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**CHAPTER 1**

**INTRODUCTION**

**1.1 Background:**

**Student attendance** system deals with the maintenance of the student’s attendance details. It generates the attendance of the student on basis of presence in class. It is maintained on the daily basis of their attendance. The staff will be provided with the separate username & password to make the student’s status.

The staff handling the particular subjects responsible to make the attendance for all students. Only if the student present on that particular period, the attendance will be calculated. The students attendance reports based on weekly and consolidate will be generated

On the other end students will be provided a biometric card and their personal system user id and password which would be swiped while entering and exiting and system would be tracking the time line the student was online .

**1.2 OBJECTIVE:**

“Call less Attendance System” is software developed for maintaining the attendance of the student on the daily basis in the college. Here the staff, who are handling the subjects, will be responsible to mark the attendance of the students. Each staff will be given with a separate username and password based on the subject they handle. An accurate report based on the student attendance is generated here. This system will also help in evaluating attendance eligibility criteria of a student. Report of the student’s attendance on weekly and monthly basis is generated.

**1.3 PROPOSED SCOPE AND APPLICABILITY:**

To overcome the drawbacks, the proposed system has been evolved. This project aims to reduce the manual work and saving time to generate accurate results from the student’s attendance.

It would be created by applying basic information about students into system like name, id.no, etc. That would help to track students presence on the floor through system.

The system provides with the best user interface. The efficient reports can be generated by using this proposed system.

* + 1. **Advantages of Proposed System**

1. It is trouble-free to use.
2. It is a relatively fast approach to enter attendance

1. Is highly reliable, approximate result from user
2. Best user Interface
3. Efficient reports

**1.4 Criteria or Success:**

At the time of implementation of system, system analysis is involved. We need to confirm the practical problem of controlling various other activities.

The basic criteria of the system project should be given a correct attention before the implemention. Thus the following are some of the keen point to be looked after :

1. The implication of system environment

1. Self selection and allocation for implementation tasks
2. Consultation with unions and resources available

1. Standby facilities and channels of communication

There are multiple scope for success in future. The project can be implemented on internet for further scope and study, moreover it could get improved and upgraded for more quicker and easy usage. As there would always be flows it is important to get the system upgraded for security purpose

Chapter 2

REQUIERMENT ANALYSIS

**Requirement Traceability Matrix**

* The **Requirements Traceability Matrix** (RTM) is a document that links requirements throughout the validation process.
* The purpose of the Requirements Traceability Matrix is to ensure that all requirements defined for a system are tested in the test protocol.
* The traceability matrix is a tool both for the validation team, to ensure that requirements are not lost during the validation project, and for auditors, to review the validation documentation.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Req  Id | Requirement | Requirement  Description | Analysis | Design | Coding | Testing | Deployment |
| RQ1 | Institute details | We collect information about the type of institute |  |  |  |  |  |
| RQ2 | Admin details | We find out the admin details |  |  |  |  |  |
| RQ3 | Faculty details | We collect faculty data as input |  |  |  |  |  |
| RQ4 | Course details | We collect all course details |  |  |  |  |  |
| RQ5 | Student details | We collect all student information |  |  |  |  |  |
| RQ6 | Report details | Report generation using  condition |  |  |  |  |  |
| RQ7 | Subject details | We collect Course wise subject details |  |  |  |  |  |

**Requirement Feasibility and Specification**

**Feasibility Study**

The prime focus of the feasibility is evaluating the practicality of the proposed system keeping in mind a number of factors. The following factors are taken into account before deciding in favor of the new system.

* **Economic Feasibility**

Report generation in the proposed system in precise that is reports are generated as per user requirements, which reduces the use of papers and manual labor.

* **Technical feasibility**

Keeping in view the above fact, nowadays all organizations are automating the repetitive and monotonous works done by humans. The key process areas of the current system are nicely amenable to automation and hence the technical feasibility is proved beyond doubt.

* **Operational Feasibility**

The present system has automated most of the manual tasks. Therefore the proposed system will increase the operational efficiency of the administrator and instructors.

**Specification**

* Software requirements specification establishes the basis for an agreement between customers and contractors or suppliers (in market-driven project, these roles may be played by the marketing and development divisions) on what the software product is to do as well as what it is not expected to do.
* Software requirements specification permits a rigorous assessment of requirements before design can begin and reduces later redesign. It should also provide a realistic basis for estimating product costs, risks, and schedules. Used appropriately, software requirements specifications can help prevent software project failure.

|  |  |  |  |
| --- | --- | --- | --- |
| Req Id | Requirement | Specification | Compliance |
| RQ1 | Institute details | We provide all details of Institute with all verifications | Fully |
| RQ2 | Admin details | Admin have their own username and password .who manages the all attendance | Fully |
| RQ3 | Faculty details | Faculty have good education with verified details | Fully |
| RQ4 | Course details | Course details must be included | Fully |
| RQ5 | Student details | Student verification will be must.  They have valid details | Fully |
| RQ6 | Report details | Report generation will be depends upon condition. | Partial |
| RQ7 | Subject details | Valid subject details | Fully |

**Project Estimation**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **All Points** | **Analysis** | **Design** | **Coding** | **Software Testing** | **Development** | **Support** | **Total** |
| **And Total no. of Hrs** | **10** | **15** | **25** | **25** | **15** | **10** | **100** |
| **Project Manager** | 2 | 1 | 1 | 1 | 1 |  | **6** |
| **Solution Architech** | 6 | 2 |  |  |  |  | **8** |
| **Designer** |  | 8 | 20 | 5 | 1 |  | **34** |
| **Developer** |  |  |  |  | 1 | 6 | **7** |
| **System Tester** | 2 | 4 | 4 | 19 |  | 4 | **33** |
| **Release Manager** |  |  |  |  | 12 |  | **12** |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Work Iteams** | **Type** | **Simple** | **Mid Complex** | **Complex** | **Very Complex** |
| **FORM** | **NEW** | 1 | 2 | 4 | 8 |
| **TABLE** | **NEW** | 1 | 4 | 8 | 12 |
| **REPORT** | **NEW** | 1 | 3 | 6 | 12 |
| **WEB SERIES** | **NEW** | 1 | 5 | 10 | 15 |
| **LOGIC** | **NEW** | 1 | 6 | 12 | 24 |
| **CONFIGURATION** | **NEW** | 1 | 4 | 16 | 32 |
| **WEB LOGIC** | **NEW** | 1 | 3 | 9 | 27 |
| **SERVICES** | **NEW** | 1 | 2 | 3 | 4 |
| **PRODUCER** | **NEW** | 1 | 1 | 4 | 4 |
| **APT** | **NEW** | 1 | 1 | 2 | 2 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sr.no | Task Desscription | Work Time | Type | Complexity | Count | Total | Phase Work Distribution | | | | | | Role Wire Distribution | | | | | |
|  |  |  |  |  |  |  | Analysis | Design | Coding | System Testing | Development | Support | Project Manager | Solution Architech | Designer | Developer | System Tester | Release Manager |
| 1 | Autonomous web application | Form | NEW | Simple | 1 | 4 | 0.4 | 0.6 | 1 | 1 | 0.6 | 0.4 | 0.24 | 0.32 | 1.36 | 0.28 | 1.32 | 0.48 |
| 2 | Automatic Attendance Tracking | Table | NEW | Mid Complex | 1 | 16 | 1.6 | 2.4 | 4 | 4 | 2.4 | 1.6 | 0.96 | 1.28 | 5.44 | 1.12 | 5.28 | 1.92 |
| 3 | Admin Dashboard | Report | NEW | Complex | 1 | 24 | 2.4 | 3.6 | 6 | 6 | 3.6 | 2.4 | 1.44 | 1.92 | 8.16 | 1.68 | 7.92 | 2.88 |
| 4 | My Attendance Link | Logic | NEW | Very Complex | 1 | 96 | 9.6 | 14.4 | 24 | 24 | 14.4 | 9.6 | 5.76 | 7.68 | 32.64 | 6.72 | 31.68 | 11.52 |
| 5 | Technical aspects | Web logic | NEW | Simple | 1 | 4 | 0.4 | 0.6 | 1 | 1 | 0.6 | 0.4 | 0.24 | 0.32 | 1.36 | 0.28 | 1.32 | 0.48 |
| 6 | Hardware Requirements | Services | NEW | Complex | 1 | 12 | 1.2 | 1.8 | 3 | 3 | 1.8 | 1.2 | 0.72 | 0.96 | 4.08 | 0.84 | 3.96 | 1.44 |
| 7 | Languages used | Producer | NEW | Very Complex | 1 | 16 | 1.6 | 2.4 | 4 | 4 | 2.4 | 1.6 | 0.96 | 1.28 | 5.44 | 1.12 | 5.28 | 1.92 |

**Project Planning**



**Project Risk Assessment**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No** | **Risk Categories** | **Probability** | **Time to Impact** | **Mitigation Rating** | **compsite Index** | **Comments / Remarks** | **Schedule** | **Efforts** | **Quality** |
| **Planning Risks** | |  |  |  | |  |  |  |  |
| 1 | Estimation Risks (effort or team size). Involvement of offshore team in estimation. | 1 | 5 | 4 | 20 |  | 0 | 0 | 0 |
| 2 | Critical dependencies on external files | 0.25 | 3 | 4 | 3 |  |  |  |  |
| 3 | Incomplete information about requirment | 1 | 4 | 5 | 20 |  | 1 | 1 | 1 |
| 4 | unavaibility of existing documents | 0.5 | 3 | 4 | 6 |  |  |  |  |
| 5 | Change in requirement lead to major change in designs that lead to rework | 0.75 | 3 | 4 | 9 |  |  |  |  |
| 6 | key items not fully understood | 1 | 5 | 5 | 25 |  | 0 | 1 | 0 |
| **Resources / Staffing Risks** | |  |  |  |  |  |  |  |  |
| 7 | Difficult to recruit skiied members | 0.75 | 4 | 3 | 9 |  |  |  |  |
| 8 | Key staff are unavailable at citical times | 0.25 | 2 | 4 | 2 |  |  |  |  |
| 9 | Gaps in functional / technical knowledge. Adequate documentation available to offshore wrt design, architecture and functionality of the application to be developed. | 0.75 | 5 | 4 | 15 |  |  |  |  |
| **Requirements, Architecture & Design Risks** | |  |  |  |  |  |  |  |  |
| 10 | Requirements are finalized. | 0.75 | 4 | 4 | 12 |  |  |  |  |
| 11 | Difficult to analyse and finalize the objective | 1 | 5 | 4 | 20 |  | 0 | 0 | 0 |
| 12 | Code generated by CASE tools is inefficient | 1 | 4 | 5 | 20 |  | 0 | 0 | 0 |
| 13 | Not able to integrate the design in CASE tools | 0.25 | 3 | 4 | 3 |  |  |  |  |
| 14 | Identification of all the Functional and non-functional requirements. | 1 | 3 | 3 | 9 |  |  |  |  |
| 15 | Metric automation is adequate. | 1 | 3 | 4 | 12 |  |  |  |  |
| 16 | Scope / requirements are completely defined. | 0.75 | 3 | 3 | 6.75 |  |  |  |  |
| **Execution & Tracking Risks** | |  |  |  |  |  |  |  |  |
| 17 | Possibilities of schedule variance. | 0.5 | 3 | 4 | 6 |  |  |  |  |
| 18 | Possibilities of effort variance. | 0.5 | 3 | 2 | 3 |  |  |  |  |
| 19 | Possibilities of low productivity. | 0.5 | 3 | 1 | 1.5 |  |  |  |  |
| 20 | Database used in the system may be poor which cannot process as many transactoins | 0.25 | 2 | 2 | 1 |  |  |  |  |
| 21 | Resuable software components might contains defects that limit the system functionality | 0.25 | 1 | 3 | 0.75 |  |  |  |  |
| 22 | Usage of development methods/standards. | 0.5 | 2 | 4 | 4 |  |  |  |  |
| 23 | Code reviews are being performed effectively. | 0.25 | 2 | 3 | 1.5 |  |  |  |  |
| **Communication & Issue Resolution Risks** | |  |  |  |  |  |  |  |  |
| 24 | incomplte test Plann | 0.5 | 2 | 3 | 3 |  |  |  |  |
| 25 | Test results are formally documented / tracked to closure. | 0.25 | 3 | 4 | 3 |  |  |  |  |
| 26 | Incomplete test case documents | 1 | 4 | 5 | 20 |  | 0 | 1 | 1 |
| 27 | Determinens whether each program can perform the intended task | 0.75 | 3 | 3 | 6.75 |  |  |  |  |
| 28 | Quality of code in terms of speed and space | 0.5 | 3 | 3 | 4.5 |  |  |  |  |
| 29 | Testing finds out that the system does not produce expected result | 0.5 | 3 | 4 | 6 |  |  |  |  |
| **Infrastructure Risks** | |  |  |  |  |  |  |  |  |
| 30 | Prepare site for new proposed system | 0.75 | 4 | 4 | 12 |  |  |  |  |
| 31 | Requied hardware withine a system | 0.25 | 2 | 4 | 2 |  |  |  |  |
| 32 | observe the system when users of system using it | 0.25 | 3 | 3 | 2.25 |  |  |  |  |
| 33 | Incomplete manual | 0.25 | 3 | 4 | 3 |  |  |  |  |
| 34 | Traning programmm for customer | 1 | 4 | 5 | 20 |  | 0 | 1 | 1 |
| 35 | Availability of infrastructure support during offshore work hours. | 0.5 | 3 | 3 | 4.5 |  |  |  |  |
| 36 | Poor Connectivity to environments, databases, etc. (bandwidth issues / communication links / other network requirements). | 0.25 | 3 | 4 | 3 |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **GUIDELINES FOR RATING** | | | | | |
| **Probability  (Refer item 4)** | | **Time to Impact (Refer item 5)** | | **Mitigation Plan  (Refer item 6)** | |
|
| Rating | Description | Rating | Description | Rating | Description |
| 1.00 | Will occur | 1 | Beyond 6 months | 1 | Excellent mitigation strategy & well documented & tested. |
| 0.75 | High probability | 2 | 3-6 months | 2 | Mitigation strategy exists & is very effective & also been tested. |
| 0.50 | Medium | 3 | 2-3 months | 3 | Mitigation strategy in place & will be fairly effective. |
| 0.25 | Low probability | 4 | In 1 month | 4 | Mitigation strategy exist but not documented & may not be very effective. |
| 0.00 | Will not occur | 5 | Immediate02 | 5 | No mitigation strategy in place |



Chapter 3

DESIGN

**Solution Description**

* It helps to allot the subject code to the particular staff
* It provides the facility to have a user name and password to the staff
* It will retrieve the subject information from the subject database and assign time table to the staff
* It will to makes to the attendance database all students entered attendance to store in the database subject, period wise into the particular date.
* It will help to the get report of weekly and consolidate of the attendance
* It assists the staff to make attendance to the student for their subject this will authenticate the staff before making the entry.

**High Level Architecture**

Browser

Repots

Printer

GUI

UI layer

External interface

External

File

Web services

API

Business layer

Data layer

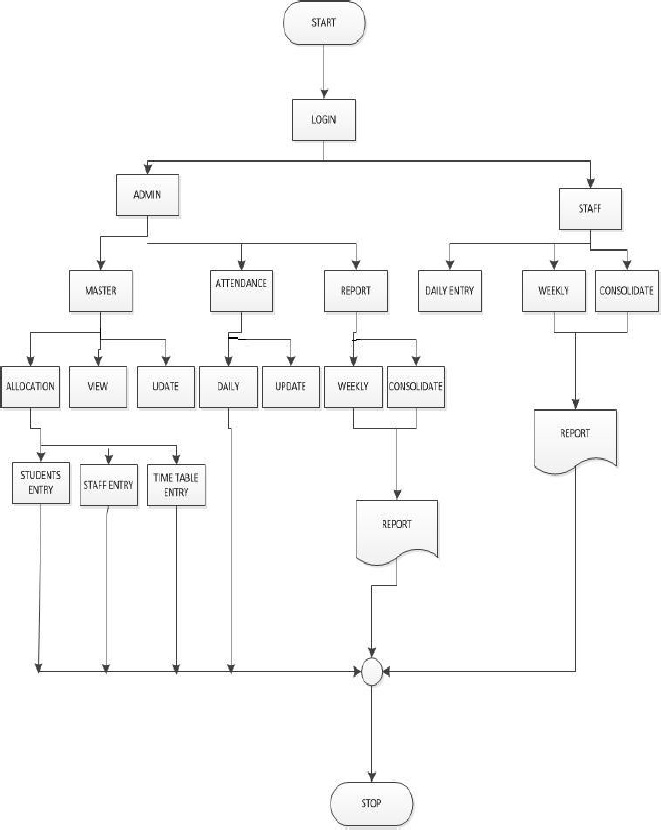
Email

Server

Message gateway

DB

**Designing model**



**ER DIGRAM**

has

Course

Admin

has

report

Attendance

student

subject

Faculty

have

Institute

has

has

teach

select

**Data Flow Diagram**

**LEVEL 0.0**

Database

Call Less Attendance System

0.0

USER

REPORT

**LEVEL 1.0**

**LEVEL 2.0 Attendace Tracker**

INVALID

UID/PWD

ENTER

CHECK

USER DATABSE

PERSON

TEACHER

STUDENT

Database

QR CODE

QR CODE

ATTENDACE

**Level 2.0.1 Start Attendace**

TEACHER

STUDENT

ATTENDACE FOR

CLASS AND SUBJECT

STUDENT ID

QR CODE

QR CODE

USER DATABSE

**Level 2.0.2 Record Attendace**

USER DATABSE

TEACHER

STUDENT

SCAN QR CODE

QR CODE

OPEN QR CODE

RECORD ATTENDACE

HAND OVER QR CODE

**Class Diagram**



USE-CASE DIAGRAM



**Test Scenario**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Ts Id | Req Id | Scenario | Expected result on that scenario | Actual result |
| TS01 | RQ01 | UGC recognized institute | verified |  |
| TS02 | RQ05 | To allocate separate Roll no for this students | Inserted successfully |  |
| TS03 | RQ05 | To accept valid phone no and Email address | Inserted successfully |  |
| TS04 | RQ02 | Username and Password | Login successfully |  |
| TS05 | RQ03 | Faculty have username and password | Login successfully |  |
| TS06 | RQ03 | Faculty have valid phone no and email address | Inserted successfully |  |
| TS07 | RQ04 | Valid courses name | Inserted successfully |  |
| TS08 | RQ06 | Provide all details for report | Generated |  |
| TS09 | RQ07 | To collect all valid subject details | Inserted successfully |  |
| TS10 | RQ03 | Faculty have single subject code | verify |  |
| TS11 | RQ06 | Weekly report(To select source and destination) | Retrieved successfully |  |

**Issue Register**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Iss Id | Issue | Description | Issue Type | Possible Resolution | Expected Date of closer | Current Status |
| IS01 | Adequate Requirement | Client gives incomplete information about system | Standards | SRS will be well documented | 30-04-2018 | close |
| IS02 | Login fail | Admin forgot login details | Standards | Provide manual for admin | 5-05-2018 | open |
| IS03 | student validations | Incomplete details | Standards | Provide proper validations | 10-5-2018 | open |
| IS04 | Faculty details | Wrong course wise faculty details | Standards | Unique id for course | 10-5-2018 | open |
| IS05 | Timing details | Wrong time table | Standards | To update time table | 20-5-2018 | open |
| IS06 | Report | Specific type of report | Standards | All report type | 30-5-2018 | open |
| IS07 | Course | Semester wise not updated | Standards | Update sem wise | 30-5-2018 | open |

**Assumption List**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Ass Id | Assum  ption | Description | Target date of closure | Current Status |
| AS01 | Requirement | After completion of requirement we start design | 28-04-2018 | open |
| AS02 | Design | All designing tools used for documentation | 30-04-2018 | open |
| AS03 | Test | All test case are validate data | 25-05-2018 | open |
| AS04 | Planning/ Execution | All project resources will remain available throughout the project lifecycle. | 30-05-2018 | open |