**STUDENT DEMERIT SYSTEM**

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UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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JUDUL: STUDENT DEMERIT SYSTEM (SDS)

SESI PENGAJIAN: 2015/2016

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**STUDENT DEMERIT SYSTEM (SDS)**

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

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
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2015

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**DECLARATION**

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Is written by my own effort and that no part has been plagiarised without citations.

STUDENT : _____ Date: .

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SUPERVISOR : _____ Date: .

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**DEDICATION**

To my beloved parents,
my supervisor and lectures
and also to all my friends.

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First of all, I would like to thank Encik Yahaya bin Abd Rahim for being my supervisor that guide me throughout this project. He was very helpful that assist me to complete this project successfully.

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Not forgotten, to all my fellow friends who has contributed in my project. All that contribution and encouragement from them throughout this project from start to the end will always be remembered and appreciated.

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## ABSTRACT

Student Demerit System (SDS) are develop to replace the current system that are used manually by security officer in UTeM. In other words, it is aim to be computerized the manual system of the current system which is now using the receipt. This system is built for UTeM staff and student. For UTeM staff, it help them to manage student demerit record systematically and effectively. While for student, it is easier for them to check either they have and demerit record or not. SDS are develop using system development life cycle (SDLC). The waterfall model are choose as the project methodology. The overall system are use the Hypertext Processor (PHP), Wamp Server and Oracle 10g Express Edition. Entity relational diagram (ERD) and data flow diagram (DFD) are the design that is designed to make the flow of the system more understandable. The purpose of the system is to reduce the response time for searching record, easier for student to check their demerit record, keep record more secure and decrease the use of papers (paperless). This system are develop to solve the encountered problem. While completing the system, some strength and weaknesses are identified and the suggestion on how to enhance this system in future are given at the end of the project report.

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# ABSTRAK

Sistem Demerit Pelajar (SDS) ini dibangunkan bagi menggantikan sistem sedia ada yang digunakan secara manual oleh pegawai keselamatan di UTeM. Dalam erti kata lain, ia adalah bertujuan untuk mengkomputerkan sistem manual iaitu sistem semasa yang kini menggunakan resit. Sistem ini dibina untuk kakitangan UteM dan pelajar. Untuk kakitangan UTeM, ia membantu mereka untuk menguruskan rekod demerit pelajar secara sistematik dan berkesan. Manakala bagi pelajar, ia adalah lebih mudah bagi mereka untuk memeriksa sama ada mereka mempunyai rekod dan demerit atau tidak. SDS dibina dengan menggunakan kitaran hayat pembangunan sistem (SDLC). Model air terjun dipilih sebagai metodologi projek. Sistem keseluruhan adalah menggunakan Pemproses Hiperteks (PHP), Wamp Server dan Oracle 10g Express Edition. Entiti hubungan rajah (ERD) dan rajah aliran data (DFD) adalah reka bentuk yang direka agar aliran sistem lebih mudah difahami. Tujuan sistem ini adalah untuk mengurangkan tindak balas masa untuk mencari rekod, memudahkan pelajar menyemak rekod demerit mereka, menyimpan rekod lebih selamat dan mengurangkan penggunaan kertas (paperless). Sistem ini bertujuan untuk menyelesaikan masalah yang dihadapi. Semasa menyiapkan sistem ini, beberapa kekuatan dan kelemahan dikenal pasti dan beberapa cadangan untuk menambahbaik sistem ini pada masa akan datang diberi pada akhir laporan projek.

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**LIST OF ABBREVIATIONS**

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| | | |
|---|---|---|
| SDS | - | Student Demerit System |
| ERD | - | Entity Relationship Diagram |
| DFD | - | Data Flow Diagram |
| DBMS | - | Database Management System |
| SDLC | - | System Development Life Cycle |
| DLC | - | Data Control Language |
| DDL | - | Data Definition Language |
| DML | - | Data Manipulation Language |
| GUI | - | Graphical User Interface |
| PHP | - | Hypertext Pre-processor |
| RAM | - | Random Access Memory |
| CPU | - | Control Processor Unit |
| UTP | - | Unshielded Twisted Pair |
| BPA | - | Bahagian Pengurusan Akademik |
| UTeM | - | Universiti Teknikal Malaysia Melaka |

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# CHAPTER I

# INTRODUCTION

## 1.1 PROJECT BACKGROUND

Student Demerit System (SDS) is system that will be develop in the future to handle student discipline record. The current system is, using the log book to record the student information and admin need to search manually through all that records. The system can help the operation process in organization management be systematic and efficient. The system is built for Student Affairs Department in UTeM.

The Student Demerit System provides two types of application method for different user, student user and administrator user. For student user, they only can insert matric id to search and view their demerit record using search function. While administrator user, only staff in the Student Affairs Department can access to view, edit, add or delete data from the database through the administrative function. Staff needs to enter correct username and password before can access this function. With this Student Demerit System, administration are able to monitor and manage demerit record much easier and more efficient.

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## 1.2 PROBLEM STATEMENTS

i) **Difficult to search data**

The information are difficult to search using the current system that is manual. The staff needs to search data from one file to another. It will waste a time.

ii) **Difficult for student to check discipline record.**

Most student doesn't know either they have demerit or not. If they want to know, they need go to the counter at the Student Affairs Department.

iii) **The probability data will lost is high**

From the current system, the probability data will lost is high because the data only saved and record in the papers.

## 1.3 OBJECTIVES

i) **Reduce response time for searching**

This system will help student to search demerit quickly.

ii) **To ensure student can check discipline record in the system.**

Student can check either they have demerit or not using their ID.

iii) **Keep the demerit information more secure and proper.**

The data are more secure because only the administrator will access the data.

iv) **Decrease use of papers (paperless).**

Through this system, all the information stock will save into database and the use of papers will decrease.

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## 1.4 PROJECT SCOPE

The scopes of the Student Demerit System will focused on two major points which are user and system. Focused on user is based on user using the system. Meanwhile, the focused on systems are divided into several modules that related with system that will be develop. The scopes are:

### 1.4.1 Scope of user

- Admin

  Admin is responsible to manage all the data and functionality of the system. Admin can add, edit, view and delete data of demerit record. To do that, admin must login first.

- Student

  Student can check their demerit record by choose their faculty and insert the matric number. After that student can view the demerit record and payment detail.

### 1.4.2 Scope of system

i. Login

   Login module are develop to allow user access the system. Only admin can login to the system using their ID and password. Admin cannot access the system if the ID or password incorrect.

ii. Calculation

   Calculation module help user to know the total amount that they need or have to pay based on their demerit record.

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iii. Searching

Admin can search and view all the record in the system. While student can view their demerit record by entering the matrix number.

iv. Add /Update/Delete Demerit record

Admin can add, update and delete the record in the system. The valid changes will be save in the database.

## 1.5 PROJECT SIGNIFICANCE

The main purpose for developing this system is easy to use for student check their demerit record. It also more efficient and make the process searching for student demerit become easier. These because what they need to do is just insert their matric id and click button to view record and the system will find the record. Using this system, the data or information will more secure because all the information will be save into the database system. So, the loss of data can be decreased. Moreover, this system will help the administrator to decrease the use of papers and files to keep the data. All the data are inserted will automatically save into the database and it is easier for admin for manage it. Finally, it will help the student to reduce their time for searching demerit record and also help the administrator to search any records from the database.

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## 1.6 EXPECTED OUTPUT

Based on expected end-result for SDS, below is the summary of the expected output;

a) Admin with valid ID and password can access the Student Demerit System.
b) The system shall give the response for invalid ID and password.
c) The system only allow administrator to choose action either add, edit or delete user account and account information.
d) The system allows user to insert their matric number for search and view the demerit record.
e) The system display student demerit record according the matric id entered.

## 1.7 CONCLUSION

As the conclusion, this chapter describes an overview problem statement and the objectives about Student Demerit System. Development of this project system will follow the guideline as suggested for make it done smoothly. The objectives and scope of the system has been identified. It is including the project significant and the expected output. By following the flow and scope of the project, it is hoped that this project will help to provide more efficient computerized system to handle the student discipline. The methodologies of Student Demerit System to gathering the collection from a series of observation and researching. The research method can be analysed from books, journals, experts and Internet resources.

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# CHAPTER II

# PROJECT METHODOLOGY AND PLANNING

## 2.1 INTRODUCTION

Methods that are used during develop this system is to estimate the time of the system to be delivered on the stage are important. For this Student Demerit System (SDS) project, waterfall model are used because by using this model, if there is any problems in any stages, it can be detect and refer to stages before and make an error correction for it. Besides, it is easy rather than a correction with same error on the further next stages. In advance, waterfall is simple approach and argue, easily understandable and explainable phases. There are stages in waterfall model, which are Analysis, Design, Implementation, Testing, and Maintenance. Every stage will only start if the stage before have been finished or nearly finish. Thus, Waterfall model are chosen based on System Development Life Cycle (SDLC) as methodology to develop our system.

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## 2.2 PROJECT METHODOLOGY

The current system that are used now does not efficient and effective during the operation. So that Student Demerit System (SDS) will be used to replaces the current system. The Waterfall Model in DBLC starts from Analysis, Design, Implementation, Testing and Maintenance. Overall for this system will be developed in Windows 8 operating system with Oracle 10g database. The System Development Life Cycle (SDLC) contains six phases: database initial study, database design, and implementation and loading, testing and evaluation, operation and maintenance and evaluation.

### 2.2.1 Database Initial Study

The purpose of the database initial study is to analyze the situation faced. Next is define problems and constraints where information can be divided into two categories which are formal and informal. Most of the information are difficult to search. This is because, the current system record the information of data manually that need to be search from one file to another file. Not just that, the information are not secure because anyone can read the file. Other than that is define the objectives where the database system that wants to be developed must be designed in order to solve at least the major problems that identified during the problem discovery process. The initial study phase where contribute to the problem solution. After that is define scope and boundaries. The system's scope will define the extent of the design related to the operational requirement. By knowing the scope, it will help to define the required data structures, the type and numbers of entities, the physical size of the database and so on. The boundaries are known as external to the system. Boundaries also required by existing hardware and software to accomplish system goals. Finally, the to-be database system is analysed using the Entity Relationship Diagram. Then, the project work plan and Gantt chart will build to develop this system.

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### 2.2.2 Database Design

The second phase focuses on the design of the database model that will support the objectives. The conceptual design of the Student Demerit System is made using Entity Relationship Diagram (ERD). This data modeling will be used to create the abstract database structure to be easier to understand. Moreover, it represent a clear view of the business and its' functional parts. The selection of the DBMS software is important to the information's system for a smooth operation. The end users also must be always aware of both DBMS and the database. After that, the logical design is develop by using Data Dictionary and Data Normalization. The physical design is then develop when Data Schema is produced. It can be define as a process of select the data storage and data access characteristics of the chosen database.

### 2.2.3 Implementation and Loading

During this phase, the database for Student Demerit System is actually built by using the Data Definition Language (DDL), Data Manipulation Language (DML) and Data Control Language (DCL). In modern relational DBMS, a new database implementation requires the creation of special storage-related constructs to address the end-user tables. After the database has been created, the data must be stored in to the database tables. During the implementation and loading phase, other performances, security, backup and recovery must be address in the system.

### 2.2.4 Testing and Evaluation

Once the data have been loaded into the database, testing and evaluation phase occurs that will test and fine tunes the database for performance, integrity, and concurrent access and security constraints. The testing and the evaluation phase using the database tools. If the database implementation fails to meet the system's evaluation criteria or requirement, several options will be considered to enhance the system:

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