BUDGET APPROVAL SYSTEM

A

Project Report

submitted

in partial fulfillment

for the award of the Degree of

Bachelor of Technology

in Department of Computer Science and Engineering

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DECLARATION

We hereby declare that the report of the project entitled ”Budget Approval System” is a record of an original work done by us at Swami Keshvanand Institute of Technology, Management and Gramothan, Jaipur under the mentorship of ”Ms. Aakriti Sharma” (Dept. of Computer Science and Engineering) and coordination of ”Mr. Ashish Pant” (Dept.of Computer Science and Engineering). This project report has been submitted as the proof of original work for the partial fulfillment of the requirement for the award of the degree of Bachelor of Technology (B.Tech) in the Department of Computer Science and Technology.It has not been submitted anywhere else, under any other program to the best of our knowledge and belief.

Team Members

Signature

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Acknowledgement

A project of such a vast coverage cannot be realized without help from numerous sources and people in the organization.We take this opportunity to express our gratitude to all those who have been helping us in making this project successful.

We are highly indebted to our faculty mentor Ms. Aakriti Sharma .She has been a guide, motivator source of inspiration for us to carry out the necessary proceedings for the project to be completed successfully. We also thank our project coordinator Dr. Chothmal Choudhary for his co-operation, encouragement, valuable suggestions and critical remarks that galvanized our efforts in the right direction.

We would also like to convey our sincere thanks to Prof. Dr. Mukesh Gupta, HOD, Department of Computer Science and Engineering, for facilitating, motivating and supporting us during each phase of development of the project.Also, we pay our sincere gratitude to all the Faculty Members of Swami Keshvanand Institute of Technology, Management and Gramothan, Jaipur and all our Colleagues for their co-operation and support.

Last but not least we would like to thank all those who have directly or indirectly helped and cooperated in accomplishing this project.

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Contents

List of Figures

List of Tables

1.
Project Chapter

1.1 Problem Statement and Objective

This project is aimed at developing a system by which the employees in the organization submit the bills to their managers. The bills could be of various types and also of various amounts. The employee after submitting the bill will automatically provide the It manager's name to which the bill will be submitted. The bill will pass through a workflow process and the owner of the bill can view the status of the bill at any time. An email will be sent to the manager and the higher authorities to let them know about the status of the bill. After confirmation of email within a day or two employees will get the amount of bill credited to their account

1.2 Literature Survey /Market Survey/Investigation & Analysis

It is a powerful marketing budget software that empowers your team to manage budgets and track expenses. Easily plan, configure, and visualize budgets so you can ensure that your marketing spend always aligns with the broader goals of your business. Gain the data-driven insights you need to make more accurate and effective return on investment and return on effort calculations, leading to more impactful brand experiences. Plan & Spend uniquely collects data starting from content planning and going

1.3 Introduction to Project

Budget Management System is a web application aimed at developing a system by which the employees in the organization submit the bills to their managers. The bills could be of various types and also of various amounts. The employee after submitting the bill will automatically provide the It manager's name to which the

bill will be submitted. The bill will pass through a workflow process and the owner of the bill can view the status of the bill at any time. An email will be sent to the manager and the higher authorities to let them know about the status of the bill. After confirmation of email within a day or two employees will get the amount of bill credited to their account.

1.4 Proposed Logic / Algorithm / Business Plan / Solution / Device

Budget Management provides real-time insight into budgets using clear dashboards and reports. With this up-to-date information, budget managers can control their spending and make better decisions based on reliable, accurate data.

The solution provides highly effective budget management to not only help you manage your cash better, but to create and maintain financial control, and improve your financial and performance measurement. This added control greatly enhances cost awareness around your

1.5 Scope of the Project

- There are four basic users - Admin, Managers and Employee.
- Employees can submit and track their bills for approval on their individual profiles.
- Employees can view their personal information and edit them also.
- Managers can view, approve, add comments and reject the bills submitted to them by employees for approval.
- Managers can assign different projects to different employees & view their personal details.
- Auto-generated mail is sent to the employee if there are any changes in the bill status.

- Admin has the sole authority to add and delete employees and managers.
- Only the admin can assign a manager to an employee.
- Admin has all the other privileges as well.

2.
Software Requirement Specification

2.1 Overall Description

This project is aimed at developing a system by which the employees in the organization submit the bills to their managers. The bills could be of various types and also of various amounts. The employee after submitting the bill will automatically provide the It manager's name to which the bill will be submitted. The bill will pass through a workflow process and the owner of the bill can view the status of the bill at any time. An email will be sent to the manager and the higher authorities to let them know about the status of the bill. After confirmation of email within a day or two employees will get the amount of bill credited to their account.

2.1.1 Product Perspective

2.1.1.1 Software Interfaces

- Client on Internet: Web Browser, Operating System (any)
- Client on Intranet: Web Browser, Operating System (any)
- Web Server: Operating System (any)
- Database Server: MySQL, Operating System (any)
- Development End: RAD (Django,ReactJS,BootStrap), MySQL, OS (Windows)

2.1.1.2 Hardware Interfaces

Minimum Requirements:

- Client Side: Internet Explorer - 6
  - Processor: 1.9 gigahertz (GHz) x86- or x64-bit dual core processor with SSE2 instruction set
  - RAM: 2 GB
  - Disk Space: 3.5 GB
- Server Side: RAD
  - Processor: 1.9 gigahertz (GHz) x86- or x64-bit dual core processor with SSE2 instruction set
  - RAM: 2 GB
  - Disk Space: 3.5 GB

Recommended Requirements:

- Client Side: Google Chrome
  - Processor: 3.3 gigahertz (GHz) or faster 64-bit dual-core processor SSE2 instruction set
  - RAM: 4 GB or more
  - Disk Space: 217 GB
- Server Side : RAD
  - Processor: 3.3 gigahertz (GHz) or faster 64-bit dual-core processor SSE2 instruction set
  - RAM: 4 GB or more
  - Disk Space: 217 GB

2.1.1.3 Communications Interfaces

- Employees and Managers on the Internet will be using HTTP/HTTPS protocol.
- Administrator on the Internet will be using the HTTP/HTTPS protocol.

2.1.1.4 Memory Constraints

This should specify any applicable characteristics and limits on primary and secondary memory. (e.g., system shall use no more than 50 Mb of storage and 100 MB of RAM.)

2.1.1.5 Operations

This should specify the normal and special operations required by the user such as:

- The various modes of operations in the user organization (e.g. user-initiated operations)
- Periods of interactive operations and periods of unattended operations
- Data processing support functions
- Backup and recovery operations Note: This is sometimes specific as part of the User Interfaces (Section 2.1.2). If this separate from User Interface Section, then cover business process type stuff that would impact the design.For instance, If the company brings all their systems down at midnight for data backup that might impact the design. These are all the work tasks that impact the design of an application, but which might not be located in software.

2.1.1.6 Project Functions

This subsection of the SRS should provide a summary of the major functions that the software will perform. (e.g., an SRS for an accounting program may use this part to address customer account maintenance, customer statement, and invoice preparation without mentioning the vast amount of detail that each of those functions requires.). Sometimes the function summary that is necessary for this part can be

taken directly from the section of the higher-level specification (if one exists) that allocates particular functions to the software product. Note that for the sake of clarity.

- The functions should be organized in a way that makes the list of functions understandable to the customer or to anyone else reading the document for the first time.
- Textual or graphical methods can be used to show the different functions and their relationships. Such a diagram is not intended to show a design of a product, but simply shows the logical relationships among variables.

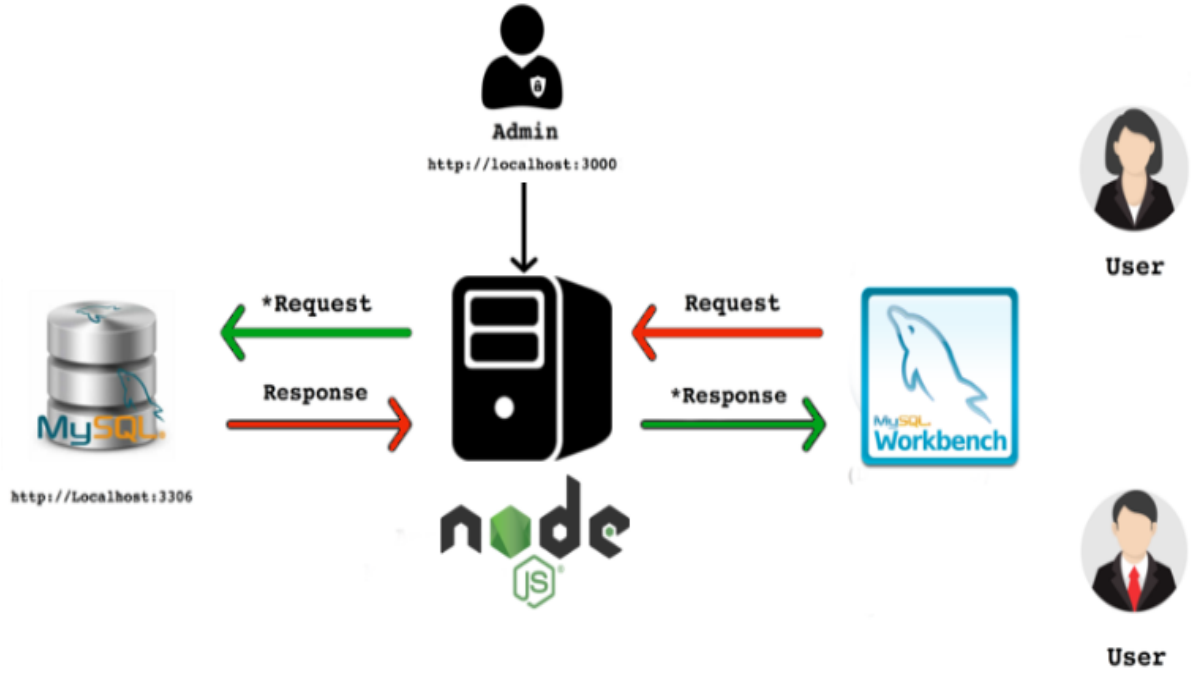

Figure 2.1: Project Function Outline

2.1.1.7 User Characteristics

This subsection of the SRS should describe those general characteristics of the intended users of the product including educational level, experience, and technical expertise. It should not be used to state specific requirements, but rather should provide the reasons why certain specific requirements are later specified in Section 3 of the SRS. For the use case approach, this section will contain the list of the actors that perform the use cases along with their characteristics:

- Admin (Administrator): He has all the privileges and can add/delete employees and managers as well.He can assign a Manager to the Employees as well.
- Manager: Managers can view, approve, add comments and reject the bills submitted to them by employees for approval. They can assign different projects to different employees. They can also view the personal details of an employee.
- Employees: Employees can submit and track their bills for approval on their individual profiles. Employees can view their personal information and edit them also.

2.1.1.8 Constraints

- GUI is only in English.
- Login and password are used for the identification of users.
- Only registered employees and managers will be authorized to use the services.
- Limited to HTTP/HTTPS.
- This system is working for a single server.

2.1.1.9 Assumption and Dependencies

Assumption for users is that the users are well aware of using websites and computer systems and have a good internet connection.

3.
System Design Specification

3.1 System Architecture

This section of the Report should contain all of the software requirements to a level of detail sufficient to enable designers to design a system to satisfy those requirements, and testers to test that the Report Template system satisfies those requirements. Throughout this section, every stated requirement should be externally perceivable by users, operators, or other external systems. These requirements should include at a minimum, a description of every input (stimulus) into the system, every output (response) from the system, and all functions performed by the system in response to an input or in support of an output. As this is often the largest and most important part of the Report, the following principles apply:

- a) Specific requirements should be stated in conformance with all the characteristics given below:
  - Correct & Unambiguous
  - Complete
  - Consistent
  - Ranked for importance and/or stability
  - Verifiable
  - Modifiable & Traceable
- b) Specific requirements should be cross-referenced to earlier documents that relate.
- c) All requirements should be uniquely identifiable.
- d) Careful attention should be given to organizing the requirements to maximize readability.

3.2 High Level Design Diagrams

3.2.1 Use Case Diagram

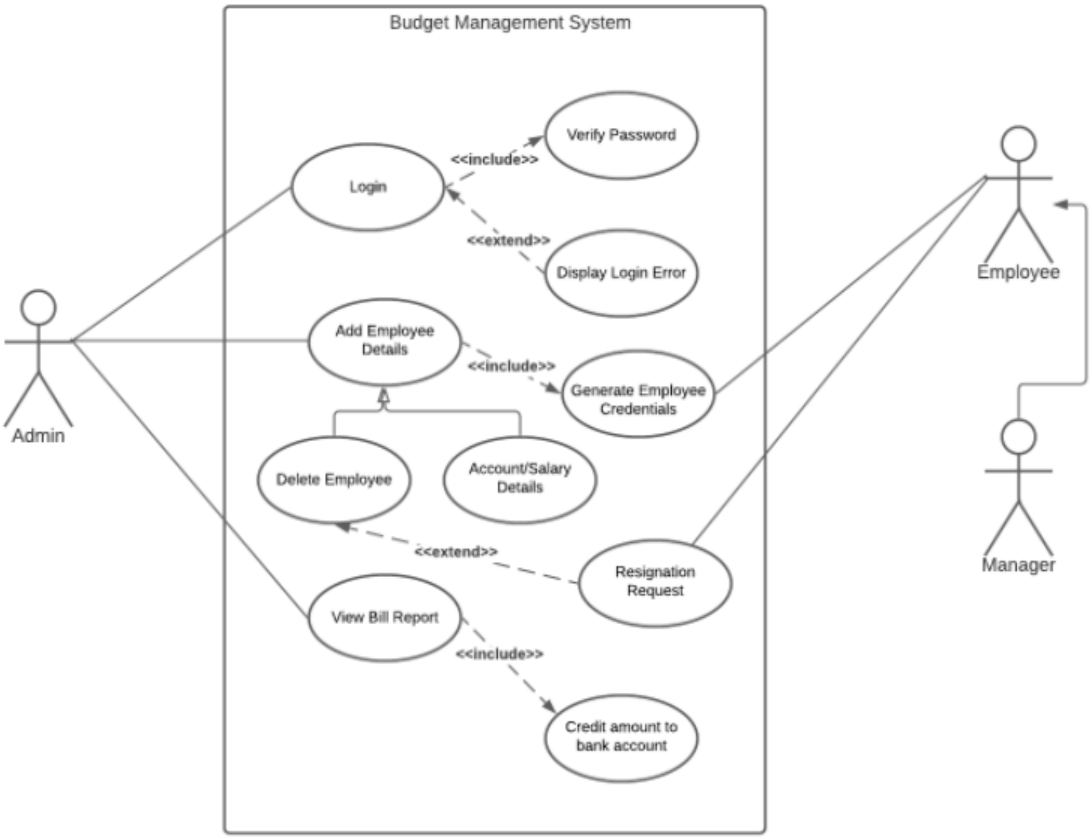

Figure 3.1: Admin Use Case Diagram

Use Case	Description
SignIn	The admin has to SignIn.
Add Employee	Admin will only be allowed to add employees and assign a manager
Delete Employee	Admin has access to remove employees.
Account/Salary Details	Admin will assign salary and account related details.
View Bill Report	Admin will view all the bills report submitted by managers
Generate Credentials	Admin will generate credentials and employees will access the credentials.

Table 3.1: Admin Use Cases

Figure 3.2: Employee Use case Diagram

Use Case	Description
Login	Employees will Login from given credentials.
Set Up Profile	Employees will be able to update their address, phone no, general information.
Bill Submission	They can submit bill related documents and the bill submission form
Track Bill Notification	Employees can track their bill submission status.

Table 3.2: Employee Use Cases

3.2.2 Activity Diagram

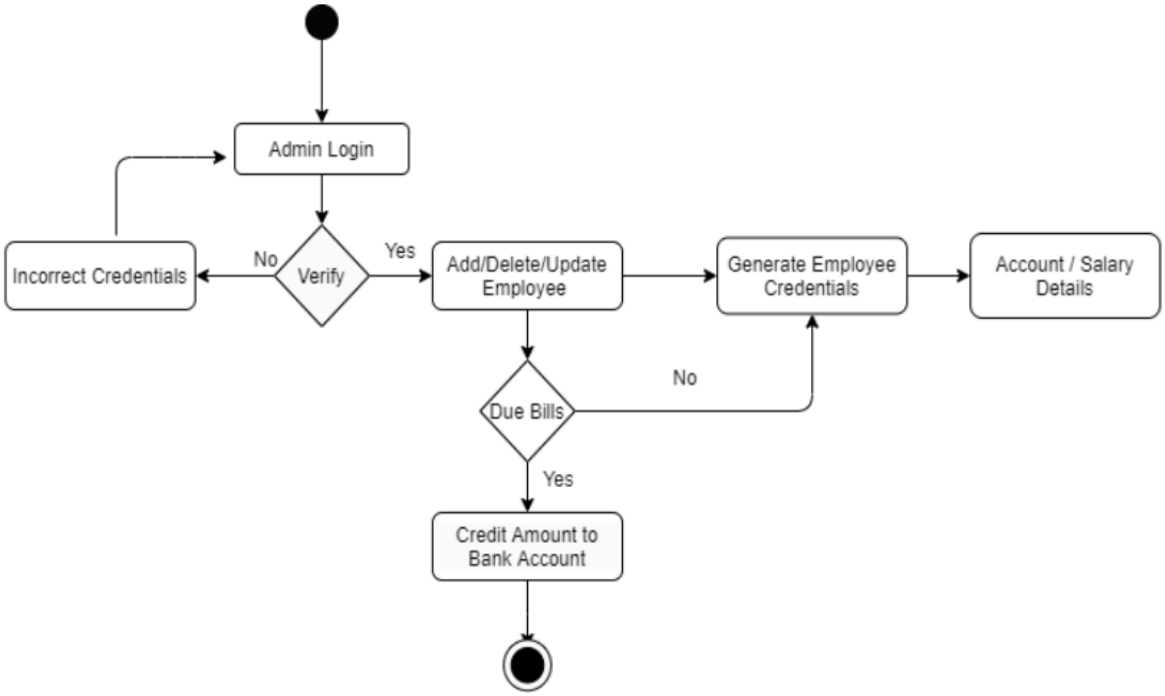

Figure 3.3: Admin Activity Diagram

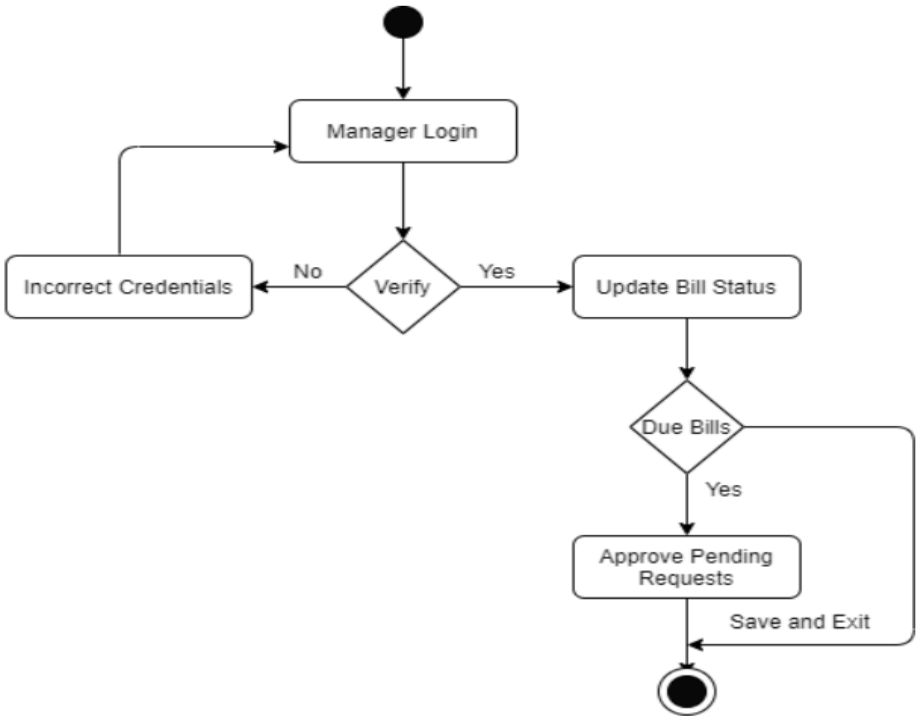

Figure 3.4: Manager Activity Diagram

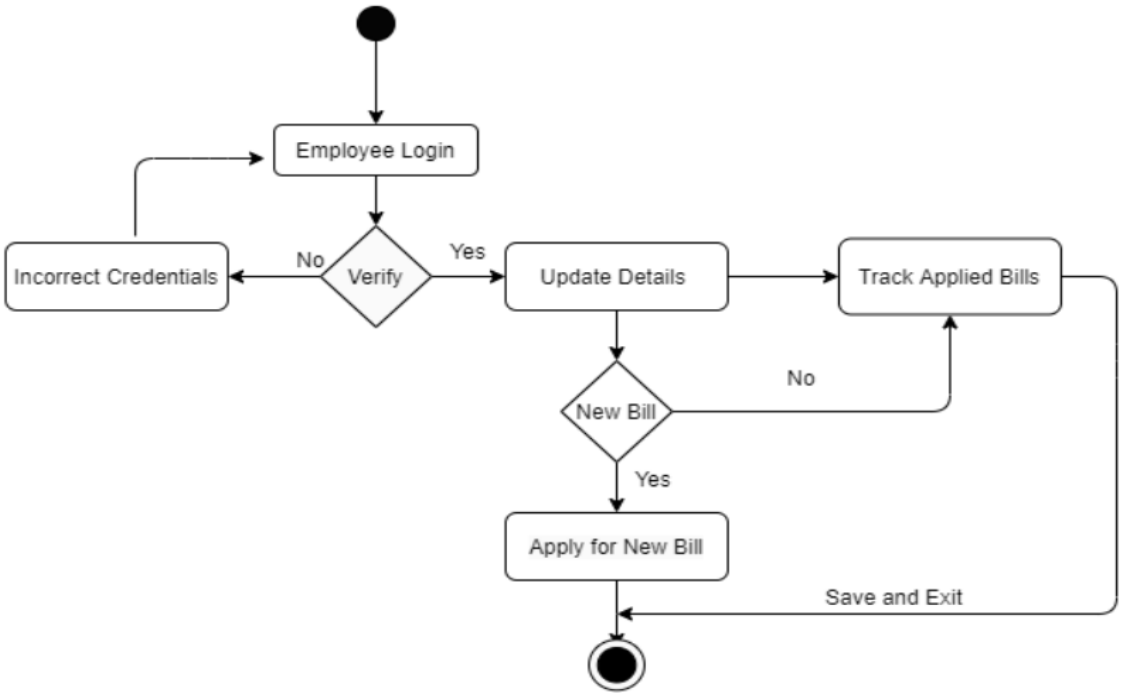

Figure 3.5: Employee Activity Diagram

3.2.3 Data-Flow Diagram

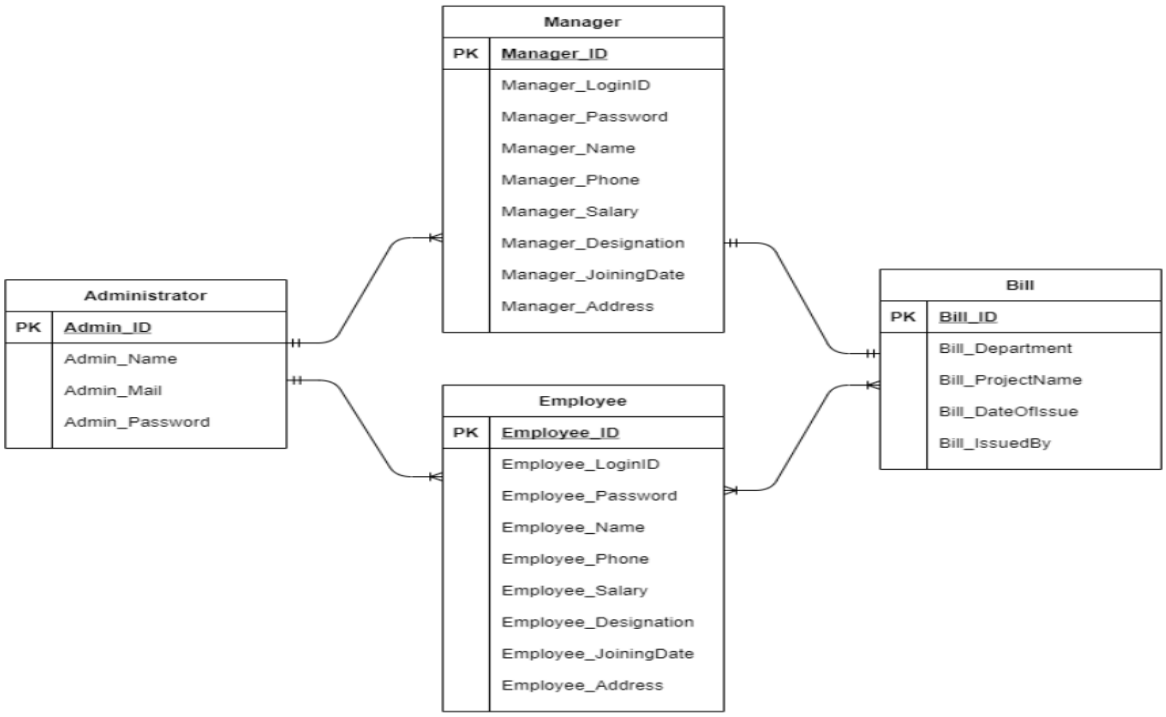

Figure 3.6: Data flow Diagram

4.
Methodology and Team

4.1 Rational Unified Process:

The Rational Unified Process brings together elements from all of the generic process models, supports iteration and illustrates good practice in specification and design. The RUP is normally described from three perspectives:

- A dynamic perspective that shows the phases of the model over time.
- A static perspective that shows the process activities that are enacted.
- A practice perspective that suggests good practices to be used during the process.

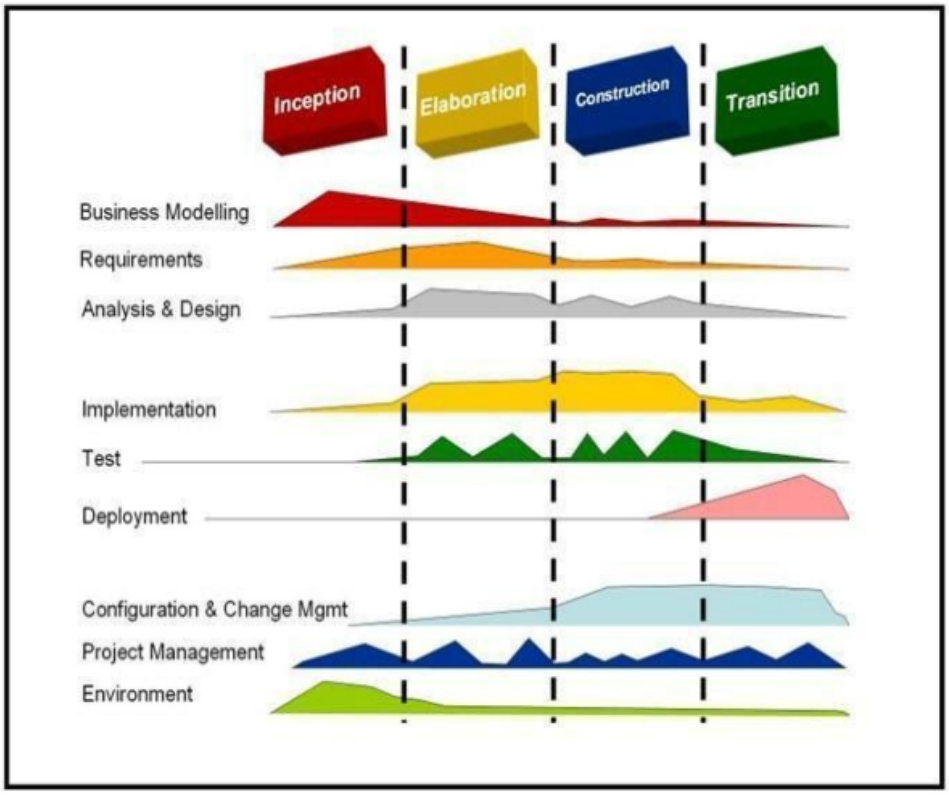

Figure 4.1: Rational Unified Process model

The different phases in RUP are:

1. **Inception:** The goal of the inception phase is to establish a business case for the system. Identifying all external entities that will interact with the system and defining these interactions. This information is used to assess the contribution of the system to business.

2. **Elaboration:** The goals of the elaboration phase are to develop an understanding of the problem domain, establish an architectural framework, develop a project plan and identify key project risks.

3. **Construction:** This phase is concerned with system design, programming and testing. Parts of the system are developed in parallel and integrated during this phase.

4. **Transition:** This is the final phase of RUP and is concerned with moving the system from the development community to the user community and making it work in a real environment.

All these phases are cascaded to each other in which progress is seen as flowing steadily downwards through the phases. The next phase is started only after the defined set of goals are achieved for previous phase and it is signed off, so the name ”RUP Model”. In this model phases do not overlap.

RUP Model Pros & Cons

Advantage: The advantage of RUP development is that it allows for departmentalization and control. A schedule can be set with deadlines for each stage of development and a product can proceed through the development process model phases one by one. Development moves from concept, through design, implementation, testing, installation, troubleshooting, and ends up at operation and maintenance. Each phase of development proceeds in strict order.

Disadvantage: The disadvantage of RUP development is that it does not allow for much reflection or revision. Once an application is in the testing stage, it is very

difficult to go back and change something that was not well-documented or thought upon in the concept stage.

4.2 Team Members, Roles & Responsibilities

- Abhishek Yadav- Provides the design and layout of pages for Admin, Manager and Employee Dashboard.
- Amisha Aggarwal - Handles the Frotend development for the Project model.
- Anagh Kumar - Handles the Backend part of the Project using Django.
- Anshuman Yadav - Handles the database design of the system using MySQL.

5.
Centering System Testing

The designed system has been testing through following test parameters.

5.1 Functionality Testing

In testing the functionality of the web sites the following features were tested:

1. Links
   (a) Internal Links: All internal links of the website were checked by clicking each link individually and providing the appropriate input to reach the other links within.
   (b) External Links: Till now no external links are provided on our website but for future enhancement we will provide the links to the candidate's actual profile available online and link up with the elections updates online etc.
   (c) Broken Links : Broken links are those links which so not divert the page to specific page or any page at all. By testing the links on our website, there was no link found on clicking which we did not find any page.
2. Forms
   (a) Error message for wrong input : Error messages have been displayed as and when we enter the wrong details (eg. Dates), and when we do not enter any details in the mandatory fields. For example: when we enter wrong password we get error message for acknowledging us that we have entered it wrong and when we do not enter the username and/or password we get the messages displaying the respective errors.
   (b) Optional and Mandatory fields : All the mandatory fields have been marked with a red asterisk (*) and apart from that there is a display of error messages when we do not enter the mandatory fields. For example: As the first

name is a compulsory field in all our forms so when we do not enter that in our form and submit the form we get an error message asking for us to enter details in that particular field.

3. Database Testing is done on the database connectivity.

6.

Test Execution Summary

Execution Test Summary Report is an overall view of Testing Process from start to end. Test Plan comes at the starting of project while Test Summary Report comes at the end of the testing process. This report is given to the client for his understanding purpose. The Test Summary Report contents are :

1. Functions
2. Description
3. % Test Cases Executed
4. % Test Cases Passed
5. Priority

Functions	Description	% Test Case Executed	% Test Case Passed	Priority
Create Employee	Check New Employee is Created	100	100	High
Monthly report	Monthly report generated and sent to admin in pdf format	100	100	High
Amount and Bill limit	Total amount and Bill generation	100	100	High
Otp and Firebase	Login Functionality using Google Authentication and Firebase	100	100	High
Auto generated E-Mail	E-mail Authentication and received by Admin and Manager	100	100	Low

Table 6.1: Table to test captions and labels

7.

Project Screen Shots

Figure 7.1: Landing Page(i)

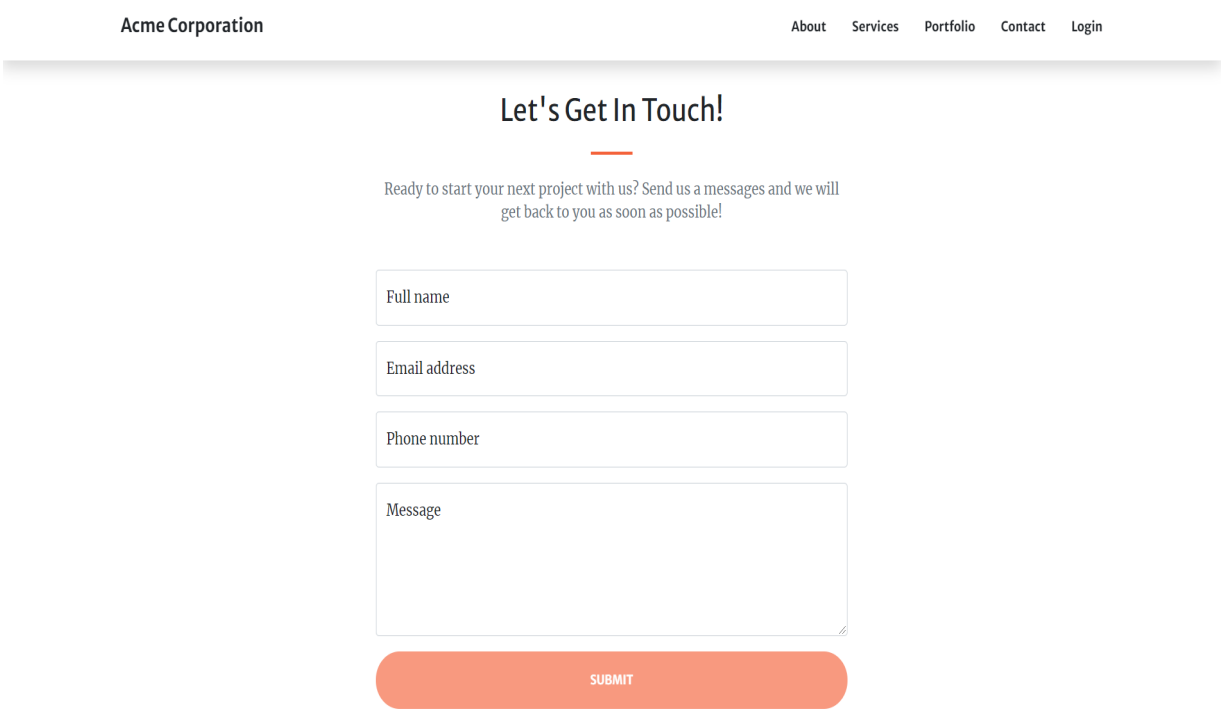

Figure 7.2: Landing Page(ii)

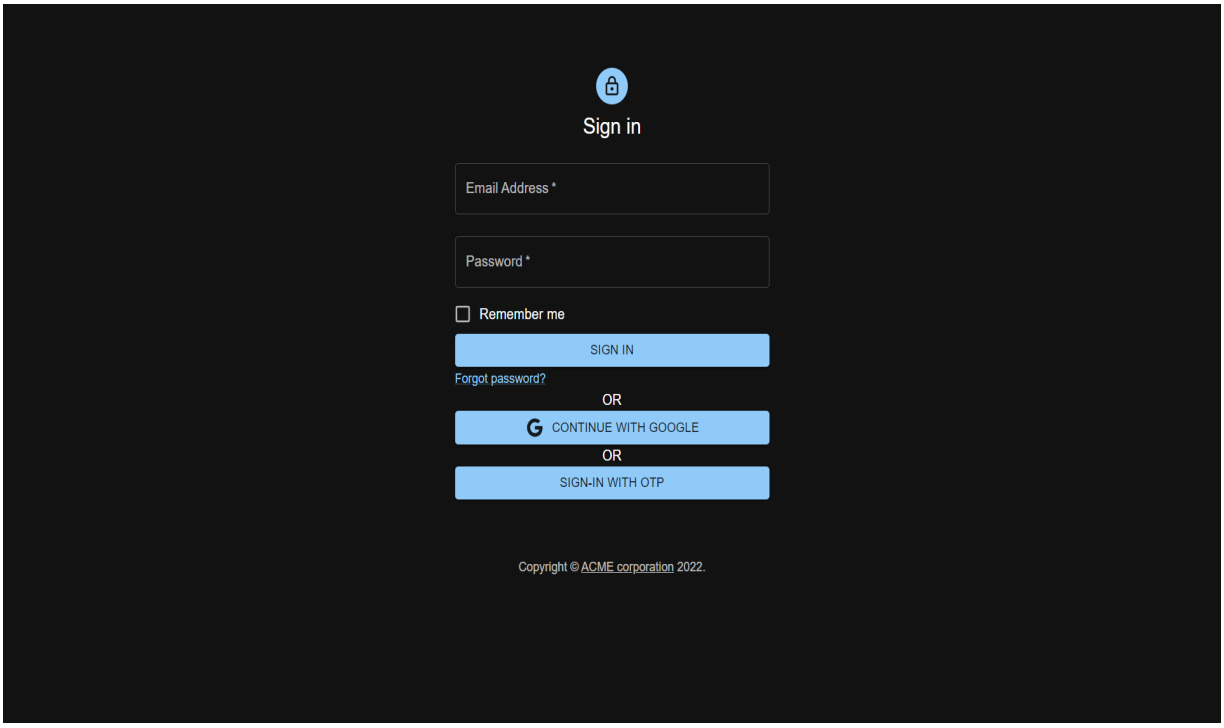

Figure 7.3: Login Page

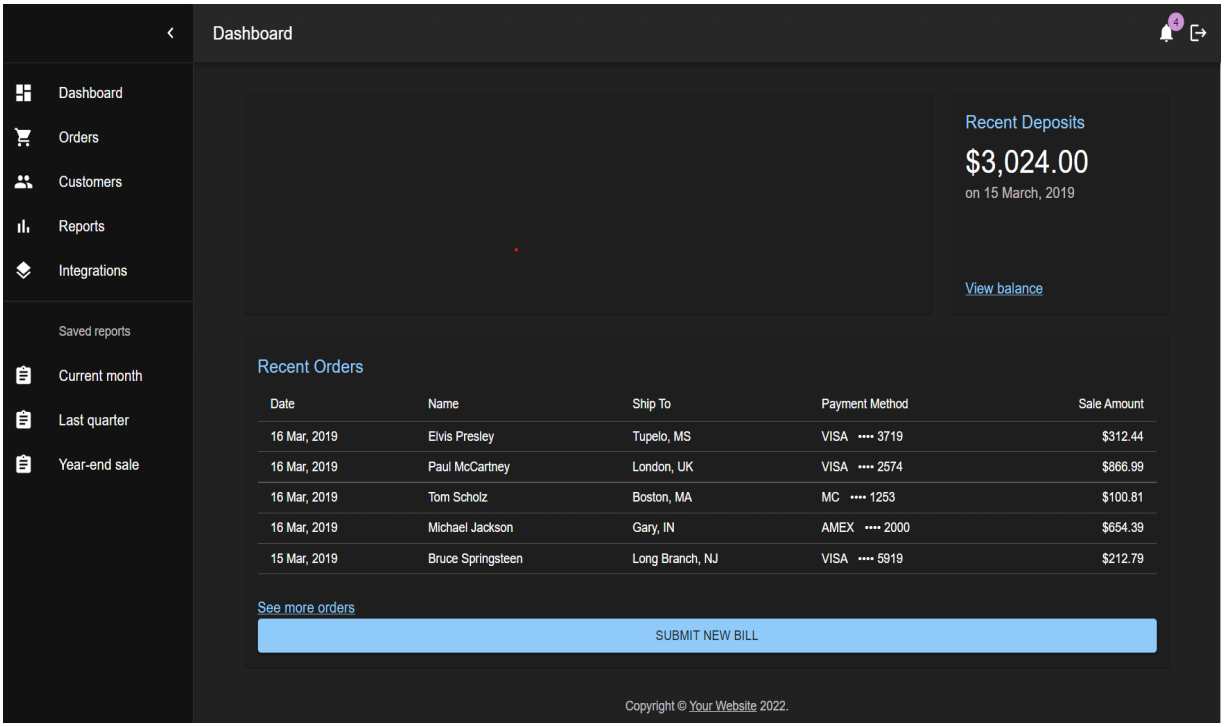

Figure 7.4: Admin Page (i)

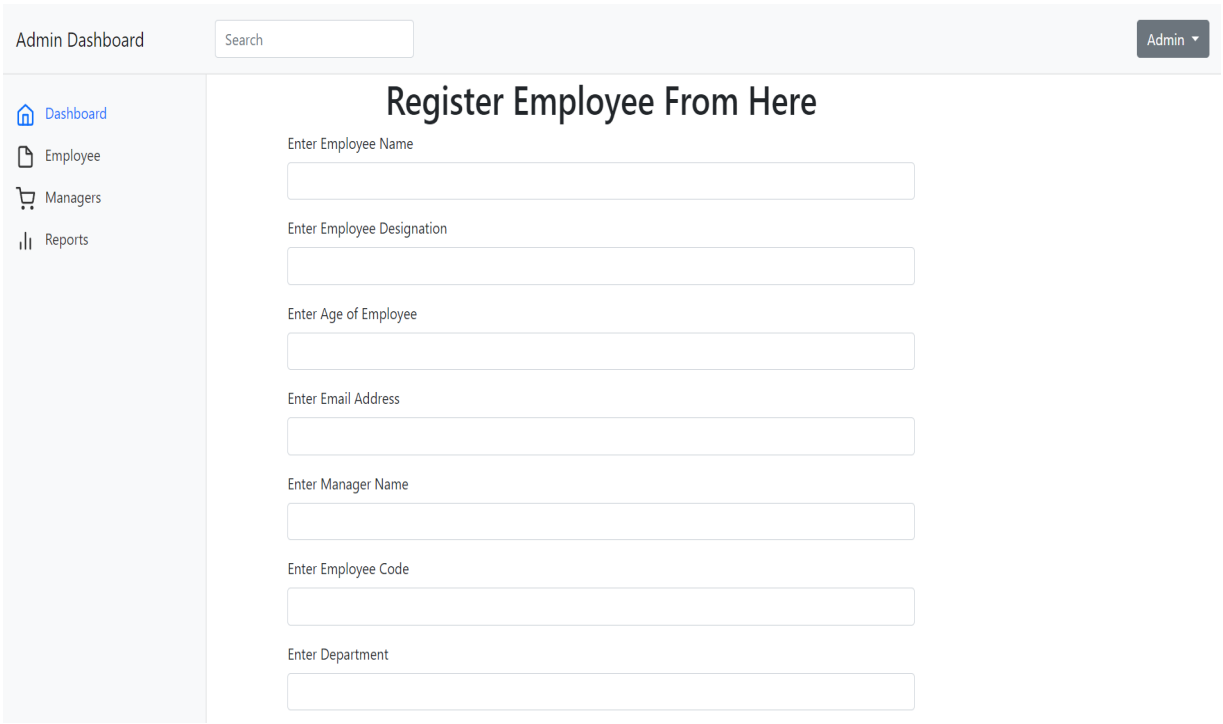

Figure 7.5: Admin Page (ii)

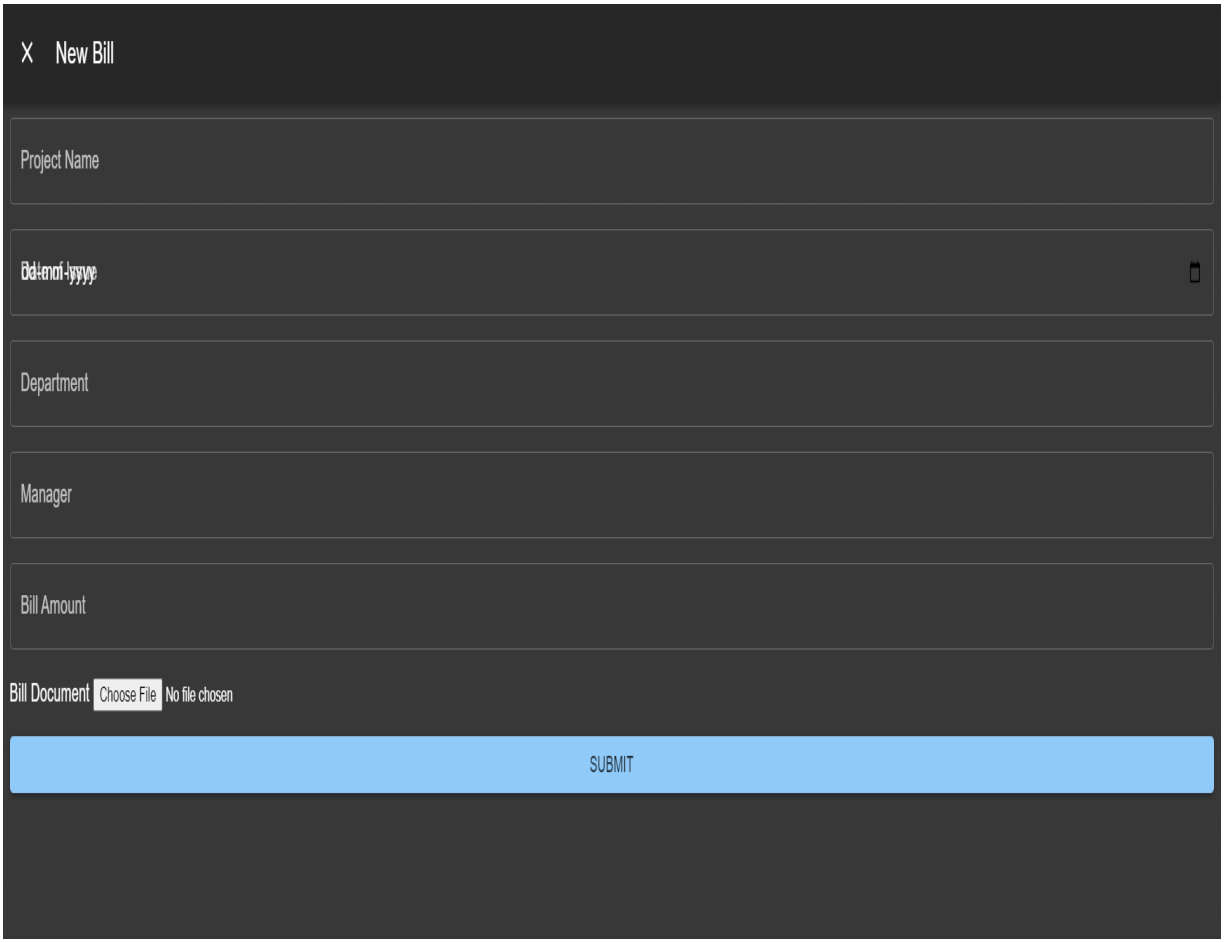

Figure 7.6: Employee Page

8.
Project Summary and Conclusions

Budget Approval System is a very efficient and crucial software required by the companies for smooth functioning of the organizations.It helps the employees apply for bills and keep track of their bill progress, Managers are able to approve , decline and put the requests on hold.

8.1 Conclusion

- Convenience: Simple and easy to use platform is made for budget approval.
- Scalability: This system can be scaled easily to meet the requirements of bigger organization.
- Accessibility: The System has varied access levels for admin,managers and employees which makes it secure and reliable.

9.
Future Scope

It helps a company or organization to know and track the budget assigned to different departments, and also helps employees to track the status of bills that they have submitted. This project reduces the workload of the manager and employees. We have learnt about various technologies including Frontend(HTML, CSS, Bootstrap), Backend(NodeJS) and Database(MySQL).

- Efficient method for budget approval helps smooth functioning of organizations.
- Reduces time taken for the process.
- Easy to manage log of all the transactions.

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