# SISTEM STANDARD KECERGASAN FIZIKAL KEBANGSAAN

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**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

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# SISTEM STANDARD KECERGASAN FIZIKAL KEBANGSAAN

**GUNASUNDRI A/P RAJUNAN**

This report is submitted in partial fulfilment of the requirements for the
Bachelor of Computer Science (Database Management)

**FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY**
**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**
**AUGUST 2016**

**DECLARATION**

I hereby declare that this project report entitled

**System Standard Kecergasan Fizikal Kebangsaan Sekolah**

is written by me and is my own effort and that no part has been plagiarized without citations.

STUDENT : _____ Date: _____

(GUNASUNDRI A/P RAJUNAN)

I hereby declare that I have read this project report and found this project report is sufficient in term of the scope and quality for the award of Bachelor of Computer Science (Database Management) With Honours.

SUPERVISOR : _____ Date: _____

(DR.NORASWALIZA BINTI ABDULLAH)

**DEDICATION**

To my parents for all their love and support and putting me through the best education possible. I appreciate their sacrifices and I wouldn't have been able to get to this stage without them.

To my siblings whom are always support and encourage me when I'm stressed up and the contribution they has done to complete this project.

To my special man whom been a backbone for me to complete this project and motivated me when I'm needed.

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# ABSTRACT

*Sistem Standard Kecergasan Fizikal Kebamgsaan* (e-SEGAK) is an online web based system which is developed for Sekolah Menengah Kebangsaan Telok Mas, Melaka. As per education ministry, all school need to undergo the physical fitness activities at school starting from standard 4 to form 5 students. This system is developed upon the school management request to manage and calculate the student's information and Body Mass Index (BMI). By using the system, school management can prevent data loss of the physical fitness information of the students. Besides that, the system can keep track the information of the student fitness level in a report format and can generate an analysis report based on the student's physical fitness record. This project is done by using the Agile, which is a System Development Life Cycle (SDLC) methodology.

# ABSTRAK

Sistem Standard Kecergasan Fizikal Kebamgsaan (SEGAK) adalah sistem berasaskan web yang dibangunkan untuk Sekolah Menengah Kebangsaan Telok Mas, Melaka. Selaras dengan program Kementerian Pelajaran Malaysia, semua sekolah perlu menjalani aktiviti kecergasan fizikal di sekolah bermula dari pelajar darjah 4 hingga tingkatan 5. Sistem ini dibangunkan atas permintaan pengurusan sekolah untuk mengurus maklumat pelajar dan dan mengira Indeks Jisim Badan (BMI) pelajar. Dengan menggunakan sistem ini, pengurusan sekolah boleh mengelakkan kehilangan data kecergasan fizikal pelajar. Selain itu, sistem boleh menyimpan dan mengesan maklumat tahap kecergasan pelajar dalam bentuk format laporan dan boleh menjana laporan analisis berdasarkan rekod kecergasan fizikal pelajar. Projek ini dilakukan dengan menggunakan kaedah Agile iaitu salah satu metodologi (SDLC).

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| | |
|---|---|
| SEGAK | *Standard Kecergasan Fizikal Kebangsaan Sekolah* |
| ERD | Entity Relationship Diagram |
| BMI | Body Mass Index |
| GUI | Graphic User Interface2 |

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# CHAPTER I

# INTRODUCTION

## 1.1 Project Background

Malaysian government has come out with a plan which is called National Physical Fitness Standard for Students School Association (*Standard Kecergasan Fizikal Kebangsaan Untuk Murid Sekolah Malaysia - SEGAK*). This plan is to increase student's fitness level to do their daily activity without any tiredness. This Physical Fitness Standard consists of four (4) components which are *Naik Turun Bangku, Tekan Tubi, Ringkuk Tubi Separa* and *Jangkauan Melunjur*. All students from standard 4 to form 5 need to undergo these fitness activity. These fitness standard activities will be carried out twice in a year, most probably on March and August.

Sekolah Menengah Kebangsaan Telok Mas is interested to come out with a system to record the Physical Fitness Standard score of their students. Currently the school using manual paper-based system to record the student's fitness score and Microsoft Excel to calculate the total score for each student.

The school facing few problems with the current less computerized method. Firstly, there are many chances to lose the information which is recorded in Excel file.

Besides that, teachers have difficulties to keep track record of the transferred students from other schools.

To overcome these problems, a system called "*Sistem Standard Kecergasan Fizikal Kebangsaan Untuk Murid Sekolah (e-SEGAK)*" will be developed.

## 1.2 Problem statements

- The school management still using excel file to store the student's physical fitness information which is less systematic.
- The school teacher's having problem to keep track the historical data of physical fitness information of the student.
- Teachers are having problem to do analysis of the physical fitness record.

## 1.3 Objective

- To develop a database information system to efficiently manage the physical fitness information of the students.
- To keep track the information of the student fitness level in a report format.
- To generate analysis reports based on the students physical fitness record.

## 1.4 Scope

*Sistem Standard Kecergasan Fizikal Kebangsaan Untuk Murid Sekolah Malaysia - SEGAK* will be used by the management of Sekolah Menengah Kebangsaan Telok Mas. The management here include the headmaster, clerk and teachers. For this

system there would be four (4) different users. They are higher management, clerk, physical education teachers and physical education coordinator.

**1) User**

**i) Higher Management team**

- Management team can view teachers' personal information such as teachers' ID, name, contact numbers and their position.
- Other than that, management team also can view analysis reports for a selected session.

**ii) Clerk**

- Clerk can insert and update student's information such as student identification number, name, age, class for current year, physical activity marks, height and weight of the students.
- Clerk also can insert and update teacher's information such as name, position, office number and mobile number.
- Clerk also can insert and update student's physical fitness information like physical activities reading, physical activities marks and their achievement.
- Clerk can view report on each student's Body Mass Index (BMI), and physical fitness information and the analysis reports as well.
- Cleark also can assign teacher to a class.

**iii) Physical Education Teachers (*Guru Pendidikan Jasmani*)**

- Physical Education teachers can insert and update student's personal information and physical fitness information of their class students.

- Physical Education teachers can view report for each student's Body Mass Index (BMI), and physical fitness information.

**iv) Physical Education Coordinator (*Guru Panitia Pendidikan Jasmani*)**

- Physical Education Coordinators can insert and update student's information such as student identification number, name, age, class for current year, physical activity marks, height and weight of the students and Body Mass Index (BMI).
- Physical Education Coordinators can view teachers' personal information.
- Physical Education Coordinators view report on student's personal information and analysis report.

**2) System**

- System can insert and update student's personal information such as name, age, class, and reading of the task or activity.
- System will calculate Body Mass Index (BMI) of students based on the height and weight recorded by the user.
- System will generate the mark for each task based on the reading recorded by the user.
- System will generate the total score of a student based on the mark of each task.
- System will generate the student achievement level based on the total score gained by student.
- System can generate fitness analysis report based on identification number, gender, class (form) and session.

## 1.5 Project significance

By developing this system, school teachers and management will get few benefits. It's save the time of the coordinator to get records of physical fitness information from all physical education teachers. Besides that, the teachers can easily analyse the student's fitness level by age, gender, class and year. Through the system users can also print the report for each student easily.

## 1.6 Expected Output

At the end of the project, it's expected to have an automatic system that can produces needed reports to the users. Besides that, the system also should be able to display the students' marks for each task or activity ("*markah ujian fizikal*") that mention in part 1.1 in this chapter. Below are the expected output of the system:-

i) Calculate the marks for each student test.
ii) Generate report for each student.
iii) Produce physical fitness analysis report based on grade and gender.

## 1.7 Conclusion

To summarize, this chapter have discussed the basic need for the project. At the end of the project, the system have to meet all the needs that requested by the user. For that this chapter will be a guide line for the developer to come out with a good product.

# CHAPTER II

# PROJECT METHODOLOGY AND PLANNING

## 2.1 Introduction

This chapter will discuss about the methodology and planning for the project that would be developed. Every project developer need to come out with a methodology that is related or suitable for the project. This is to make sure the project is developed base on the Database Life Cycle (DBLC). Other than that, for the planning developer need to draft a Gantt chart and Milestone. These Gantt chart and Milestone are to make sure the project can be completed on the given time of period. This will be helpful to finish the project on time.

## 2.2 Project Methodology

Agile Methodology is used to develop this "*Sistem Standard Kecergasaan Fizikal Kebangsaan untuk Murid Sekolah (e-Segak)*". The time period for this project is four (4) months. Since Agile methodology is used for small project, it will be suitable for this project. Besides that, Agile methodology focus on three (3) main component, which are resources, time and features. Basically resources and time are fixed in this methodology. Developer need to use the given resources and allocated time to give the best features which would be an estimated value.

Agile model allow the backward features; which mean developer can change the decision of the previous phase easily. Other advantage of Agile model would be, the user feedback. The user has rights to change the requirement at any time by using this model.

There are seven (7) phases in Agile methodology; Conception (requirement gathering), initiation (planning), analysis, design, construction (implementation), testing and deployment.

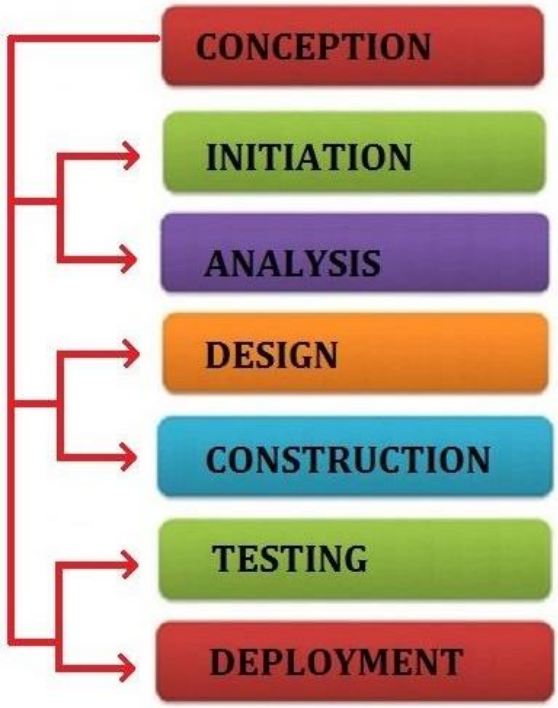


**Figure 2.1 Agile Methodology**

Conception is the first phase in the Agile Database Life Cycle (DBLC). Conception also known as requirement gathering in some other DBLC. In this conception phase user will collect the information needed from the client which is Sekolah Menengah Kebangsaan Telok Mas teachers, to plan the basic flow of the current and to-be develop system in the next phase. The developer have to meet the teachers, in order to collect the user's requirement to identify and classify the

functional and non-functional requirements. In this phase, user's contribution will help the developer to make any important decision about the to-be develop system.

The second phase would be initiation; also known as planning. Once the developer gathered the needed requirements from the client or user, they have to plan what the system can do, how the flow of the system will work and who can use the system. This is the phase where the developer need to submit a proposal to the supervisor. The proposal must consist of background of the project, problem faced by user, and the objective of to-be develop system.

The third phase would be analysis. In this phase developer should come out with flow charts for each users mentioned in the part 1.4 in chapter 1 and Data Flow Diagrams (DFD) for each main functions. This will ease the developer work in the following phases. The implementation of this phase will be discussed in Chapter 3 of this thesis. Both the second phase and third phase will be take place at a time in Agile DBLC.

The fourth phase would be design. In this design phase developer will come out with Entity Relation Diagram (ERD) based on the flow chart and DFD designed in the previous phase. Besides that, the system architecture design and graphical user design (GUI) also will be take place in this phase. Data dictionary is also another task that should consider in this phase. The task of this phase will be discussed in Chapter 4 of this thesis.

The fifth phase would be construction; also known as implementation. This is the phase where developer start to implement the designs that they draft in previous phases like ERD, DFD, and Context Diagram. System will be complete in this phase. The task of this phase will be discussed in Chapter 5 of this thesis. The design phase and construction phase will be take place at the same time in Agile methodology.