VNR Vignana Jyothi Institute of Engineering and Technology

(Affiliated to J.N.T.U, Hyderabad)

Bachupally(v), Hyderabad, Telangana, India.

ATTENDANCE MANAGEMENT SYSTEM

A course project submitted in complete requirements for the award of the degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING

Submitted by

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ACKNOWLEDGEMENT

Over a span of two years, VNRVJIET has helped us transform ourselves from mere amateurs in the field of Computer Science into skilled engineers capable of handling any given situation in real time. We are highly indebted to the institute for everything that it has given us. We would like to express our gratitude towards the principal of our institute, **Dr. Challa Dhanunjaya Naidu** and the Head of the Computer Science & Engineering Department, **B.V. Kiranmayee** for their kind co- operation and encouragement which helped us complete the project in the stipulated time. Although we have spent a lot of time and put in a lot effort into this project, it would not have been possible without the motivating support and help of our project guide A Madhavi,Asst.Pofessor, CSE dept, VNRVJIET & N.V SAILAJA , Asst.Professor, CSE dept, VNRVJIET **.** We thank them for their guidance, constant supervision and for providing necessary information to complete this project. Our thanks and appreciations also go to all the faculty members, staff members of VNRVJIET, and all our friends who have helped us put this project together.

ABSTRACT

Attendance management is important to every single organization; it can decide whether or not an organization such as educational institutions, public or private sectors will be successful in the future. Organizations will have to keep a track of people within the organization such as employees and students to maximize their performance. Managing student attendance during lecture periods has become a difficult challenge. The ability to compute the attendance percentage becomes a major task as manual computation produces errors, and wastes a lot of time. For the stated reason, an efficient Program for attendance management system is designed to track student's activity in the class. This application takes attendance electronically and the records of the attendance are storing in a database. The system design using the Model, View, and Controller (MVC) architecture, and implemented using the power of JAVA and MYSQL Data Base. Java Data Base Driver(JDBC) is adding to the Program to improve the use of the system. MySQL used for the Program Database. The system designed in a way that can differentiate Sectors of branches since the rate of them is different for calculating the percentages of the students' absence. Insertions, deletions, and changes of data in the system can do straightforward via the Program Input and Output without interacting with the tables. Different presentation of information is obtainable from the system. The test case of the system exposed that the system is working enormously and is ready to use to manage to attend students for any department of the University.

Keywords: Attendance Management Systems, Application Program, Absence Management System, Percentage Calculator.

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Topic 1
INTRODUCTION

1.1 PROJECT PROFILES

1. **Project Partners**:

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2. **Hardware / Software Environment**:

   - Hardware:
     - Computer System : 32/64 bit
   - Software:
     - Operating System: Windows XP or later.
   - Development Tools:
     - Front End: JAVA Run Time Environment(JRE),Sublime Text Editor.
     - Back End: SQL Server, JDBC Drivers.
   - Documentation & Presentation Tools:
     - Microsoft Word 2018.
     - Microsoft PowerPoint 2018.

1.2 SYSTEM OVERVIEW

➢ Introduction:-

Attendance Management System is software developed for daily student attendance in schools, colleges and institutes**.** If facilitates to access the attendance information of a particular Student in a particular branch. The information i**s** sorted by the operators, which will be provided by the Lecturer for a particular working day. This system will also help in evaluating attendance eligibility criteria of a student.

Due to student's interest in classrooms, and whose is the largest union in the study environment of university or institution, so recording absence at a department having a large number of students in a classroom is a difficult task and time-consuming. Moreover, the process takes much time, and many efforts are spent by the staff of the department to complete the attendance rates for each student. So in many institutions and academic organizations, attendance is a very important criterion which is used for various purposes. These purposes include record keeping, assessment of students, and promotion of optimal and consistent attendance in class. As long as in many developing countries, a minimum percentage of class attendance is required in most institutions and this policy has not been adhered to, because of the various challenges the present method of taking attendance presents. The process of recording attendances for students was in the form of hardcopy papers and the system was manually done. Besides wasting time and taking efforts for preparing sheets and documents, other disadvantages may be visible to the traditional one due to loss or damage to the sheets-sheet could be stolen.

➢ Purpose:-

The purpose of developing attendance management system is to computerized the tradition way of taking attendance. Another purpose for developing this program is to easily moniter the student's attendance progress by any individual of a firm.

The developed system considers as an alternative to the traditional one, it is easy, fast and reliable than the traditional one, especially after the development of information technology and its usage by educational institutions. Therefore, the design of student attendance system has a significant reality meaning.

- **Scope:-**

The scope of the project is the system on which the software is installed, i.e. the project is developed as a application Program, and it will work for a particular institute or organization. But later on the project can be modified to operate it online.

The system is a application program developed for daily student attendance in departments within the university. It facilitates access to the attendance of a particular student in a particular class. This system will also help in generating reports and evaluating the attendance eligibility of a student. The system is not only improving the work efficiency, students' study and development, but also can save human and material resources.

1.3 **OBJECTIVE**

- Create a application program to be used in place of old paper based user manage process.
- Use JDBC and SQL Server technology to create strong and secured database connectivity.
- Incorporate the server software within the code.
- Runtime package and deployment instructions are given.
- Understand fundamentals of programming such as variables, conditional and iterative execution, methods, etc.
- Understand fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries, etc.
- Be aware of the important topics and principles of software development.
- Have the ability to write a computer program to solve specified problems.
- Be able to use the Java SDK environment to create, debug and run simple Java programs.

TOPIC 2
PROJECT MANAGEMENT

2.1 PROJECT DEVELOPMENT APPROACH

Software Process Model:

To solve actual problems in an industry, software developer or a team of developers must incorporate a development strategy that encompasses the process, methods and tools layers and generic phases. This strategy is often referred to as process model or a software developing paradigm. A process model for software developing is chosen based on the nature of project and application, the methods and tools to be used, and the controls and deliverables that are required. All software development can be characterized as a problem solving loop in which four distinct stages are encountered: Status quo, Problem definition, technical development and solution integration. Regardless of the process model that is chosen for a software project all of the stages coexist simultaneously at some level of detail.

Our Project Follows the Waterfall Model:

- **The Waterfall Model:**

The steps of the typical Waterfall Model are:

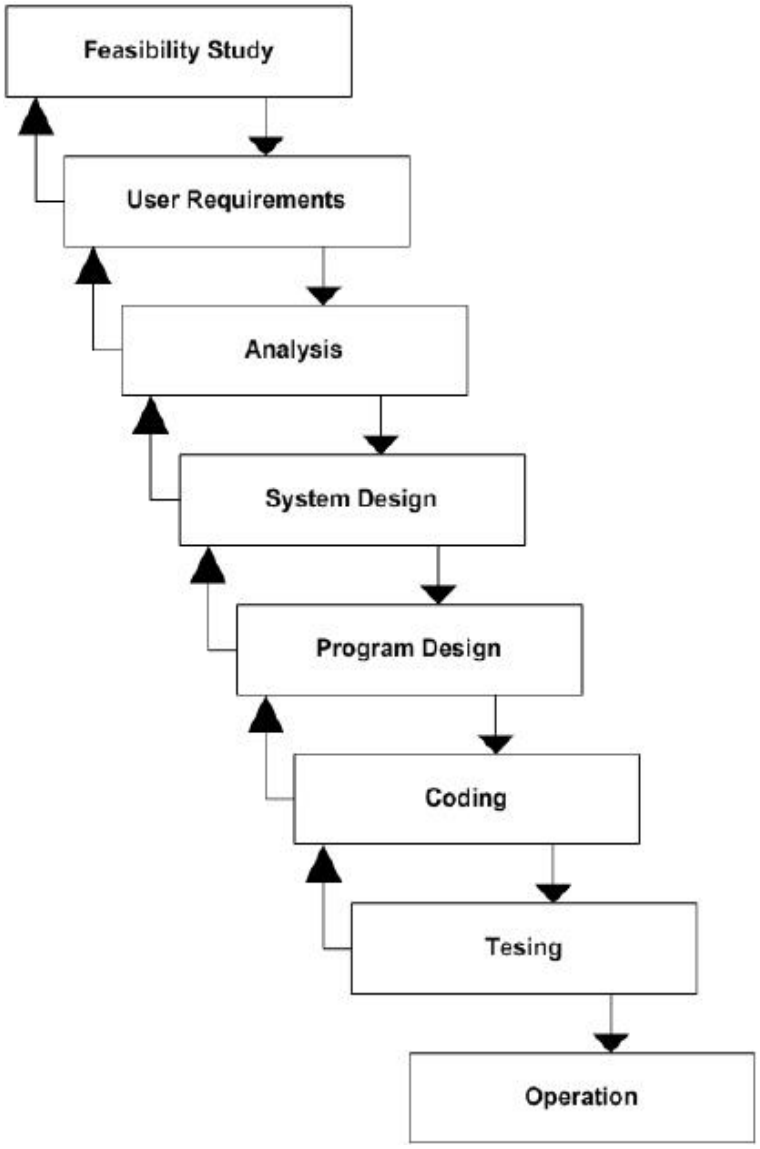
1. Requirement Definition.
2. System & Software Design.
3. Implementation.
4. Integration & System Testing.
5. Operation and Maintenance.

2.2 THE WATERFALL MODEL

There have been some variations from the typical waterfall model for this project lifecycle.

They are:

1. Maintenance has been omitted from the current project.
2. Not all testing methods which are present in theoretical model are implemented.



TOPIC 3
SYSTEM REQUIREMENT STUDY

3.1 **USER CHARACTERISTICS**

This program will be used in one User Modules which are Administrator. As all of these have different requirements the modules are designed to meet their needs and avoid any type of confusion. The Uses of all three User Modules have been described below.

1. ADMIN LOGIN
2. LECTURER LOGIN
3. STUDENT LOGIN

- **ADMIN LOGIN:**
  - Given Access to confirm Registrations of the new students.
  - All the server based services are managed by this User.
  - He is solely responsible for the design of database and manage the data in the tables.

- **LECTURER LOGIN:**
  - Given access to update the Student's attendance.
  - View level: Can update the data in the table but do not interact with SQL queries and content of the program.

- **STUDENT LOGIN:**
  - Given secured access to only view the attendance.
  - Restricted to edit the data of the tables.
  - Restricted to interact with the technical part of the program.

3.2 **SYSTEM REQUIREMENTS**

Hardware:

- Minimum Windows 95 software.
- IBM-compatible 486 system.
- Hard Drive and Minimum of 8 MB memory.

Software:

- Operating System: Windows XP or later.
- Java SDK or JRE 1.6 or higher
- Java Servlet Container (Free Servlet Container available)
- Supported Database and library that supports the database connection with Java: JDBC.
- Front End: JAVA (SUBLIME TEXT).
- Back End: SQL SERVER .

TOPIC 4

SYSTEM ANALYSIS

4.1 Study & Weaknesses of Current System

Current System

In the present system all work is done on paper. The whole session attendance is stored in register and at the end of the session the reports are generated. We are not interested in generating report in the middle of the session or as per the requirement because it takes more time in calculation. So, We are not able to get employees regularity report and take necessary action on employees whenever we want because of having very time consuming process.

Weaknesses in Current System

1. **Not User Friendly:**

   The existing system is not user friendly because the retrieval of data is very slow and data is not maintained efficiently.

2. **Difficulty in report generating:**

   We require more calculations to generate the report so it is generated at the end of the session. And the employee not gets a single chance to improve their Attendance.

3. **Manual control**:

   All calculations to generate report are done manually so there is greater chance of errors.

4. **Lots of paperwork**:

   Existing system requires lot of paper work. Loss of even a single register/record led to difficult situation because all the papers are needed to generate the reports.

5. **Time consuming**:

Every work is done manually so we cannot Generate report in the middle of the session or as per the requirement because it is very time consuming.

4.2 REQUIREMENTS OF NEW SYSTEM

User Requirements:

The User requirements for the new system are to make the system fast, flexible, less prone to errors and reduce expenses and save time.

- Time can be saved in scheduling the salary if it were available to make question banks to store questions for different Employee in advance and can be used as per required.

  .
- A system that can automate the checking of answers which are pre-stored so that results can be generated as soon as the Employee gives the reason.

- A facility that can generate result charts as per required without manual interference for providing how a task is to be done instead only asking what is to be done.

- The system should have Student records on hand which can be used as per required only by authorized personnel.

- The New system should be more secure in managing Student records and reliable enough to be used in any condition.

- Finally, it should prove cost effective as compared to the current system.

4.3 **FEASIBILITY STUDY**

A key part of the preliminary investigation that reviews anticipated costs and benefits and recommends a course of action based on operational, technical, economic, and time factors. The purpose of the study is to determine if the systems request should proceed further.

- **Economically Feasibility:**

The system being developed is economic with respect to Business or point of view. It is cost effective in the sense that has eliminated the salary work completely. The system is also time effective because the calculations are automated which are made at the end of the month or as per the employee requirement. The result obtained contains minimum errors and are highly accurate as the data is required.

- **Technical feasibility:**

The technical requirement for the system is economic and it does not use any other additional Hardware and software.

- **Behavioral Feasibility:**

The system working is quite easy to use and learn due to its simple but attractive interface. user requires no special training for operating the system.

4.4 FEATURES OF THE NEW SYSTEM

The new system has been designed as per the user requirements so as to fulfill almost all them.

1. **User Friendly**: -

   The proposed system is user friendly because the retrieval and storing of data is fast and data is maintained efficiently.

2. **Reports are easily generated**:-

   Reports can be easily generated in the proposed system so user can generate the report as per the requirement (monthly) or in the middle of the session.

3. **Very less paper work:**

   The proposed system requires very less paper work. All the data is feted into the computer immediately and reports can be generated through computers. Moreover work becomes very easy because there is no need to keep data on papers.

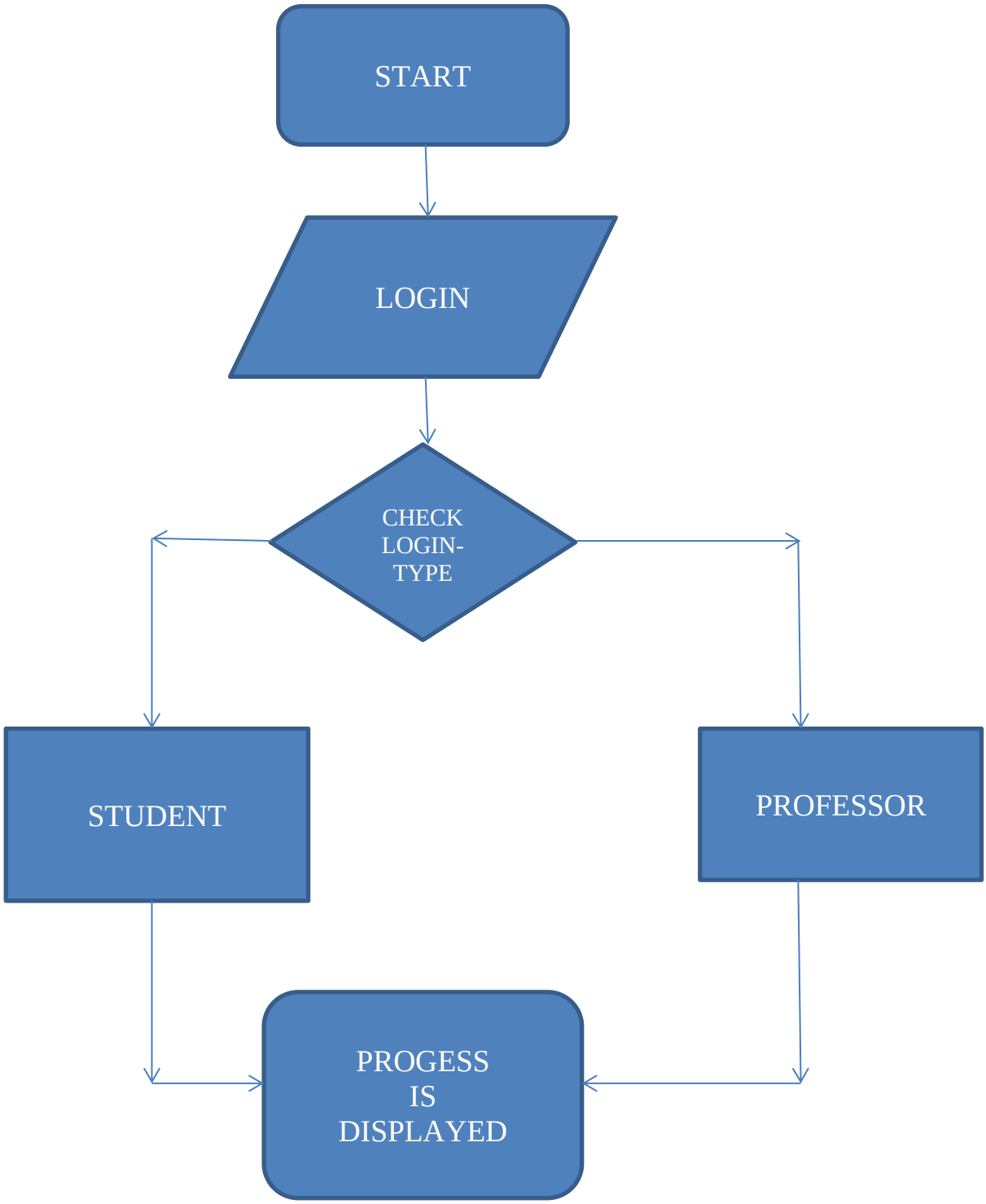
4. **Computer operator control**:

   Computer operator control will be there so no chance of errors. Moreover storing and retrieving of information is easy. So work can be done speedily and in time.

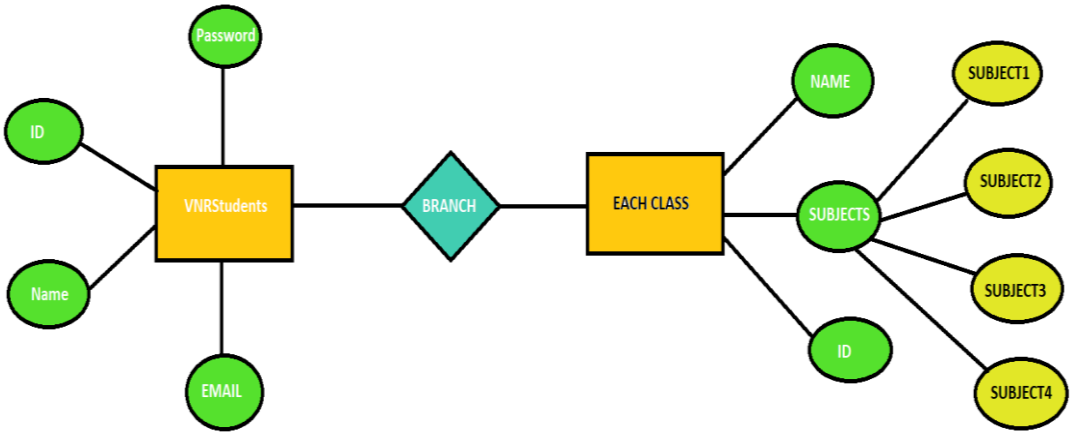
TOPIC 5

SYSTEM DESIGN

5.1 SYSTEM FLOW CHART



5.2 **E-R DIAGRAM**



5.3 **DATA DICTIONARY**

TABLE NAME : VNRStudent .

DESCRIPTION : It stores the personal details of all the students who are registered under university. This is master database which can only be edited by the Admin.

SI NO	FIELD NAME	DATA TYPE	SIZE	CONSTRAINTS	DESCRIPTION
1	ID	NUMBER	20	**PRIMARY KEY**	It is unique for each student.
2	NAME	VARCHAR2	20	NOT NULL	Name of a Student.
3	PASSWORD	VARCHAR2	20	NOT NULL	Login Password.
4	EMAIL	VARCHAR2	40	NOT NULL	Mail Id.
5	BRANCH	VARCHAR2	10	NOT NULL	Branch in which the Student studying.

TABLE NAME : BranchWise Details

DESCRIPTION : This tables are created Dynamically at the Runtime by requesting the Nmae of the Subjecys by Professor Login.

SI NO	FIELD NAME	DATA TYPE	SIZE	CONSTRAINTS	DESCRIPTION
1	ID	VARCHAR2	20	**PRIMARY KEY**	It is unique for each student.
2	NAME	VARCHAR2	20	NOT NULL	Name of a Student.
3	BRANCH	VARCHAR2	20	NOT NULL	Branch of respective Student.
4	**SUBJECTS**	…			
5	TOTAL	NUMBER	3	NOT NULL	Number of Working days.

TOPIC 6
SUMMARY

Project Title:

- Student Attendance Management System.

Software Used:

- Sublime Text Editor.
- Oracle JDBC drivers.
- Java Runtime Environment.
- SQL Server Tools.

Documentation Tools:

- Microsoft Word 2018.
- MS Excel.

Project Guides:

- N.V. SAILAJA, Asst. Professor, DataBase Management Systems,VNRVJIET.
- A.MADHAVI, Asst.Professor, JAVA,VNRVJIET.

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Project Duration:

- 4th Sem.

Topic 7
Conclusion

The main aim of this system was to put what we learnt in our Course class into practice. The Attendance system designated to our team allowed us to fully exercise the Concepts of Java and Databases.

We were able to attain our set objectives, and this helped us again confidence in writing our own code and our own applications. In addition, the use of serialization was an experimentation to cut down the time taken in designing.

The front-ends and back-ends of applications separately. With our OOP approach and serialization, we only concentrated on designing the objects/classes, and then just serialized them on disk. So we did not spend any time on designing how to store data.

We also worked as a team, and gained some experience on how professional programmers work in the industry.

There is always room for improvement, and the software we created can also be improved. This is especially because we had to create it within a limited time. With more time, the software can be improved to include security and different types of users. This would be the first step in marking the software network-enabled, and eventually web-enabled.

This was our original after-thought to programming the software, and we had chosen JDBC and SQL. In addition, the software can also be improved in terms of the calculations it can do, and more flexibility in the rates used in calculations per student.