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| **المملكة العربية السعودية**  **وزارة التعليم العالي**  **جامعة الإمام محمد بن سعود الإسلامية**  **كلية علوم الحاسب والمعلومات** | A description...  **Second term 1441/2020** | **KINGDOM OF SAUDI ARABIA**  **Ministry of Higher Education**  **Al-Imam Mohammad University**  **College of Computer & Information Sciences** |  |  |  |
| **Software Engineering (CS- 310)**  **BSCS- Section: 171**  **Project-Phase No: 02**  **SATS**  **(DD)** Submitted By | | |  |  |  |
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**Abstract**

This is a design document (DD) that will describe the SATS project in details of design architecture, design model, class hierarchy and how the sub-system will communicate with each other as a whole system. It will include three chapters introduction, design include system architecture and system design and last chapter will be conclusion. This document will give a good understanding of how the system will be like.

# Introduction

*This section gives a scope description and overview of everything included in this DD document. Also, the purpose for this document is described and a list of abbreviations and definitions is provided.*

## Purpose

*The purpose of this DD document is to give a detailed description of the system high level and medium level design, detailed design for the “Students Attendance Tracking System” (SATS) software. It will illustrate the purpose and complete declaration for the development of system. Also, it will explain what the system should do and how it will do it. This document is meant to be proposed to a customer for its approval and a reference for the developing team to build the system.*

## Scope

*This project will improve the students attendance taking process in universities. Currently, attendance tracking methods in universities are time-consuming which waste valuable lecture time. The project main stakeholders are University Professors and students as they'll benefit tremendously from such software. It will keep professors and students focused on learning and not waste their time doing routine nonproductive task such as taking attendance. Instead of calling each student name in every class, which sometimes can be challenging for foreign professors pronouncing some difficult names, attendance can simply be taken by students scanning badges upon entry. Another benefit this software will produce is the accuracy and fairness of attendance records as there is no room for human error. This software will give immediate feedback to students if they are in the wrong classroom upon scanning.*

*The main goal for SATS is to build a system that can track attendance effortlessly, organized convenient, fairly and improves the process of attendance tracking and monitoring in Imam Mohammad bin Saud Islamic University. SATS is going to have multiple objectives. As a system it will have to create a database with functions to read, write, and manipulate the data. Using Excel file to record students attendance and generate report for professors to view. Dealing with scan code reader to scan students IDs and setup the device.*

## Definitions, Acronyms, and Abbreviations

|  |  |
| --- | --- |
| *Term* | *Definition* |
| *User* | *Someone who interacts with the mobile phone application* |
| *Stakeholder* | *Any person who has interaction with the system who is not a developer* |
| *MVC* | *Model view controller* |
| *DD* | *Document design* |
| *SATS* | *Students Attendance Tracking System* |

## References

*[1] IEEE Software Engineering Standards Committee, “IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications”, October 20, 1998.*

## Overview

*This DD document will let the customer and developing team to understand and have a good knowledge about the system design in details. As we going through this document we will approach and elucidation introduction as first chapter. High-level and low-level diagrams, architecture pattern, briefly describing the role of each class as well as the methods included as second chapter. Third chapter will be a conclusion of the document.*

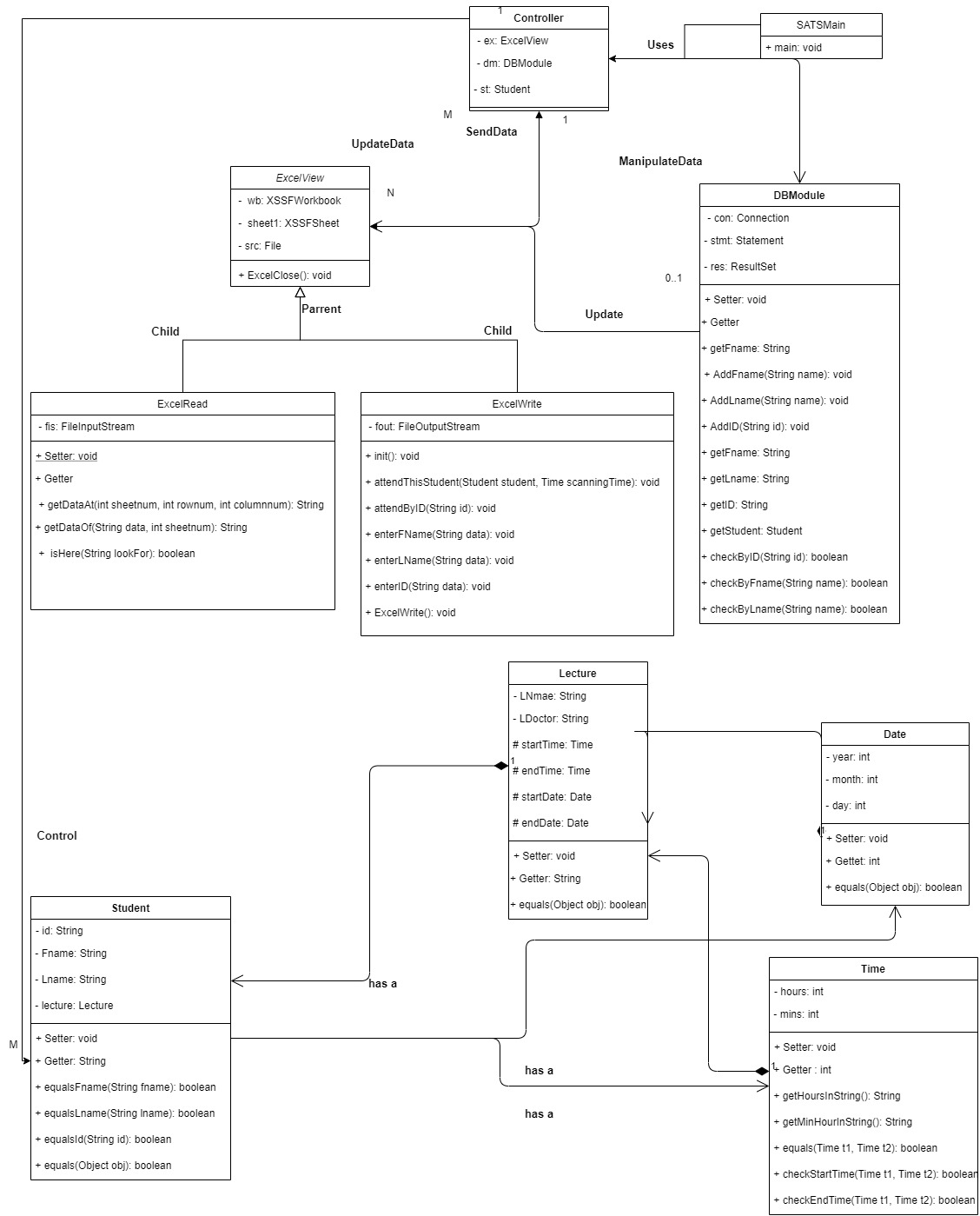
# High Level and Low-Level Design

## Class Diagram

*The class diagram shows the structure of SATS in program units.*

*A close up of text on a black background

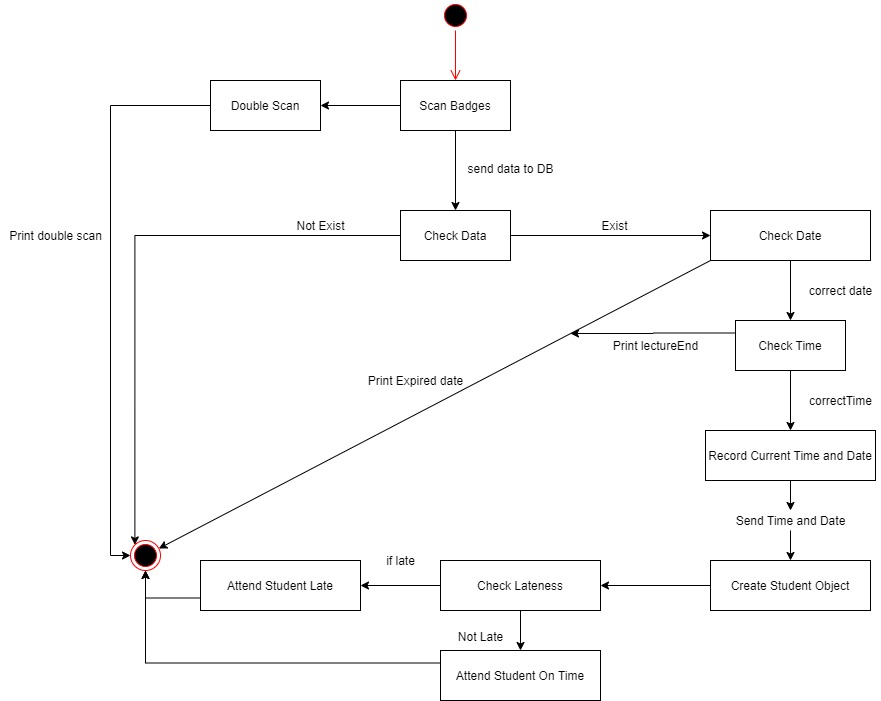
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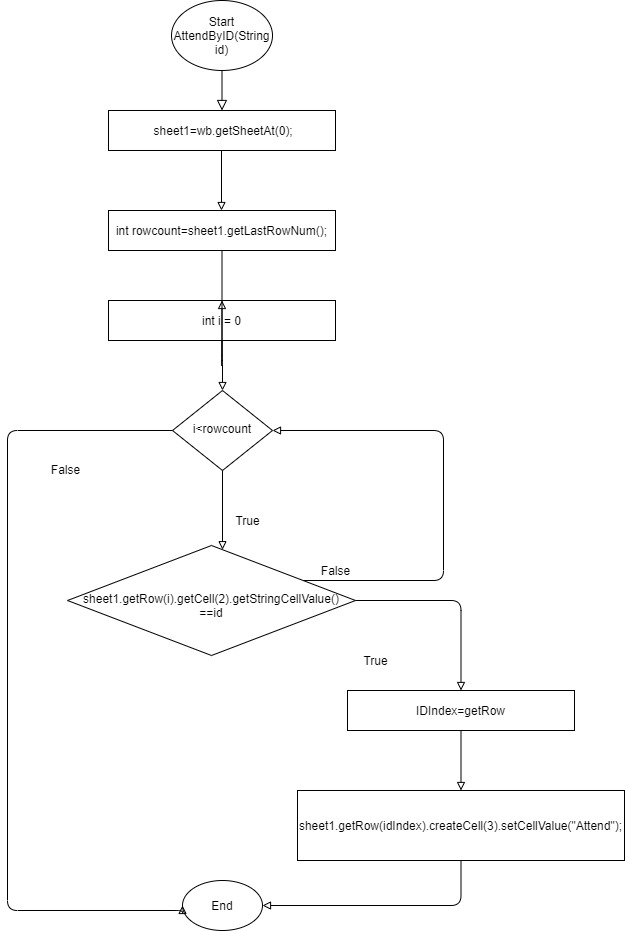
## Class Method Descriptions

## Detailed Design

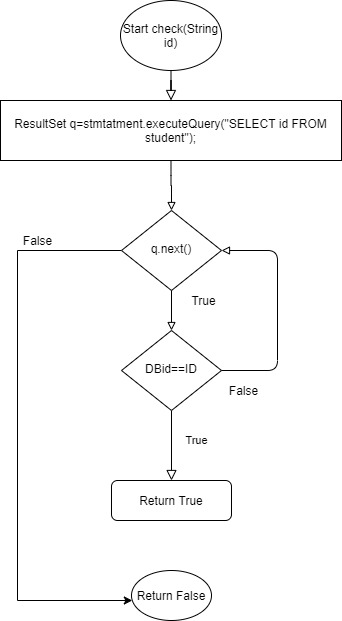
*his section contains diagrams of low-level in details describing SATS.*

*This is an activity chart that explain the activities of the system when start scanning. *

This flow chart explains in details how AttendByID() works.



Shows the details of the check(String id) method that manipulate the database**.**

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# Conclusion

*In conclusion, our DD will gives a full knowledge of the software in low-level, high-level, class hierarchy and the system architecture. We provide an abstraction, introduction that help to understand the DD and SATS. We also, includes class diagram, use cases, state diagram, sequence diagram, methods and classes description in order to approach the software correctly and as requirement needs.*