JUDUL : **Co-curriculum Management System.**

SESI PENGAJIAN :**2012/2013 ,**Saya **Syamsul Izwani Bin A Bakar**

mengaku membenarkanvtesisvProjekvSarjanavMuda ini disimpan di Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dengan syarat-syarat kegunaan seperti berikut:

1. Tesis dan projek adalah hak milik Universiti Teknikal Malaysia Melaka.
2. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan untuk tujuan pengajian sahaja.
3. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan tesis ini sebagai bahan pertukaran antara institusi pengajian tinggi.
4. ** Silatandakan (/)

___SULIT (Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub di dalam AKTA RAHSIA RASMI 1972)

___TERHAD (Mengandungi maklumat TERHAD yang telah ditentukan oleh organisasi/badan di mana penyelidikan dijalankan)

___TIDAK TERHAD

_____ _____

(TANDATANGAN PENULIS) (TANDATANGAN PENYELIA)

(Syamsul Izwani Bin A Bakar) (Yahya Bin Ibrahim)

Alamat tetap :
318 Felda Tenggaroh 1,
86810 Mersing, Johor.

Tarikh : _____ Tarikh : _____

© Universiti Teknikal Malaysia Melaka

CO-CURRICULUM MANAGEMENT SYSTEM

SYAMSUL IZWANI BIN A BAKAR

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

© Universiti Teknikal Malaysia Melaka

DECLARATION

I hereby declare that this project report entitled

CO-CURRICULUM MANAGEMENT SYSTEM

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

STUDENT : _____ Date: _____
(SYAMSUL IZWANI BIN A BAKAR)

SUPERVISOR : _____ Date: _____
(YAHYA BIN IBRAHIM)

© Universiti Teknikal Malaysia Melaka

DEDICATION

To my lovely parent and family, my supportive supervisor which is Mr Yahya Bin Ibrahim, my friends especially 3BITD 2012/2013 and for those who had given me the inspiration and spirit to move on and not to give up for completing this project on the schedule.

© Universiti Teknikal Malaysia Melaka

ACKNOWLEDGEMENT

In the name of Allah, the Most Gracious and the Most Merciful. Alhamdulillah, all praises to Allah for the strengths and His blessing in completing Projek Sarjana Muda. Special appreciation goes to my supervisor, Mr Yahya Bin Ibrahim for his encouragement, guidance and constant support. His invaluable help of constructive comments and suggestions throughout thesis works have contributed to the success of this research.

Sincerely thanks to my beloved friends and parents who have been giving me endless encouragement and motivation throughout this project. To those who indirectly contributed in this project, your kindness means a lot to me. Thank you very much.

© Universiti Teknikal Malaysia Melaka

ABSTRACT

Co-curriculum Management System has been developed using Java Server Page and PL / SQL as a programming language and a graphical user interface as well as using the Oracle 10g database. The system is developed to facilitate the work of teachers in providing student's marks, activity, and report in co-curricular activities. The system allows teachers keep records of student co-curricular activities with ease and marks will be calculated automatically. Teachers can also record all meetings held and taking attendance through this system. The system is also able to produce an annual report of student's co-curricular and also produce certificates to students.

© Universiti Teknikal Malaysia Melaka

ABSTRAK

Sistem Pengurusan Kokurikulum telah dibangunkan dengan menggunakan Java Server Page dan PL / SQL sebagai bahasa pengaturcaraan dan antara muka pengguna grafik serta menggunakan pangkalan data Oracle 10g. Sistem ini dibangunkan untuk memudahkan kerja-kerja guru dalam menyediakan markah pelajar, aktiviti, dan laporan dalam aktiviti ko-kurikulum. Sistem ini membolehkan guru-guru menyimpan rekod aktiviti kokurikulum pelajar dengan mudah dan markah akan dikira secara automatik. Guru-guru juga boleh merekod semua perjumpaan yang diadakan dan mengambil kehadiran melalui sistem ini. Sistem ini juga dapat menghasilkan laporan tahunan pelajar kokurikulum dan juga mengeluarkan sijil kepada pelajar.

© Universiti Teknikal Malaysia Melaka

TABLE OF CONTENT

INTRODUCTION……..…….....1
1.1 PROJECT BACKGROUND.....…….....1
1.2 PROBLEM STATEMENT(S)…….....…….....2
1.3 OBJECTIVE …….....…….....3
1.4 SCOPES …….....….....5
1.5 CONCLUSION……...…….....5

ANALYSIS …….....……...6
2.1 INTRODUCTION …….....6
2.2 MANUAL SYSTEM……..……..6
2.3 PERISIAN PENILAIAN AKTIVITI KOKURIKULUM SEKOLAH (PPAKS) …….....12
2.4 USE CASE DIAGRAM .....…….....15
2.5 USER SYSTEM INTERFACE…….....……...16
2.6 CONCLUSION…….....…….....25

DESIGN……..……...26
3.1 INTRODUCTION…….....……26
3.2 DESIGN OF PPAKS ……...……....26
3.2.1 Entity Relational Diagram (ERD)…….....……..26
3.2.2 Example of Data…….....……..27
3.3 DESIGN OF CO-CURRICULUM MANAGEMENT SYSTEM…….....……...29
3.3.1 Entity Relational Diagram …….....29
3.3.1 Example of Data .....…….....29
3.4 DATABASE DESIGN FOR CO_CURRICULUM MANAGEMENT SYSTEM……30
3.4.1 Conceptual Database Design …….....30
3.4.1 Logical Database Design …….....36
3.4.1 Physical Database Design …….....37
3.5 CONCLUSION…….....….41

IMPLEMENTATION…….....……....42
4.1 INTRODUCTION…….....…….…….....42
4.2 PREPARING DATA FOR CO-CURRICULUM MANAGEMENT SYSTEM …….....….42
4.2.1 Student …….....……...42
4.2.2 Koku_Type …….....……43
4.2.3 Koku…….....…43
4.2.4 Teacher …….....44
4.2.5 Student_Koku …….....……44
4.2.6 Teacher_Koku ……...45
4.2.7 Position …….....46
4.2.8 SK_Position ……..…47
4.2.9 Stage …….....47
4.2.10 Involvement …….....48
4.2.11 SK_Involvement …….....…...49
4.2.12 Achievement …….....….50
4.2.13 SK_Achievement …….....….51

© Universiti Teknikal Malaysia Melaka

4.2.14 Meeting……51
4.2.15 Attendance ……52
4.3 CO-CURRICULUM MANAGEMENT SYSTEM ……53
4.3.1 Login ……54
4.3.2 Co-curricular Meetings and Student Attendance……55
4.3.3 Student Position ……59
4.3.4 Student Involvement ……63
4.3.5 Student Achievement ……67
4.4 REPORTING ……68
4.5 CONCLUSION ……86

TESTING……87
5.1 INTRODUCTION ……87
5.2 TEST STRATEGY……87
5.3 WHITE BOX TESTING……87
5.3.1 Unit Testing……87
5.3.1.1 Execution Testing ……88
5.3.1.1.1 Conditional Coverage ……88
5.3.1.1.2 Loop Coverage……89
5.3.1.2 Operations Testing……89
5.3.1.3 Mutation Testing……90
5.3.2 Integration Testing……90
5.4 BLACK BOX TESTING……92
5.4.1 Test Data……92
5.5 TEST RESULT AND ANALYSIS……93
5.6 CONCLUSION ……95

CONCLUSION……96
6.1 OBSERVATION ON WEAKNESSES AND STRENGTHS ……96
6.1.1 System Strengths……96
6.1.2 System Weaknesses……96
6.2 PROPOSITIONS FOR IMPROVEMENT……97
6.3 CONTRIBUTION ……97
6.4 CONCLUSION……97

© Universiti Teknikal Malaysia Melaka

CHAPTER I

INTRODUCTION

1.1 Project Background

Co-curricular activities that conducted in the school are an integral part of curricular activities. This activity should be followed by every student whether it is performed indoor or outdoor of the classroom. This activity should be followed by students to enable them to acquire as much as experience, skills and knowledge to expanding their talent. This is also based on the assumption that every student should be given the opportunity to be able to shine to the development of talent, passion, mental, physical, personality, spiritual and a positive social.

"The National Curriculum is an educational program that includes curriculum and co-curricular activities which encompasses all the knowledge, skills, norms, values, elements, culture and beliefs to help develop a pupil with fully respect to the physical, spiritual, mental and emotional as well as to inculcate and develop desirable moral values and to transmit knowledge" (Regulation 3 (1) of the regulations, 1997).

The school needs to pay attention in the balance between academic and co-curricular activities. In 2006, a meeting of the Cabinet Committee has decided to take into account the student's involvement in co-curricular activities as a condition of admission to Higher Education Institution (IPTA) by 10 percent.

In order to fulfill the government's call in development of national education through co-curricular activities, teacher's tasks also increased. Teachers must record

© Universiti Teknikal Malaysia Melaka

each of the student's co-curricular activities. Along with the development of the country, this kind of work no longer must be done manually, but it should be replaced by using a systematic process to ease the burden for teachers. Based on this problem, Co-Curriculum Management System was developed. By using this system, the task of teachers can be reduced without having to write any co-curricular records manually.

Co-Curriculum Management System is developed to help the teachers manage co-curricular activities efficiently. With this system, all the tasks that are done manually will be transformed into digitalized. This system allows teachers keep records of student co-curricular activities with ease and scoring will be calculated automatically. Teachers can also record all meetings held and take attendance through this system. The system is also able to produce an annual report of student co-curricular and issue a certificate to the students. Other than that, the Co-Curricular Senior Assistant Teacher also can use this system to assign teacher's advisor for each type of co-curricular whether clubs and associations, sports and games or uniformed bodies. For students, they can use this system to register the clubs and societies, sports and games or uniformed bodies that they are passionate about and can see the current scores for each co-curricular which they are join.

1.2 Problem Statement

There are a few of problem statements were identified and should be resolved using this system. Among of these problems are as follows:

I. Manually co-curricular evaluation records

Co-curricular management in schools nowadays are still using the manually management methods. This method raises various drawbacks such as the use of many forms and does not have access to student attendance reports efficiently. Each student will be provided with a co-curricular evaluation records book. In the record’s books will be written all information about co-curricular activities such as meetings and attendance as well as co-curricular marks. This record’s book will be kept throughout the school session. Each year the book will be

© Universiti Teknikal Malaysia Melaka

reused to record annual student's co-curricular activities. The co-curricular records that be kept manually may be lost or damaged. Therefore, a more systematic and efficient method should be used.

II. Manual record of student activities.

Due to too many records to be filled manually, the teachers also need more work to do. Teachers must sign a co-curricular reports book for each student's at each meeting to confirm the presence of the students. This leads to do co-curricular activities with students becoming shorter as time was wasted trying to fill the student's attendance record.

III. Complicated marks calculation

The calculation of co-curricular marks involves some aspect that is position held by the student, participation in all co-curricular activities, achievements earned in each activity participated and attendance for each co-curricular meeting. All these aspects will be combined to calculate the overall score in each type of curriculum either uniformed bodies, clubs and associations or sports and games. If one of these aspects forgotten to be recorded, it will affect a student's co-curricular marks. In addition, the scores filled by the teacher maybe not match with the position, involvement and student achievement. A system should be developed to help teachers in dealing with co-curricular marks calculation in accordance with aspects of a real scoring based on the attendance, position, participation and achievement of all students.

1.3 Objective

To complete this project, several objectives need to be fulfilled. This objective will be drive towards the success of this project. The objective of this project is:

I. Provide a systematic co-curricular record.

To overcome the problem of too many records and forms to be filled and be kept manually, so this system is developed. All information will be stored in the

© Universiti Teknikal Malaysia Melaka

database. Teachers do not have to worry about the problems damaged or lost of records because each of the data will be stored in a secure database and have a backup. Teachers will also be easier to find the data they want related to co-curricular. Co-curricular evaluation's records book does not need to be used anymore because was replaced with a more convenient and secure system.

II. To record co-curricular meeting and student attendance.

Every co-curricular meeting, students no longer need to bring co-curricular evaluation's records book to seek attendance's conformation from the teacher. Teachers just need to bring a laptop or smart phone to take student's attendance. If there is no internet connection, teachers just need to record the date and time of meetings as well as the names of absent students and can fill in the information through the system in their offices. With this system, time is no longer wasted by signing each of students reports book.

III. Automated co-curricular marks calculation.

Teachers do not need to fill in the marks for each attendance, position, involvement and achievement of the student one by one. Teachers just need to choose the position, involvement and achievement of the student, and the system will automatically calculate the marks. Every mark for the position, involvement and achievement of student has been stored in the database according to the actual scoring aspect. For the attendance, the total marks will be calculated based on attendance meetings attended by the student. Marks for attendance, position, involvement and achievement will be automatically added to produce an overall co-curricular score. Teacher's work was reduced without having to calculate the co-curricular student's marks one by one.

IV. Generate annual report of co-curricular student's marks.

After obtaining an overall co-curricular score for each student, the annual co-curricular score's report will be generated and can be printed in PDF. Grades and

© Universiti Teknikal Malaysia Melaka

GPA for each co-curricular score also be produced in the report. Students can also see their co-curricular marks without seeing the teacher.

V. To generate a certificate.

The system will be able to produce certificates for each position, involvement and achievement of students in each co-curricular automatically. Certificates can be printed in PDF.

1.4 Scope

This system can be used by:

- Student
- GPK Co-curriculum
- Teacher

1.5 Conclusion

Chapter I briefly explains and introduces the project. It includes the project background, problem statement as well as objective and scope of this project. In order to addresses the problem statements, Co-curriculum Management System is proposed.

© Universiti Teknikal Malaysia Melaka

CHAPTER II

ANALYSIS

2.1 Introduction

The analysis stage is the second phase of SDLC where the entire system is defined in detail. This stage is intended to tell the project where it is going so that it can take an appropriate road which indeed leads to the project's delivering desired value. Analysis should come early in any project, and the most important part of that analysis is the problem analysis and requirements analysis.

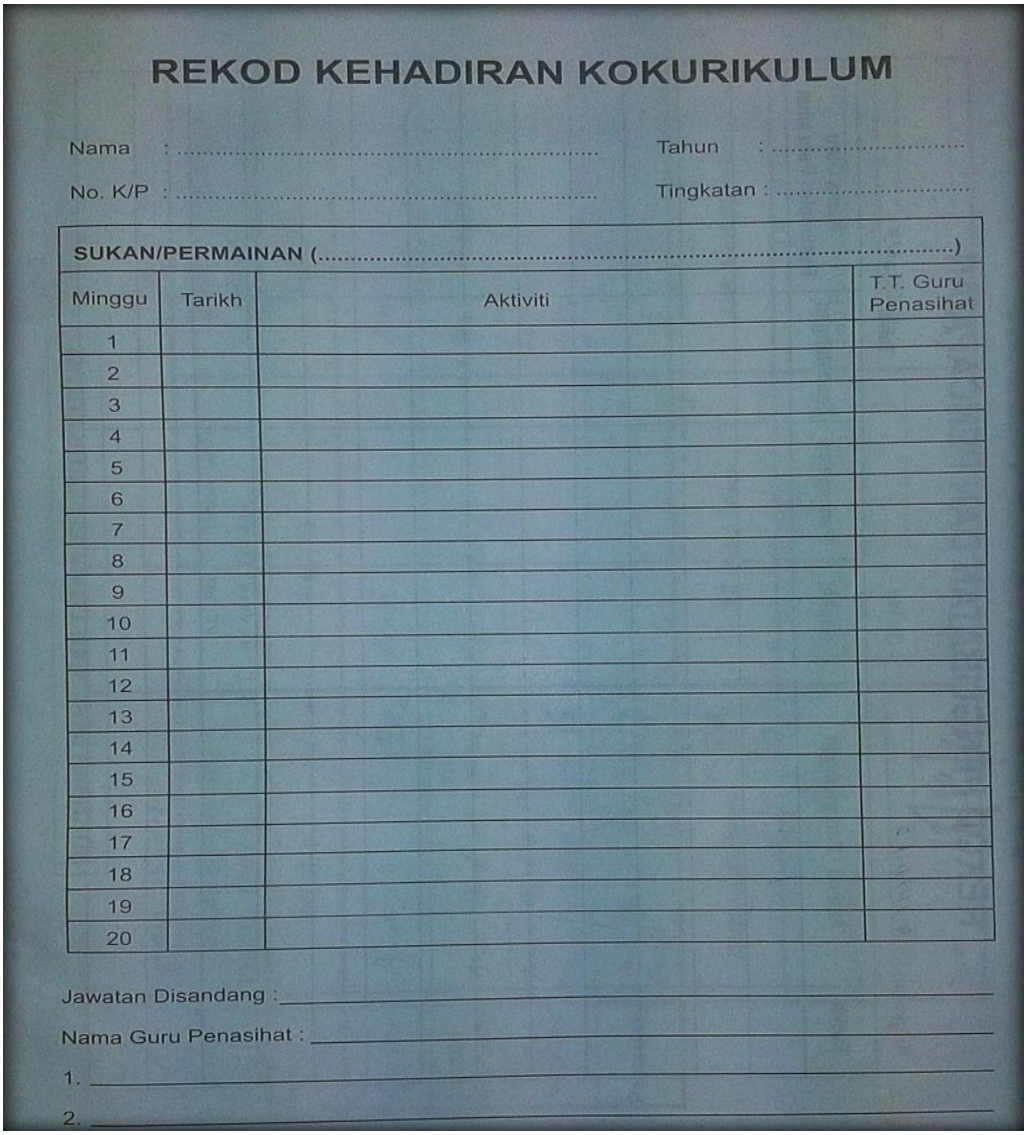
The problem statement in chapter 1 will be explains more details. In this stage also explains the problem faced by the manual system and the existing system. The problem will be analyzed to improve this system. The solution to this problem will be sought and will be implemented in this system. The current situation will be explored to match with this system. All of the requirements will be explored deepest so that any problems in the development process can be avoided.

The analysis stage is very important because it will be helpful in the decision making and reduce cost and time during the development and implementation stage.

2.2 Manual System

Most of schools still use the manual systems in the management of co-curricular activities. Many forms to be filled manually and must be kept in order not damaged or lost. Usually, the school used co-curricular evaluation's records book to record all co-curricular activities. The example of co-curricular evaluation’s records book can be seen in Appendix A. Some problems using manual systems have been identified.

© Universiti Teknikal Malaysia Melaka



REKOD KEHADIRAN KOKURIKULUM

Nama : ..... Tahun : .....

No. K/P : ..... Tingkatan : .....

SUKAN/PERMAINAN (.....)

Minggu	Tarikh	Aktiviti	T.T. Guru Penasihat
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

Jawatan Disandang : _____

Nama Guru Penasihat : _____

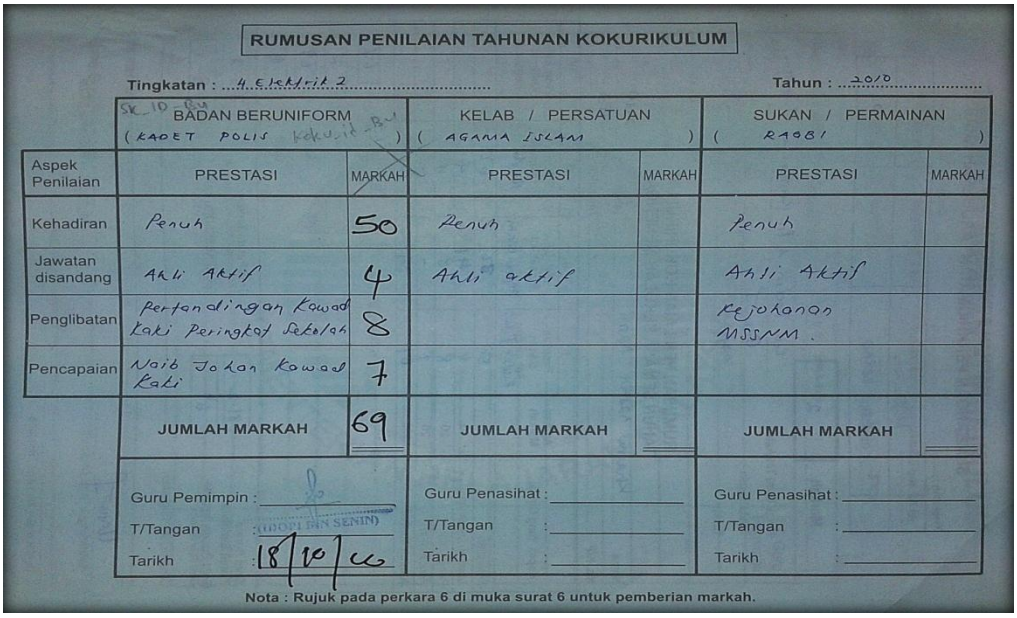
1. _____

2. _____

Figure 2.1 : Manually co-curricular attendance records.

Based on Figure 2.1, the problem that occurs is every time when co-curricular meetings was held, the teacher need to write the date of the meeting, the activity and signature to the manual report for all student. The time will be wasted here to write the same things. If the student did not attend the meeting, they maybe still can ask their friend to bring their report.

© Universiti Teknikal Malaysia Melaka



RUMUSAN PENILAIAN TAHUNAN KOKURIKULUM

Tingkatan : 4 Elektrik 2 Tahun : 2010

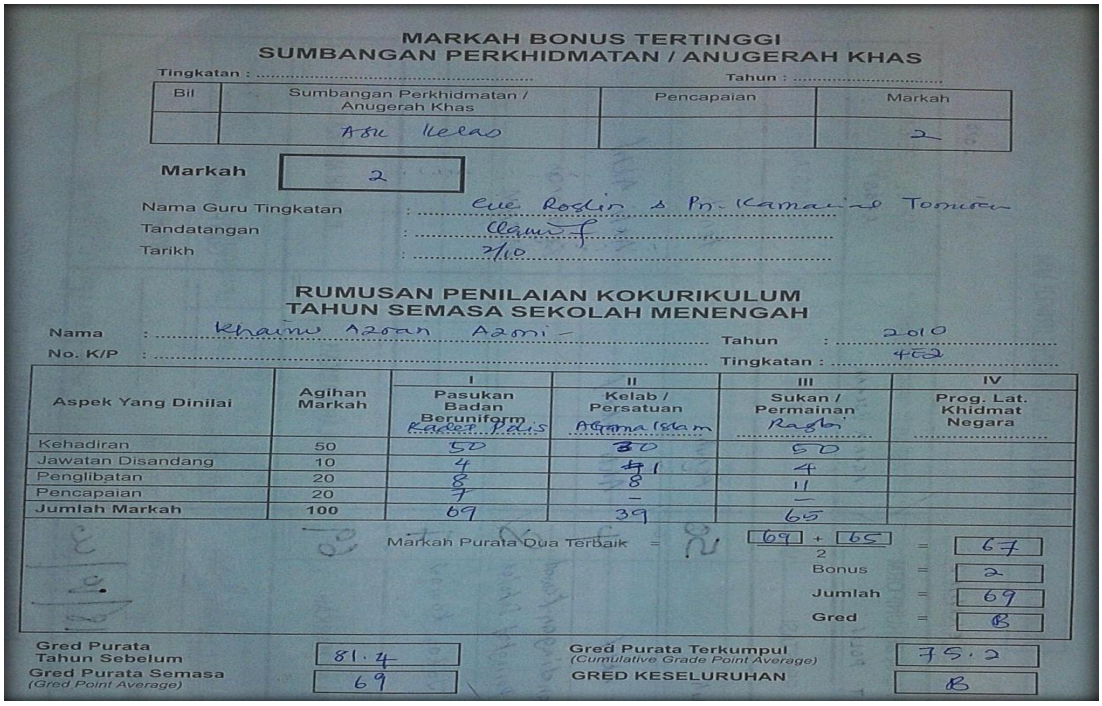
Aspek Penilaian	BADAN BERUNIFORM (KADET POLIS) PRESTASI	MARKAH	KELAB / PERSATUAN (AGAMA ISLAM) PRESTASI	MARKAH	SUKAN / PERMAINAN (RAGBI) PRESTASI	MARKAH
Kehadiran	Penuh	50	Penuh		Penuh	
Jawatan disandang	Ahli Aktif	4	Ahli aktif		Ahli Aktif	
Penglibatan	Pertandingan Kawad kaki Peringkat Sekolah	8			Kejohanan MSSNM.	
Pencapaian	Naib Johan kawad kaki	7				
	JUMLAH MARKAH	69	JUMLAH MARKAH		JUMLAH MARKAH	
	Guru Pemimpin : T/Tangan : Tarikh : 18/10/16		Guru Penasihat : T/Tangan : Tarikh :		Guru Penasihat : T/Tangan : Tarikh :	

Nota : Rujuk pada perkara 6 di muka surat 6 untuk pemberian markah.

Figure 2.2 : Manually summary of the annual co-curricular evaluations.

Figure 2.2 shows how teacher needs to write student performance and give marks based on the performance. Sometimes the marks did not match the student performance. Bit error in filling and calculating will affect the overall scores, grades and GPA of the students.

© Universiti Teknikal Malaysia Melaka



MARKAH BONUS TERTINGGI
SUMBANGAN PERKHIDMATAN / ANUGERAH KHAS

Tingkatan : ..... Tahun : .....

Bil	Sumbangan Perkhidmatan / Anugerah Khas	Pencapaian	Markah
	Asu Kelas		2

Markah 2

Nama Guru Tingkatan : Cue Roslin & Pn. Kamarial Tomiran
Tandatangan : [signature]
Tarikh : 2/10

RUMUSAN PENILAIAN KOKURIKULUM
TAHUN SEMASA SEKOLAH MENENGAH

Nama : Khairu Azran Azmi - Tahun : 2010
No. K/P : ..... Tingkatan : 4E2

Aspek Yang Dinilai	Agihan Markah	I Pasukan Badan Beruniform Kadet Polis	II Kelab / Persatuan Agama Islam	III Sukan / Permainan Rasbi	IV Prog. Lat. Khidmat Negara
Kehadiran	50	50	30	50	
Jawatan Disandang	10	4	1	4	
Penglibatan	20	8	8	11	
Pencapaian	20	7	–	–	
Jumlah Markah	100	69	39	65	

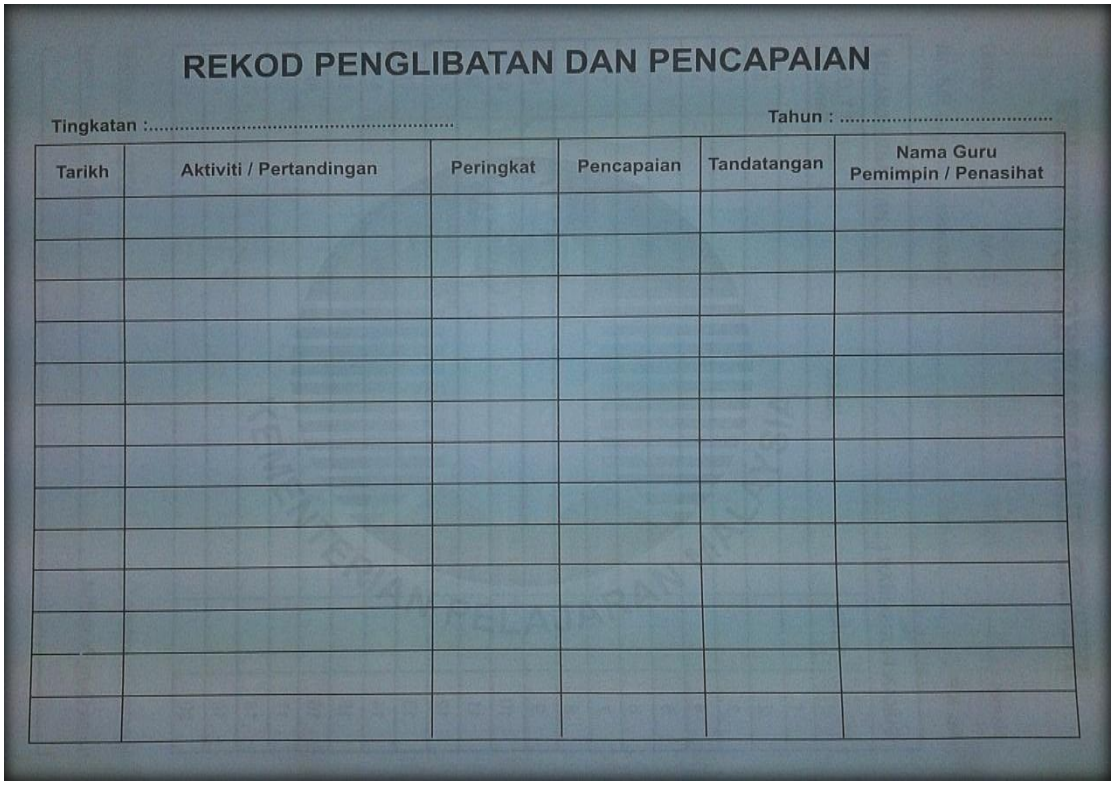
Markah Purata Dua Terbaik = (69 + 65) / 2 = 67
Bonus = 2
Jumlah = 69
Gred = B

Gred Purata Tahun Sebelum 81.4
Gred Purata Semasa (Gred Point Average) 69
Gred Purata Terkumpul (Cumulative Grade Point Average) 75.2
GRED KESELURUHAN B

Figure 2.3 : Manually co-curricular mark's calculation

In Figure 2.3 shows the teachers write all the aspects mark for all the three co-curricular units that uniforms bodies, club and association and sport and games. From all the total mark will be choose top 2 highest marks and will be calculate to get the best average mark. After that grade and GPA will be given based on the mark.

© Universiti Teknikal Malaysia Melaka



REKOD PENGLIBATAN DAN PENCAPAIAN

Tingkatan :..... Tahun : .....

Tarikh	Aktiviti / Pertandingan	Peringkat	Pencapaian	Tandatangan	Nama Guru Pemimpin / Penasihat

Figure 2.4 : Manually record of involvement and achievement.

Figure 2.4 shows the record of involvement and achievement of student. Teachers also need to write all students involvement and achievement. Based on this form, teacher will provide a certificate for student. Sometime teacher will forget to write the student's involvement and achievement.

© Universiti Teknikal Malaysia Melaka

Figure 2.5 shows the process flow to calculate total co-curricular marks for each units of co-curricular using manual system. All the details and mark will be insert using manual form and must be calculated manually.

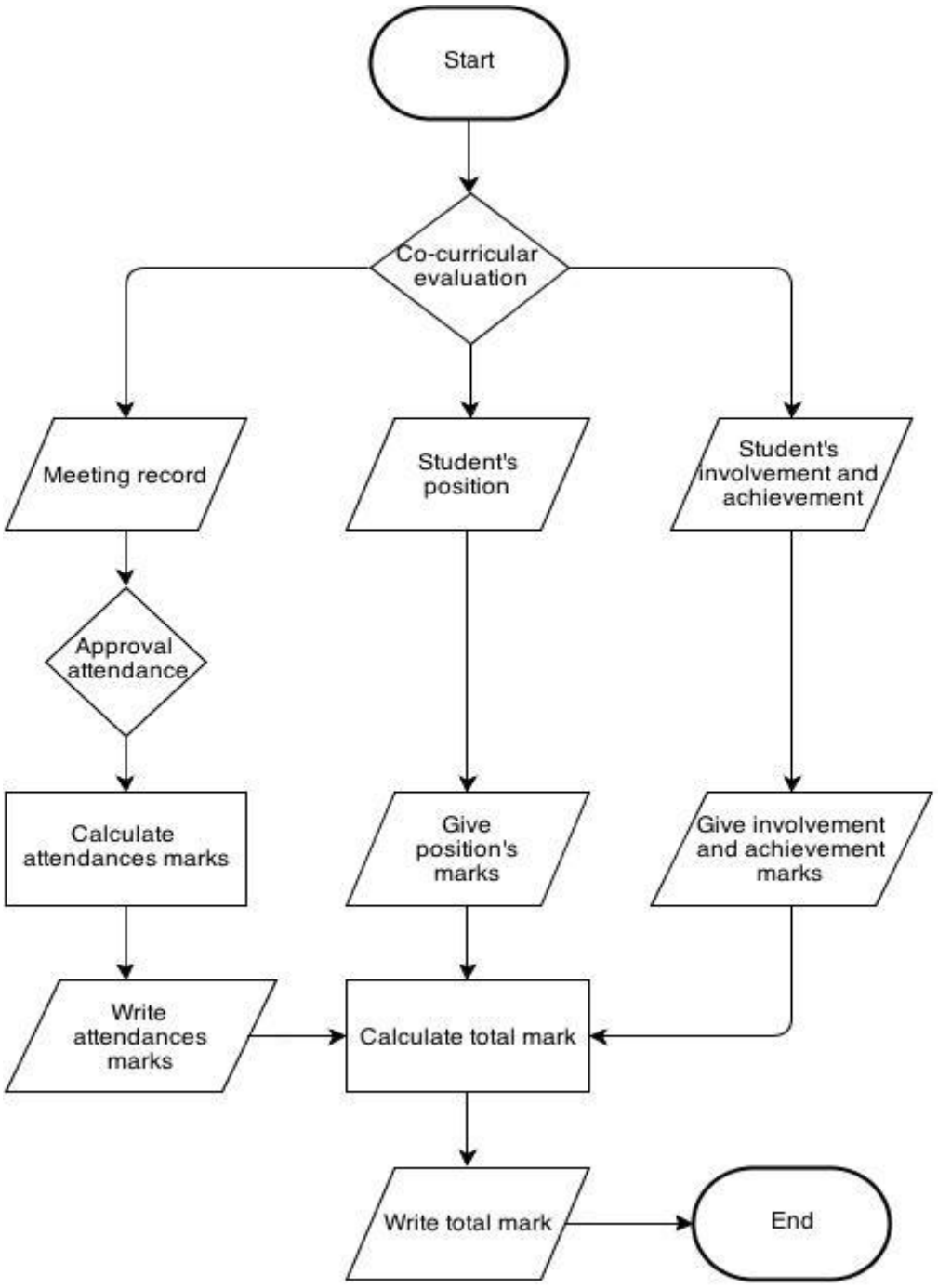


Figure 2.5 : Process flow to calculate total co-curricular marks for each units of co-curricular

© Universiti Teknikal Malaysia Melaka

Figure 2.6 shows process flow to calculate total average mark of co-curricular using manual system.

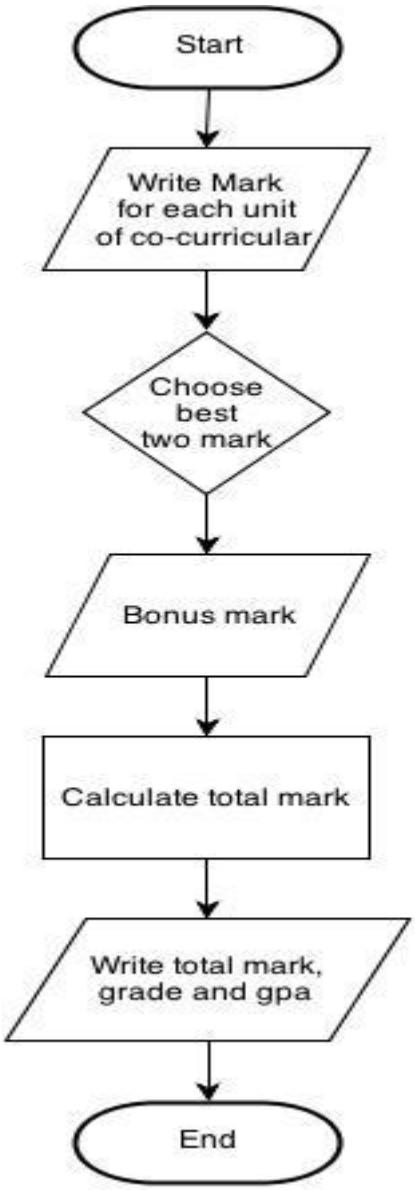


Figure 2.6 : Process flow to calculate total average mark of co-curricular

2.3 Perisian Penilaian Aktiviti Kokurikulum Sekolah (PPAKS)

Several schools in Malaysia already used a system to manage co-curricular activities. However, some weaknesses have been identified in the existing system. These weaknesses must be overcome in order not to be repeated in the completion of this system. Among the existing systems that have been identified are 'Perisian Penilaian

© Universiti Teknikal Malaysia Melaka

Aktiviti Kokurikulum Sekolah (PPAKS)'. Most of schools in Johor already use this system.

Figure 2.7 : Interface of PPAKS to key in co-curricular marks

Figure 2.7 shows the teachers provide co-curricular marks by simply filling or clicked empty spaces such as space for attendance, participation, performance and position held. Marks will be calculated automatically according to the formula. Some problems arise here. The teachers need to key in students marks without tell the details of performance.

I. Attendance

Attendance marks involve some calculation. However in PPAKS, the teachers have to calculate and key-in data about attendance manually.

II. Position

Teachers have to determine and click the mark about position held in every units of co-curricular manually by referring to the guidance on the right hand side. But, details about the marks did not stored in database. If the students got 8 marks, what is their position held in the co-curricular.

III. Involvement

© Universiti Teknikal Malaysia Melaka

Teachers have to determine and key-in the marks about involvement of the student manually by referring to the guidance on the right hand side. Involvement marks consist of stage of the involvement. From this system, teachers not key-in the stage for the involvement marks of the student. So, the marks stored in database without telling the details of the involvement marks.

IV. Achievement

For the achievement marks, consist of the achievement and stage of the achievement. Same as involvement marks, the teachers have to determine and key-in the marks about achievement of the student manually by referring to the guidance on the right hand side. What is the achievement about and what is the stage of achievement not stored in database.

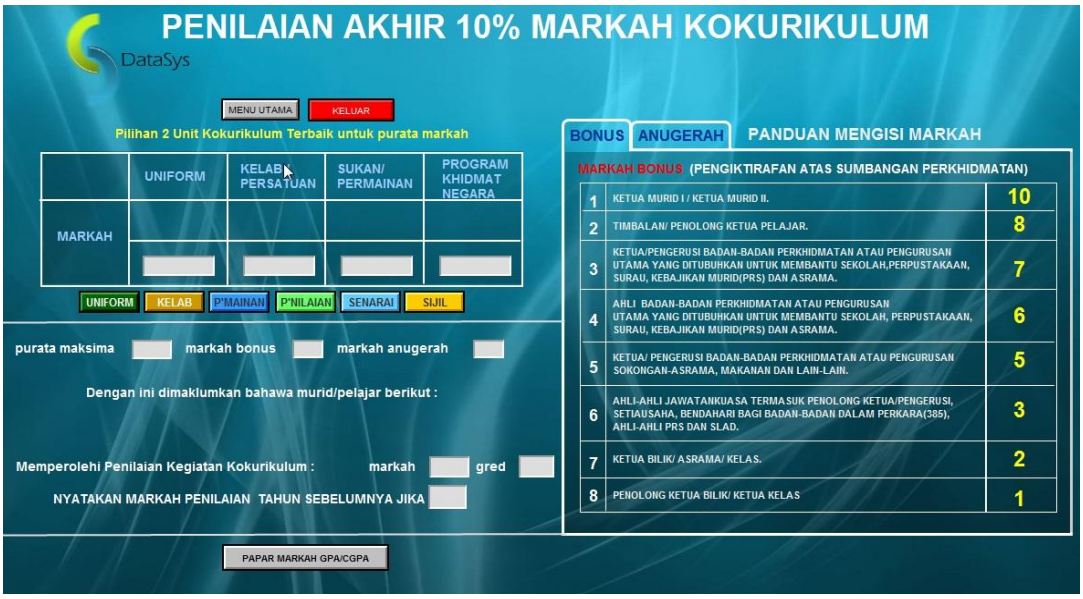


Figure 2.8 : Final evaluation 10% of co-curricular marks.

Based on Figure 2.8, overall co-curricular student performance marks. All three scoring units of co-curricular that uniform bodies, club and association and sports and games will be calculated based on the two best units marks. Bonus marks will also be mixed (if eligible) and finally full marks and grades will be given. It still needs to key-in the total mark. A good system should generate marks automatically. The teachers have to key-in marks for uniform bodies, club and association and sport and games manually.

© Universiti Teknikal Malaysia Melaka

2.4 Use Case Diagram

Figure 2.9 shows the use case diagram for Co-curriculum Management System. There are three users can login into this system that is teacher, student and GPK co-curricular.

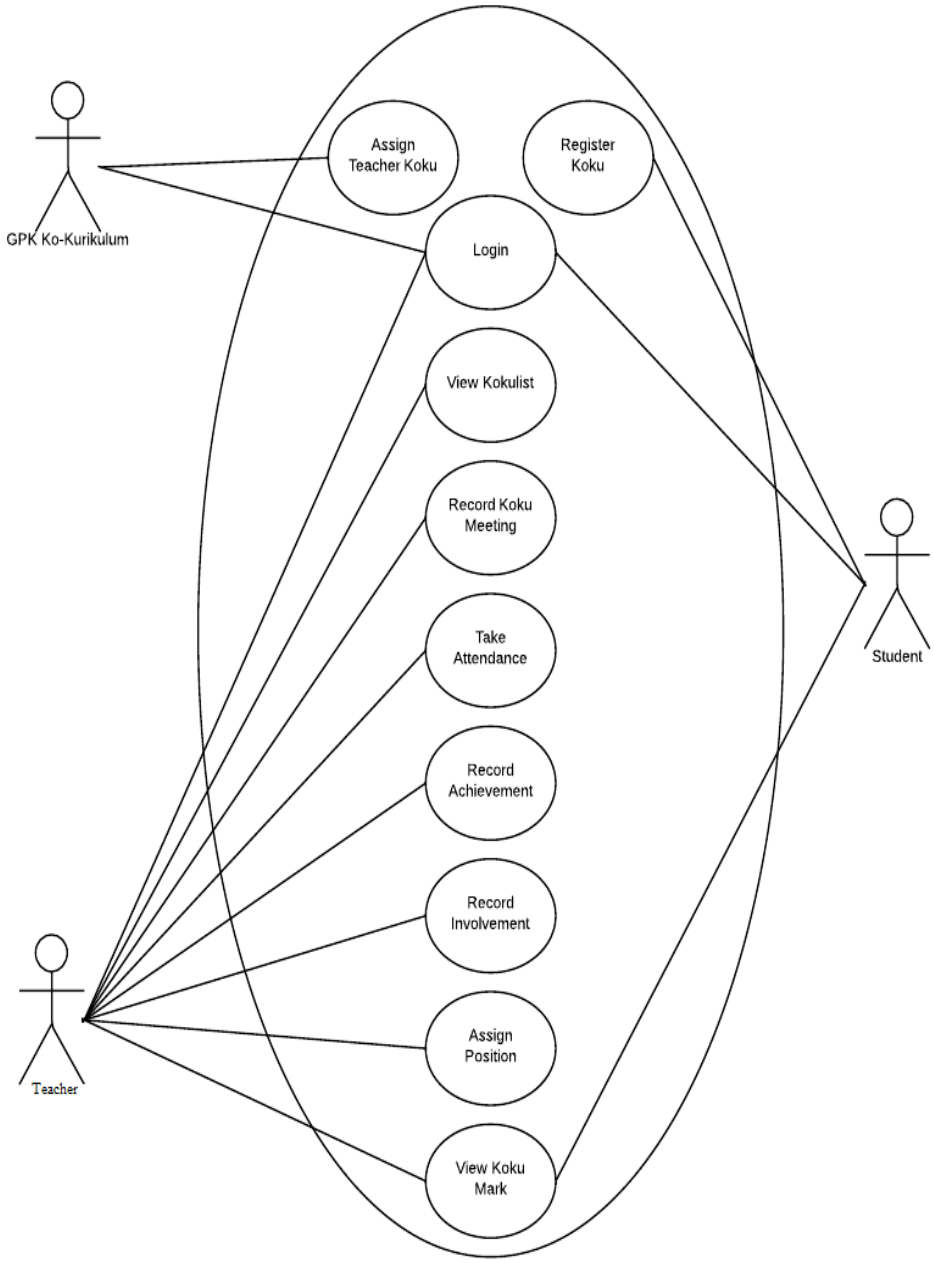


Figure 2.9 : Use case diagram for Co-curriculum management system

© Universiti Teknikal Malaysia Melaka