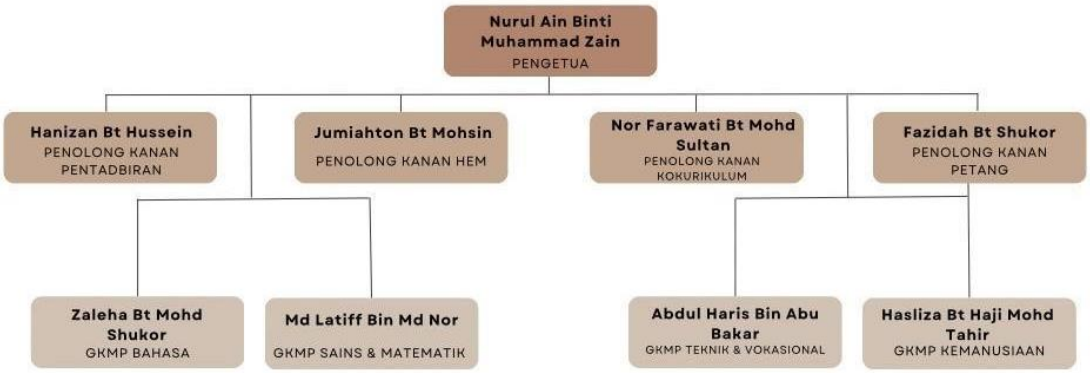
2.2.4 Vision and Mission

The project mission is to provide a web-based system that enables teachers to organise their sports day activities. This advanced system reduces the time required and enables users to engage with the software system to complete their tasks more easily. We promise to provide users with a completely unique and exceptional experience when utilising this system.

The vision of this project is to create a new system for Sports Day at SMK Shahbandaraya Kota Raja. The enhanced version will feature a student achievement for the sport that they participate in. In the future, this approach will likely reduce the workload of teachers while maintaining the National Education Policy (DPK) that focuses on integrating ICT into schools.

2.2.5 Organization Structure

Figure 2.1: SMK Shahbandaraya Kota Raja Organization Chart



2.3 Existing System Investigation

There are three existing systems that have been studied and analysed by our group. These three systems are used as an act of influence and also for us to obtain more information and ideas about how and what is the design or the flow that our system or web is going to be when it is done. The three existing systems are called Google Form by Google, Tabroom.com, and Challonge. These three systems have the similarities in terms of the usage, functionalities, user-interface and also the reason it is created for. However, although it is the system that has been used by the majority of the world, these three existing systems may also be lacking in some ways which depend on the customer needs and the system target. Therefore, there are various differences and similarities that can be stated from these three systems compared with our web-based application which is the E-Tournament.

2.3.1 Google Form by Google

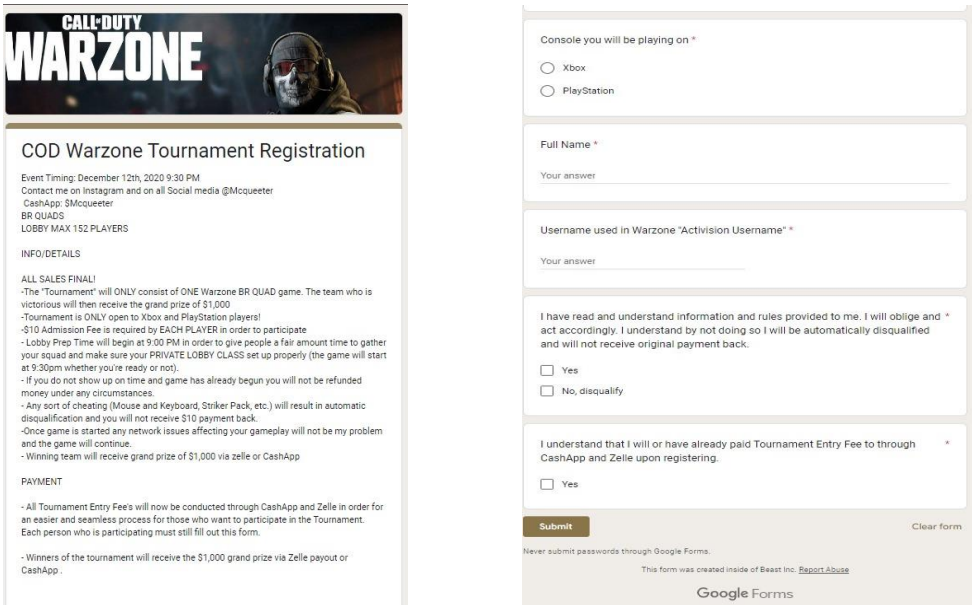
First and foremost, this system or web which is called Google Form is a system that has been used by the majority of the population of students and also lecturers and teachers whether in higher or lower level of education. It is a system that everyone has heard of and also it can be used in many different ways. Generally, Google Form is used as a tool to create a survey or quiz, however due to its versatility, it also can be used as a tool to satisfy the need for a tournament (Lau, 2024). While it's not specifically designed for tournament management, Google Forms can be adapted for various purposes, including tournament registration and data collection.

In terms of creating a tournament registration, the organiser has the benefit and advantages to control and craft custom registration forms whether it is for gathering participant information, including event preferences or even contact details. These forms also can capture essential participant information such as contact details, event preferences, and also any other types or details organisers require. Therefore, with a range of question types available, including multiple-choice, dropdown menus, and also text fields, the organisers can efficiently gather the necessary data in order to facilitate smooth tournament requirements or logistics.

Other than that, in addition to facilitating registration, Google Forms also serves as a valuable tool for gathering feedback from the participants. From the organisers view, before or after the tournament they can also deploy surveys in order to gauge the participant satisfaction. They also can even collect suggestions for improvement, and even gather demographic information for future planning purposes. This feedback loop gives the power to the organisers to continuously refine and enhance the tournament for participants. Moreover, google Forms can also be adapted for specific tournament requirements, such as judging or scoring. Organisers have the freedom to customise the design judging forms that align with the criteria used to evaluate participants.

However, while Google Forms may lack some of the advanced features found in dedicated tournament management platforms, its simplicity, ease of use, and also seamless integration with other google services make it an attractive option for smaller scale tournaments or events with a straightforward registration and data collection needs.

Figure 2.2: Google Forms Tournament Usage



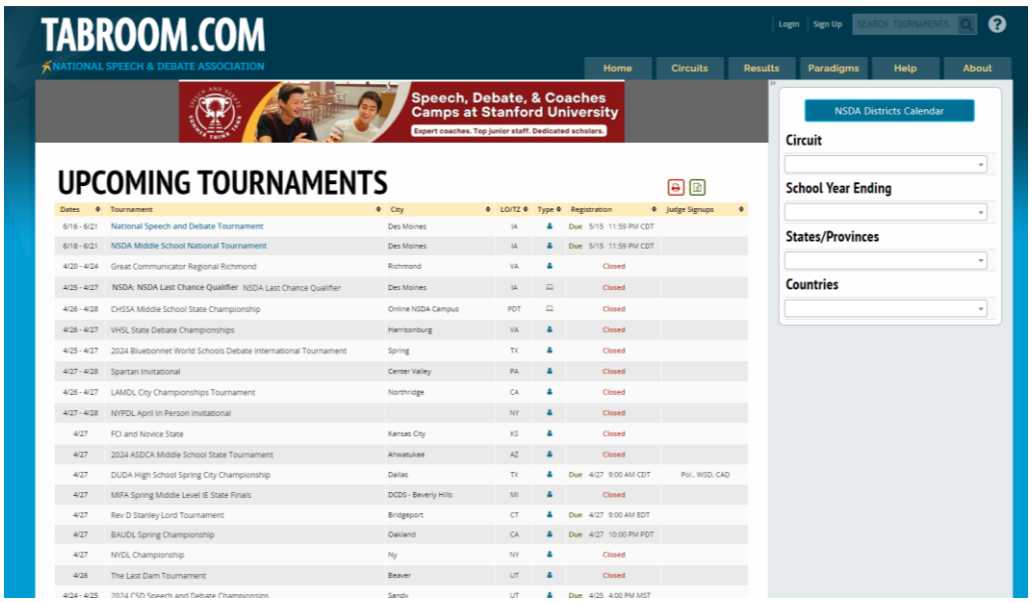
2.3.2 Tabroom

Firstly, as it sounds, we might not be able to figure out what exactly is a Tabroom and what is it used for. Is it a system of rooms full of tabs and menus? Is it a website for online games for underage children? While doing a little research, Tabroom is actually an online web and platform that is mainly and primarily used for managing debate and speech tournaments. Back in the day, almost 20 years ago, a common speech or debate tournament was mainly done physically in terms of registration, points, pairings, list of judges or even the event room of the competition. It is all stated and divided on index cards and loose pieces of paper that is worked over by coaches. Therefore, Tabroom started to happen when a former competitive speaker and part-time coach Chris Palmer, realised and stated a comment that the whole process of managing this competition could be done and run more smoothly (Giella, 2023). With that spark of idea has led to the creation of a web that is primarily used for debate and speech competitions worldwide which is called Tabroom.

One of the key features of Tabroom is its robust registration system. This can be seen where the tournament organisers can set up online registration forms where participants can sign up for events, provide necessary information such as school affiliation and event preferences, and even pay registration fees if applicable. Therefore, this immediately eliminates the need for manual registration processes and ensures that all participant data is collected accurately and securely. Furthermore, tabroom also excels in tabulation or the process of creating brackets, pairings, and schedules for tournament events. This specifically means that tournament directors can use the platform to generate and update brackets, assign judges to rounds, and track results in real-time. This allows for smooth and efficient tournament operations with organisers having full visibility and control over the progress of the event.

Furthermore, Tabroom also offers communication tools for organisers to send announcements, updates, and notifications to participants, coaches, judges, and volunteers. This ensures that everyone involved in the tournament is kept informed about important information such as the tournament schedule, rules, and logistics. Overall, Tabroom stands out as a comprehensive and user-friendly platform that caters specifically to the needs of speech and debate tournaments, making it an indispensable tool for organisers looking to run successful events.

Figure 2.3: Features in Tabroom



2.3.3 Challonge

To begin with, it may sound a bit hilarious in terms of the name given, however the web itself may exceed your expectations about what this web can do. For approximately 3 and a half years being reign under Logitech's arm, this web which is called Challonge has officially transitioned and formed an independent business and is no longer affiliated with Logitech. Therefore, with that statement, Challonge will be taken in control by the original founder which is David Cornelius and Matt Mclntyre (Challonge Returns to Its Independent Roots - Challonge FOO, 2023). That is the brief history about this web. Now, as it is said before, there are lots and lots of features that this web proposes.

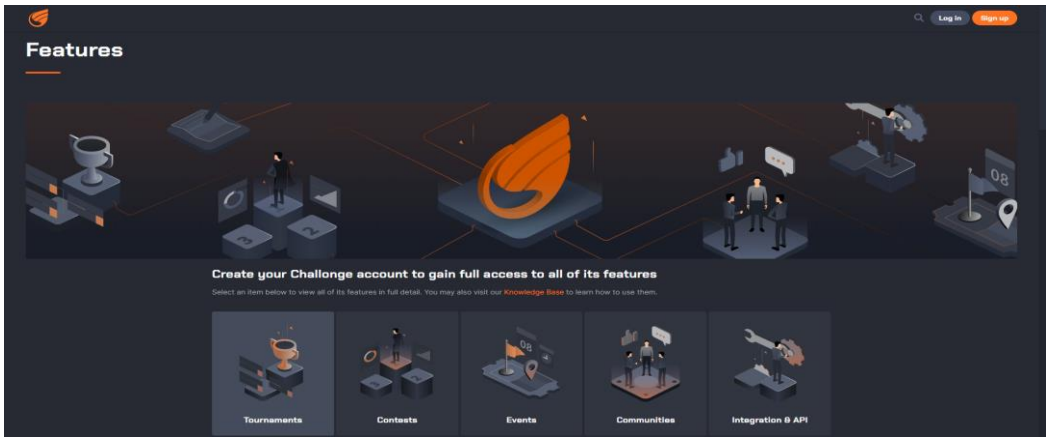
First of all, what exactly is Challonge? Challonge basically stands as a dynamic online platform crafted in order to streamline the organisation and management of tournaments spanning a broad spectrum of competitive activities, ranging from esports tournaments to sports events and hobbies (About Challonge - Challonge, n.d.). At its core, Challonge provides a user-friendly interface that empowers organisers with the capability to swiftly generate custom tournament brackets, tailored to meet the specific needs and preferences of their event. Whether it's a single elimination, double elimination, round-robin, or Swiss-style tournament, Challonge offers flexible bracket formats, ensuring organisers can seamlessly configure brackets to suit their tournament requirements.

One of the standout advantages of Challonge lies in its registration functionality, which simplifies the participant sign-up process. Through Challonge, participants can conveniently register for tournaments directly on the platform, while organisers have the flexibility to customise the registration forms in order to gather essential participant information. This streamlines the registration process which enables organisers to collect pertinent details such as usernames, contact information, and skill levels, ensuring a smooth and organised tournament experience.

Moreover, Challonge offers a suite of features dedicated to facilitating real-time match reporting, communication, and result tracking. Participants can easily report match results directly through the platform, facilitating instant updates to the tournament bracket. Additionally, built-in communication tools enable organisers to disseminate or spread the crucial tournament information such as rules, schedules, and announcements in order to ensure that all participants remain informed throughout the event. Challonge also automates result tracking, ensuring that organisers and participants have access to up-to-date information on tournament progress. Not to mention that there is also a tab where participants or customers can buy merchandise or purchase tickets on the ‘sell’ tab.

In essence, Challonge stands as a comprehensive solution for tournament organisers whereas it provides the necessary tools and functionalities to orchestrate successful tournaments of all sizes and formats. Its versatility, ease of use, and also robust feature set make it a preferred choice among organisers and participants. Whether organising a small local gaming competition or a large-scale international esports tournament, Challonge empowers organisers to create memorable and engaging tournament experiences.

Figure 2.4: Features in Challonge



2.3.4 Comparison of Existing System

Therefore, all three of these systems are studied and compared to the proposed system. This comparison allows the proposed system to be enhanced and included with some of the features that already exist between all three systems. The result of the comparison is shown in Table below.

Table 2.1: System Comparison

Module	Google Form	Tabroom	Challonge	E-Tournament
Register	/	/	/	/
Participant waiver	/	/	/	/
Login	/	/	/	/
Categories	/	/	/	/
Menu	/	/	/	/
Dashboard	X	/	/	/
Marks / Points	X	/	/	/
Communication	/	X	/	/
Survey	/	X	/	X
Results & History	X	/	/	/
Sells	X	X	/	X

From the table comparison, it is shown that there are several modules that are applied in our web and also some modules that are not decided to be applied in our web. The features such as register, participant waiver, login are such modules that we find as compulsory due to the participant and the organiser which are the teachers that need to be filled in order for agreement and privacy use. Other than that, features such as categories, menu, dashboard, and marks/points are also the modules that we decided to add and use in order to achieve our target when creating and publishing this web, which is the E-Tournament. Moreover, features such as communication and results & history are also the features that we find useful in order to make our user-friendly web-based application to be used easily and smoothly. However, there are also some of the features that we did not choose to add which are the survey and sells

features because we did not see that it is a compulsory need for our system and they do not have a big or useful purpose that corresponds with the goal of our system.

2.4 Chapter Summary

In general, the literature review serves as a major guideline in the development and implementation of the Digital Sports Day System in the Web Application (e-tournament). By comparing systems, it enables the implementation of a better and more reliable web-based system. This chapter highlights important concepts and points in implementing the application and aims to create a more user-friendly and easier-to-use system.

The next chapter will demonstrate how the project will be implemented including determining the most appropriate methodology and the rationale for selecting that particular model for the project. Furthermore, it will also explain how the project progresses through each phase along with its requirements. The construction work will be based on aligning with the progress outlined in the Gantt Chart.

CHAPTER 3

SYSTEM DEVELOPMENT METHODOLOGY

3.1 Introduction

In this project, the transition from manual scoring to a web-based system is being developed entirely from scratch. Insights will be drawn from the provided manual sheets instead of relying on pre-existing templates or frameworks from GitHub. This approach surely demonstrates the commitment to customise functionality and design of the system that meets user requirement. Throughout the development, languages such as PHP, HTML, CSS and Java will be used to organise the framework and analyse the components needed.

3.2 Agile Model

The methodology to be implemented into a Digital Sports Day System in Web Application (e-tournament) is Agile in Sprint approach. Agile model or methodology is a hybrid of iterative and incremental process models that emphasises process adaptability and customer satisfaction through the rapid delivery of working software solutions (Sandepa, 2021). In Sprint, projects are broken down into manageable sprints and each incorporates direct communication between cross-functional teams and stakeholders throughout the development process. Agile prioritises rapid development and frequent software releases as they aim to minimise process overhead and produce high-quality code. Eventually, it will be able to maximise value throughout the development process and significantly reduce overall project risks (Partner, 2018). Figure 3.1 shows the sprints of the Agile model.

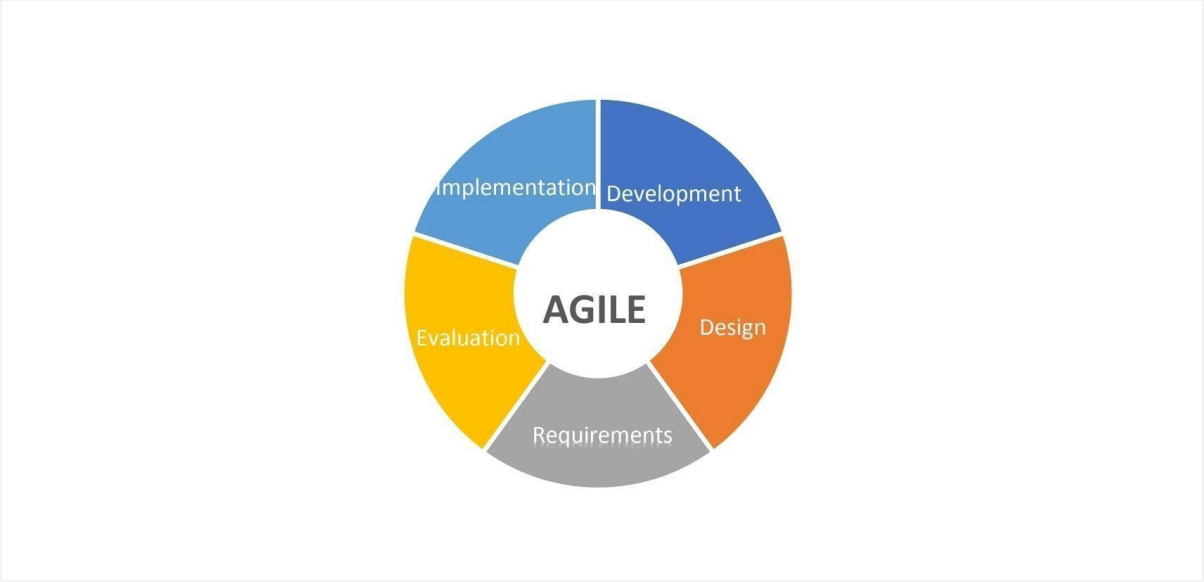


Figure 3.1: The Sprints of the Agile Model

3.1.1 Requirement

All user requirements from the staff of SMK Shahbandaraya Kota Raja are gathered for the proposed system that needs to be implemented. In this phase, information will be gathered via the previous manual scoring methods used in sports days and how it functioned to ensure efficient management particularly in terms of delivering fast results. During this stage, data and resources will be collected from teachers, students, and case studies to gather ideas to develop an online sports day system.

3.1.3 Design

During the *Design* phase, a suitable workflow for the structured system will be constructed based on the defined requirements such as interface design and the database. The database will be built using MySQL and phpMyAdmin meanwhile Canva will be used for interface design.

3.2.3 Development

As the *Development* sprint progresses, the web-based code will be written as well as a relevant prototype. To build this web-based management system for sports day, Visual Studio Code is chosen and will be used in the development phase that relies on PHP language. PHP is used for creating dynamic websites and platforms as well as handling form functions. To be precise,

this sprint will focus on development including the design and the systems according to the storyboard specification established in the *Design* sprint.

3.2.4 Implementation

Implementation will address how to deliver the working sprint into production as well as the outcome of the project for the target users. The delivery method will use an online web browser which will serve as the main medium to share the system to the users. The web-based system will be accessible on both Android and iOS platforms by clicking a specific URL link on devices such as desktops, laptops, and smartphones. The functionality of the web-based system will be thoroughly tested. If any errors are detected, necessary adjustments will be made to ensure the system functions properly and provide a good performance and experience for its user.

3.2.5 Evaluation

The *Evaluation* sprint will address any additional work required based on earlier feedback and comments from users and stakeholders, employing it according to their requirements. Evaluation is conducted periodically from the *Design* sprint to the *Implementation* sprint to ensure that the web-based system achieves all user satisfaction.

3.3 Project Planning

The project *Planning* phase is important in the project management life cycle. To ensure the project's success with sufficient time for development, it is essential to organise tasks and set deadlines accordingly among the team members. In this step, the guideline date will be covered to ensure that the instructions are clear and simple to understand. A Gantt chart will be constructed to provide the view and time frame of each of every phase (W. Clark, 1922). The software development process begins with writing a proposal report to address the case study, analyse problems and propose the solutions after conducting stakeholder interviews. This process takes half a month to gather all user requirements before proceeding to the *Design* phase. The Gantt Chart of this project has been included in the appendix A.

3.4 Software and Hardware Requirements

This subtopic will outline the hardware and software requirements for the development of the Digital Sports Day System in the Web Application (e-tournament).

3.4.1 Hardware Requirements

Table 3.1: The Hardware Requirements for System Development

Hardware	Specification
MSI Laptop	Processor: AMD Ryzen 5 7535HS with Radeon Operating System: 64-bit Memory: 16.0 GB RAM Graphic: 3.30 GHz
Smartphone (Vivo S12s)	Operating System: Funtouch OS 11 Global Memory: 128 GB, 4.00GB RAM Processor: 2.3 GHz Octa-core

The table 3.1 shows the list of hardware requirements needed to develop the system based on a web-based platform including hardware specifications. In this project, every hardware component must effectively perform its functions throughout the development and implementation process without encountering any issue.

3.4.2 Software Requirements

Table 3.2 shows the software needed to develop the Digital Sports Day System for SMK Shahbandaraya Kota Raja. The software must be compatible with the hardware to facilitate the implementation of the system.

Table 3.2: The List of Software Required to Develop the System

Software	Usage

Xampp Control Panel	It is used as a server for system development and for creating PHP files.
VS Code, CSS and JS language	It is used to design the system through the use of Hypertext Preprocessor (PHP) and Hypertext Markup Language (HTML).
Microsoft Office Word	It is used for writing project report.
Microsoft Office Project	It is used to construct a Gantt Chart for the project timeline.

3.5 Chapter Summary

Generally, the selected model to be implemented in this project is Agile in Sprint methodology because it offers a much better and promising delivery for the web-based sports day system for SMK Shahbandaraya Kota Raja. Agile is iterative and one of its major benefits is the ability to identify problems and work on solutions efficiently. Furthermore, all phases of Agile software development have been thoroughly discussed. This chapter also provides an explanation of the application development workflow containing the specific activities conducted within each phase.

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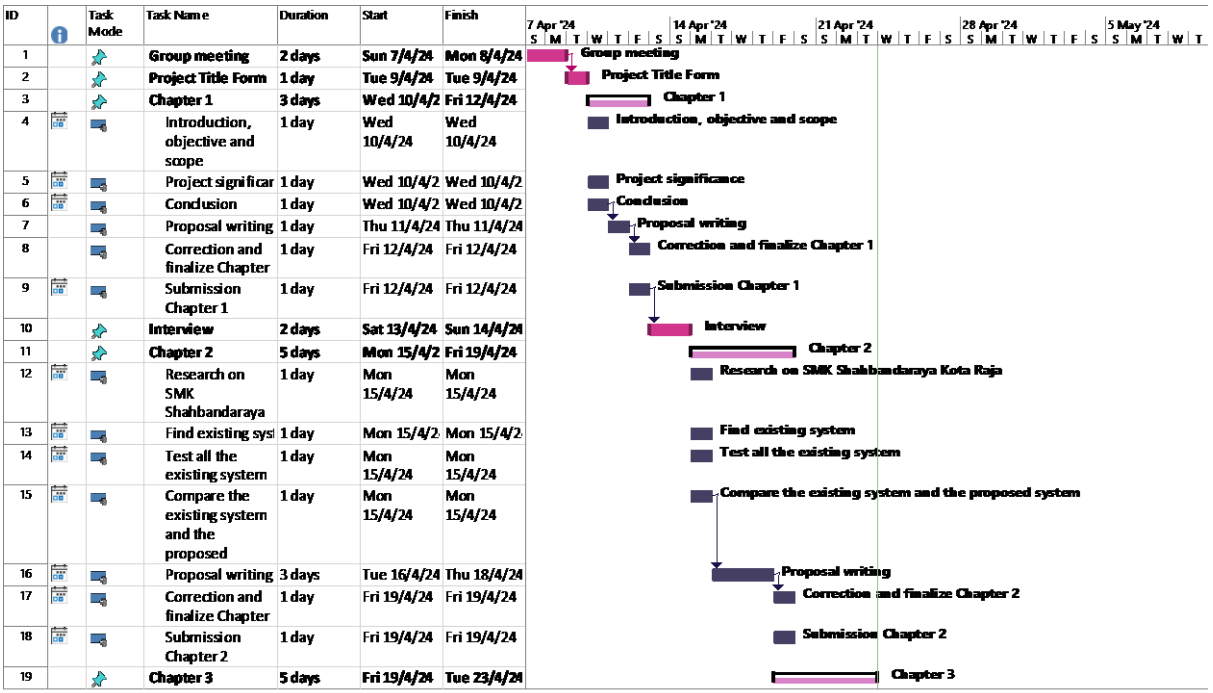
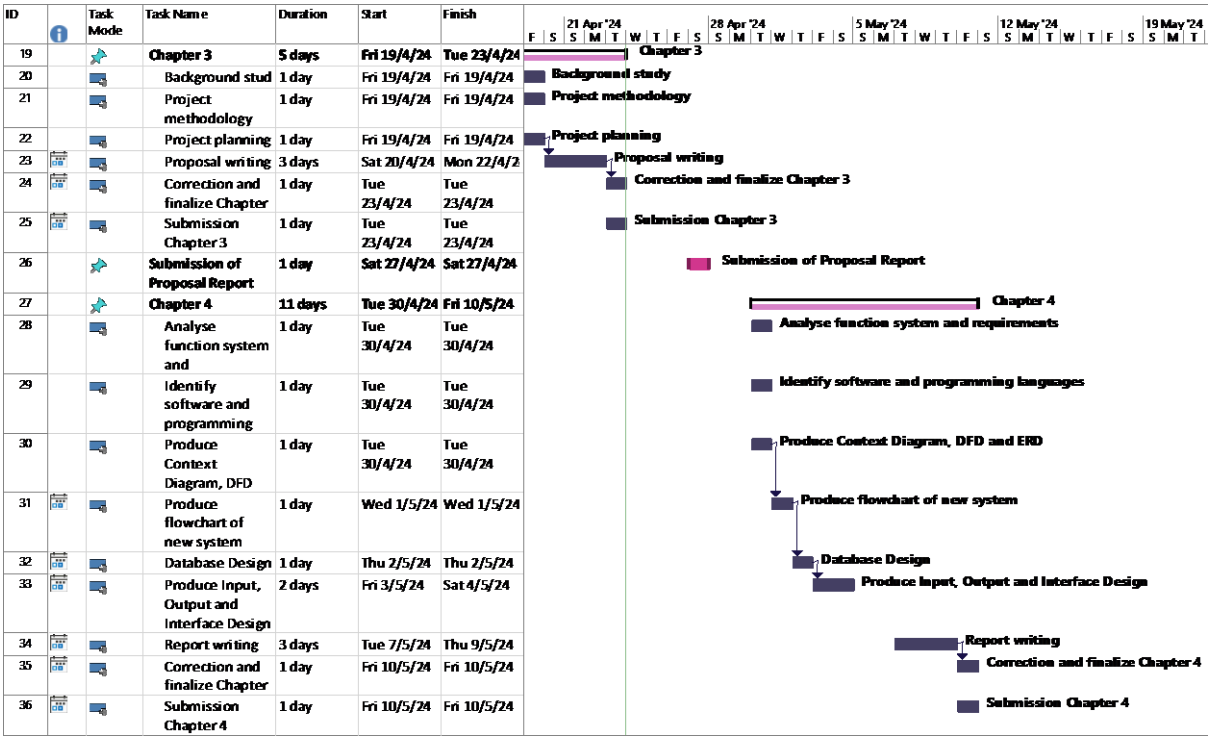
4. Sandepa, P. (21 September, 2021). *Waterfall model vs agile model*. Retrieved from https://medium.com/linkit-intects/waterfall-model-vs-agile-model

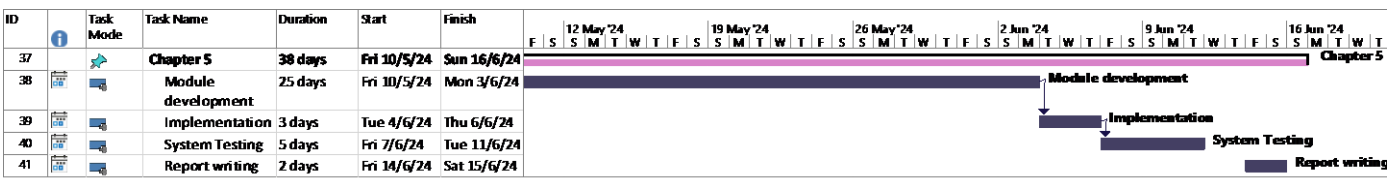
APPENDIX A



ID	Task Mode	Task Name	Duration	Start	Finish
1		**Group meeting**	**2 days**	**Sun 7/4/24**	**Mon 8/4/24**
2		**Project Title Form**	**1 day**	**Tue 9/4/24**	**Tue 9/4/24**
3		**Chapter 1**	**3 days**	**Wed 10/4/2**	**Fri 12/4/24**
4		Introduction, objective and scope	1 day	Wed 10/4/24	Wed 10/4/24
5		Project significar	1 day	Wed 10/4/2	Wed 10/4/2
6		Conclusion	1 day	Wed 10/4/2	Wed 10/4/2
7		Proposal writing	1 day	Thu 11/4/24	Thu 11/4/24
8		Correction and finalize Chapter	1 day	Fri 12/4/24	Fri 12/4/24
9		Submission Chapter 1	1 day	Fri 12/4/24	Fri 12/4/24
10		**Interview**	**2 days**	**Sat 13/4/24**	**Sun 14/4/24**
11		**Chapter 2**	**5 days**	**Mon 15/4/2**	**Fri 19/4/24**
12		Research on SMK Shahbandaraya	1 day	Mon 15/4/24	Mon 15/4/24
13		Find existing sys	1 day	Mon 15/4/2	Mon 15/4/2
14		Test all the existing system	1 day	Mon 15/4/24	Mon 15/4/24
15		Compare the existing system and the proposed	1 day	Mon 15/4/24	Mon 15/4/24
16		Proposal writing	3 days	Tue 16/4/24	Thu 18/4/24
17		Correction and finalize Chapter	1 day	Fri 19/4/24	Fri 19/4/24
18		Submission Chapter 2	1 day	Fri 19/4/24	Fri 19/4/24
19		**Chapter 3**	**5 days**	**Fri 19/4/24**	**Tue 23/4/24**



ID	Task Mode	Task Name	Duration	Start	Finish
19		**Chapter 3**	**5 days**	**Fri 19/4/24**	**Tue 23/4/24**
20		Background stud	1 day	Fri 19/4/24	Fri 19/4/24
21		Project methodology	1 day	Fri 19/4/24	Fri 19/4/24
22		Project planning	1 day	Fri 19/4/24	Fri 19/4/24
23		Proposal writing	3 days	Sat 20/4/24	Mon 22/4/2
24		Correction and finalize Chapter	1 day	Tue 23/4/24	Tue 23/4/24
25		Submission Chapter 3	1 day	Tue 23/4/24	Tue 23/4/24
26		**Submission of Proposal Report**	**1 day**	**Sat 27/4/24**	**Sat 27/4/24**
27		**Chapter 4**	**11 days**	**Tue 30/4/24**	**Fri 10/5/24**
28		Analyse function system and	1 day	Tue 30/4/24	Tue 30/4/24
29		Identify software and programming	1 day	Tue 30/4/24	Tue 30/4/24
30		Produce Context Diagram, DFD	1 day	Tue 30/4/24	Tue 30/4/24
31		Produce flowchart of new system	1 day	Wed 1/5/24	Wed 1/5/24
32		Database Design	1 day	Thu 2/5/24	Thu 2/5/24
33		Produce Input, Output and Interface Design	2 days	Fri 3/5/24	Sat 4/5/24
34		Report writing	3 days	Tue 7/5/24	Thu 9/5/24
35		Correction and finalize Chapter	1 day	Fri 10/5/24	Fri 10/5/24
36		Submission Chapter 4	1 day	Fri 10/5/24	Fri 10/5/24



ID	Task Mode	Task Name	Duration	Start	Finish
37		**Chapter 5**	**38 days**	**Fri 10/5/24**	**Sun 16/6/24**
38		Module development	25 days	Fri 10/5/24	Mon 3/6/24
39		Implementation	3 days	Tue 4/6/24	Thu 6/6/24
40		System Testing	5 days	Fri 7/6/24	Tue 11/6/24
41		Report writing	2 days	Fri 14/6/24	Sat 15/6/24

ID	Task Mode	Task Name	Duration	Start	Finish
42		Finalize Chapter	1 day	Sun 16/6/24	Sun 16/6/24
43		Submission Chapter 5	1 day	Sun 16/6/24	Sun 16/6/24
44		Evaluate the syster	3 days	Mon 17/6/2	Wed 19/6/2
45		Submission of Final Report	1 day	Thu 20/6/24	Thu 20/6/24
46		Project presentatic	1 day	Sun 23/6/24	Sun 23/6/24