DOUGLAS COLLEGE

Computing Studies & Information Systems

"Applied Research Project"

Fall 2022: CSIS 4495 – Section 050

Progress Report 1

"TeamSavvy"

by:

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Statement of the Problem:

The Employee Management System helps create an environment that motivates communication and keeps employees and managers working together to meet company goals. It also helps the company to manage the information and activities of employees.

The issue with the existing system is to access data about employee projects, leaves, payroll, and jobs applied internally, for accessing these details an individual has to use different web platforms.

Our system proposes that a person can access the details for projects, work history, team hierarchy, peers, timesheets, leaves and payroll information on one platform. The managers and company owners can access the records of employees and also check the resume of the candidates who applied for jobs on their company website with an improved user interface for a better user experience.

Significance of the study

Who would benefit from this project and how?
Employee Engagement: Our platform will provide employees to add their details, apply for leaves, and check their work history and payroll details on one platform. This will save time for an individual to concentrate on tasks for company growth. Employees can track their growth and improve their working efficiency.

Biometric: We will create an android app to get user biometric timestamp and will store it in the database. Employee can use his biometric to clock-in and clock-out of the system.

Create Dashboard: Our project will provide the dashboard of collective data of employees. A manager or company owner can perform descriptive analysis on employee's data; with respect to programming languages, projects, leaves (sick leave, casual leave) in specific period and, salary. **We will give different graph options to select from and, can create multiple graphs to visualize data and show the dashboard on preview mode and can download it.** The HR at a

company can do analytics; for example, number of employees have knowledge of programming language, salary of each employee in specific project. We will represent this information in a graphical format.

Create Task: The employee can fill his hours he is working on a particular task and then change the status of task to in-progress, after completing the task employee can change the task status to finish. The notification will be sent to the manager that this task has been completed. Manager can track the progress of the tasks assigned to team members.

Improve communication: Our platform provides the information of each employee to others by search option that will let them to stay connected, and an easy path for new joiners to get to know their peers. All in all, improve the connection which will reduce the problem of communication gap within an organization.

Users:

Employee**:**

- An employee will have access to a calendar where he can see clock-in and clock-out for a day
- Check total working hours
- Apply for leaves
- Check his payroll details (Read only),
- Get information of other employee working in an organization for communication
- Can get the team hierarchy
- Check the number and details of projects he is working on
- Employee will have the profile page where he will have his information saved or can update if required
- Can apply on internal jobs
- Apply for resignation

Admin (HR or Manager):

- An admin will have all the functionality that employee has
- Able to see information of employees in his team
- He can perform CRUD operations on them
- Check payroll info and can give increment to an employee

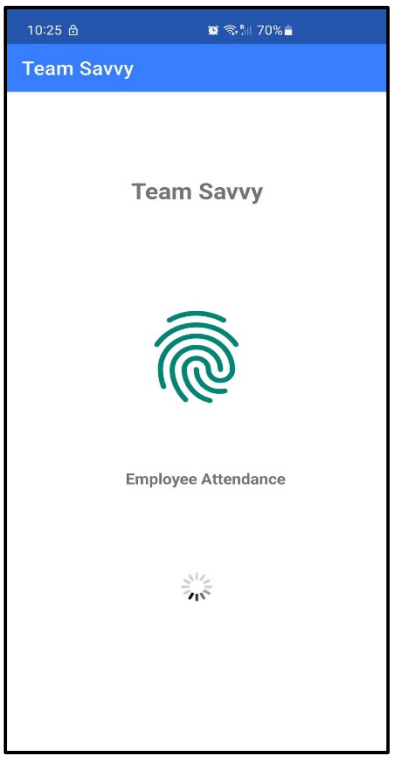
- Admin will have details of project's budget and deadline
- Can assign project to employee
- Modify involvement of employees in different projects,
- Can approve leaves of an employee
- Check timesheets
- Create internal job postings for employees.

- Super admin (Company Owner): A super admin can perform CRUD operations on admins and employees.

Project Implementations:

What have you done so far:

1. **Android App for employee's biometric**



Landing screen for an employee showcasing the project name, image, message for an employee for the attendance and loader.

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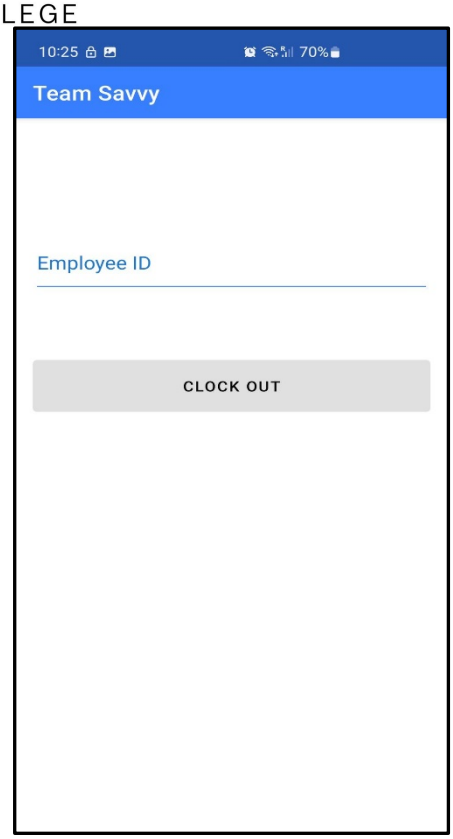
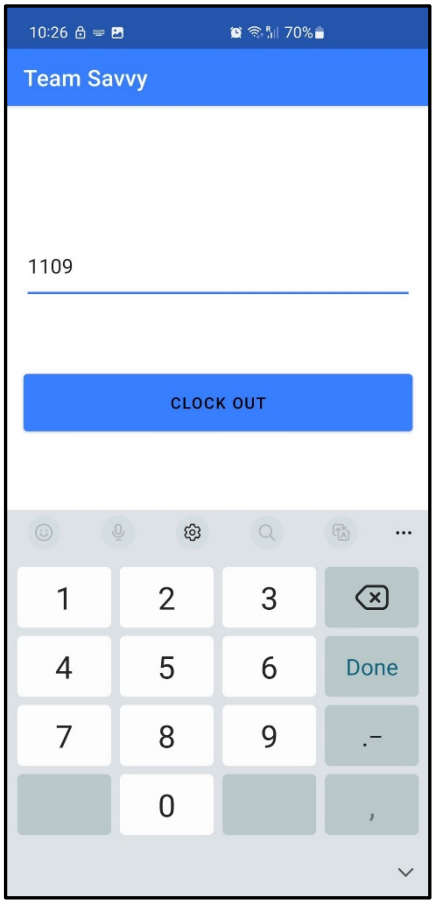
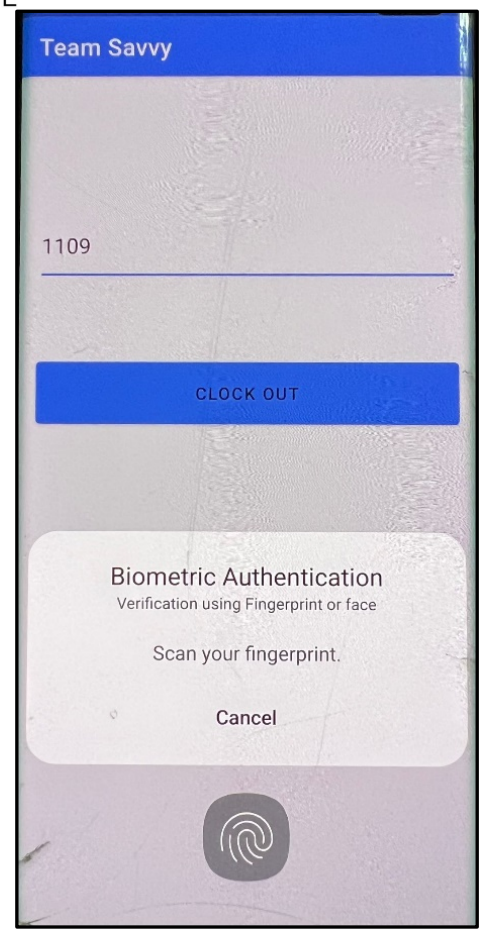
This screen will ask employee for their employee ID and allow him to clock-in or clock-out.
We are still working on design and few features.

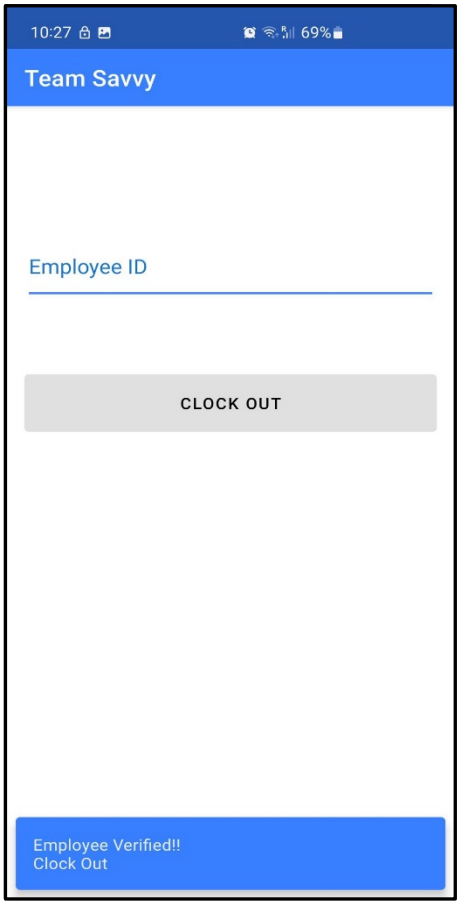




After entering the employee id the button will be activated.

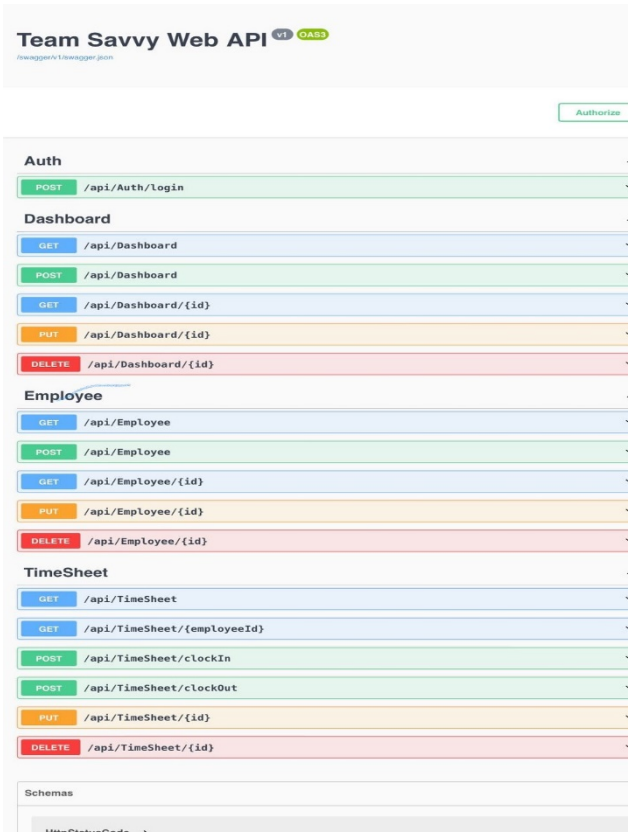
The app will ask for biometric verification, if the fingerprint matches to the record of fingerprint in device the app will accept and allow user to clock-in or clock-out.





At last, the app will show the snackbar to show if an employee has been verified or not also displays the status clock-in or clock-out.

2. APIs



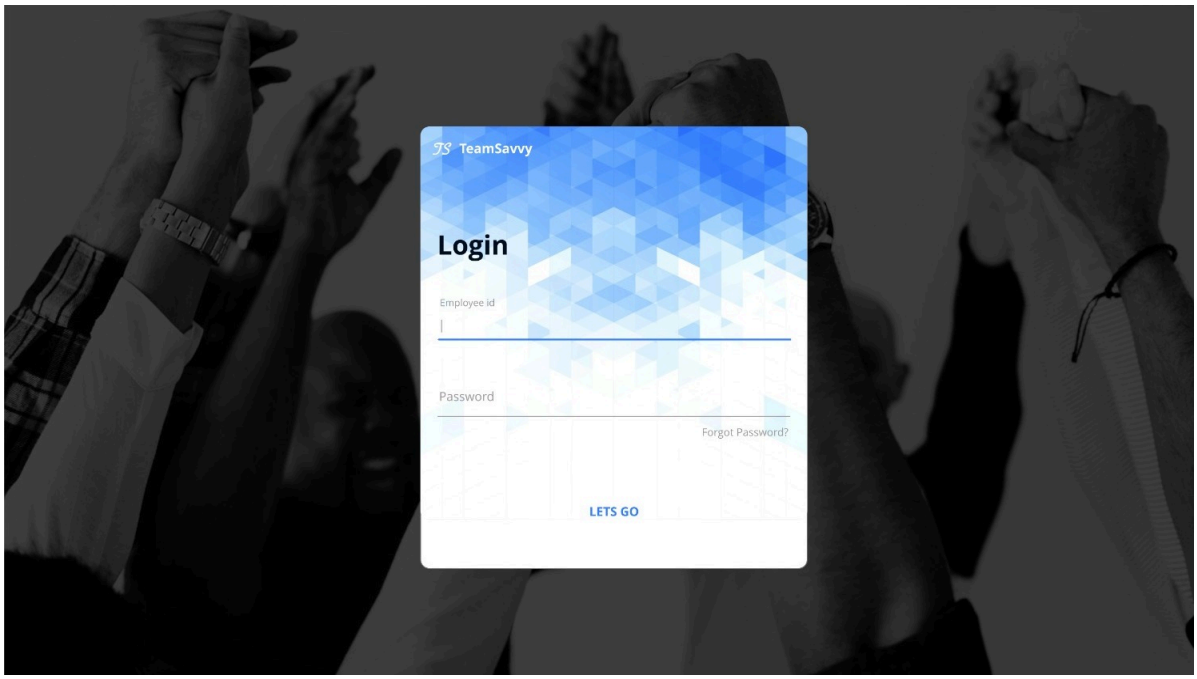
We have created API in .NET CORE which can do authentication and authorization of user, provide employee details, timesheet details of employee and dashboard.

3. UI Design using Adobe XD

The snapshots below shows the flow of our application.

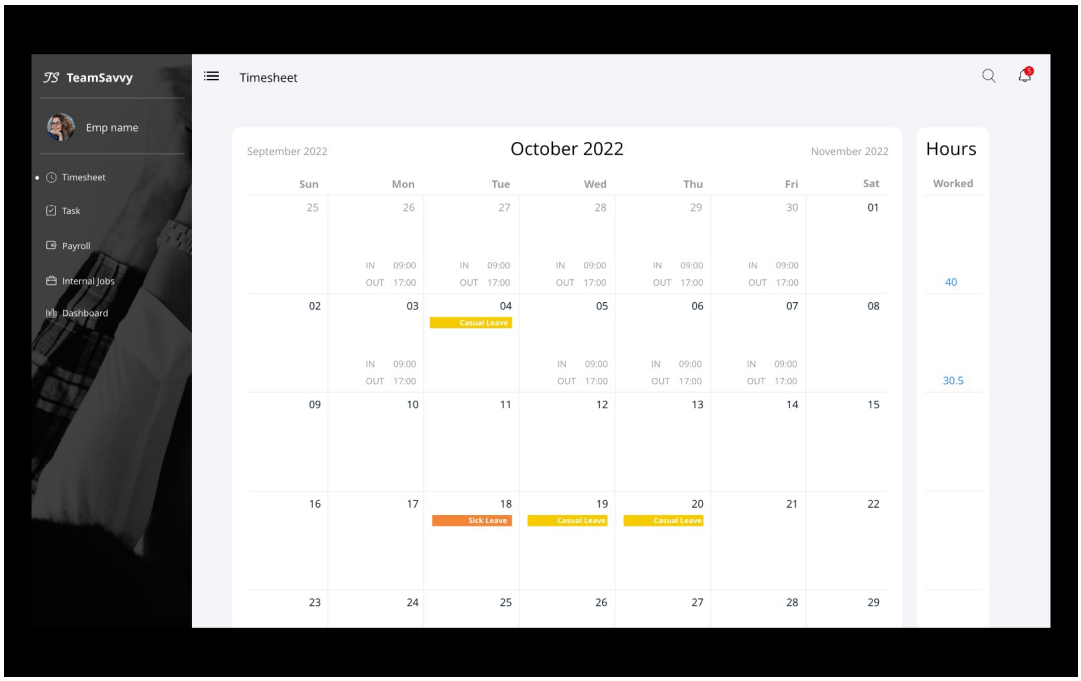
Login:

The employee and admin will login with the predefined credentials provided by organization.



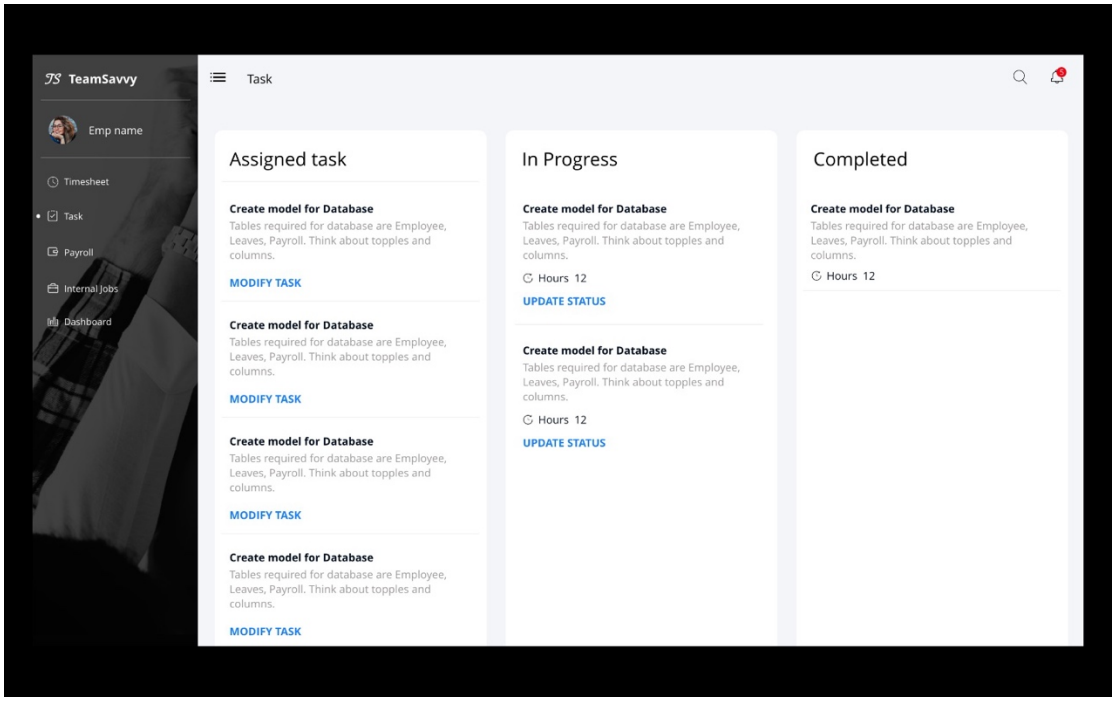
Timesheet:

This screen will show the information of employee clock-in and clock-out, with total hours they worked per week. Additionally, employee can apply for leaves and it will displayed on the calendar



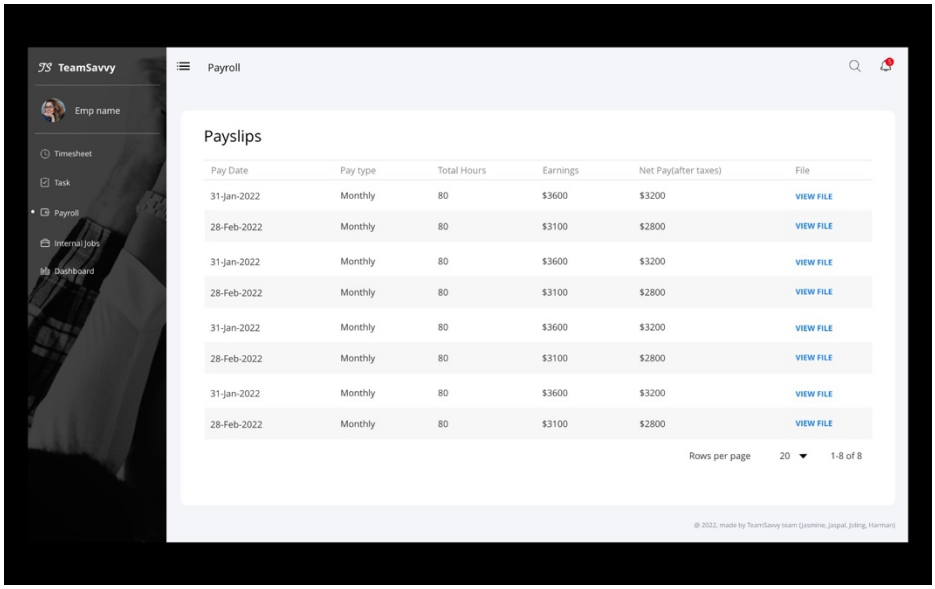
Task:

Task screen will have the assigned task for an employee, which he can modify to add hours, start date, and end date. Employee can also change the status from assigned to in-progress and then by using update status in in-progress lane he can change status to completed.



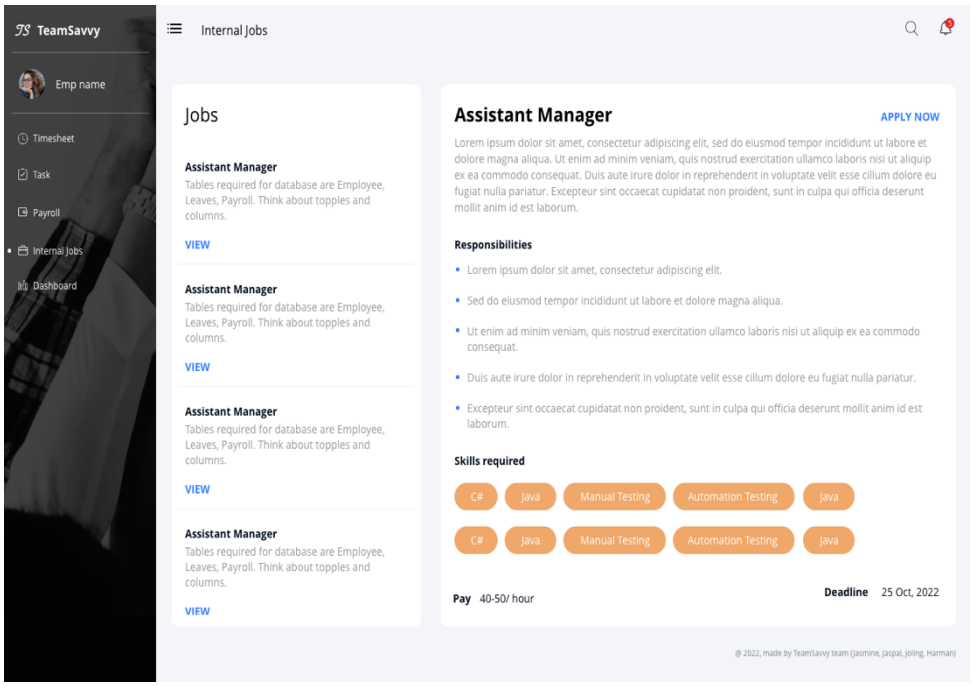
Payroll:

This screen will have the collection of pay slips with information of each month, total hours, and earnings, from here user can view each pay slip. The Pay Slip contains all the Earnings of an employee at the company from the date he has joined.



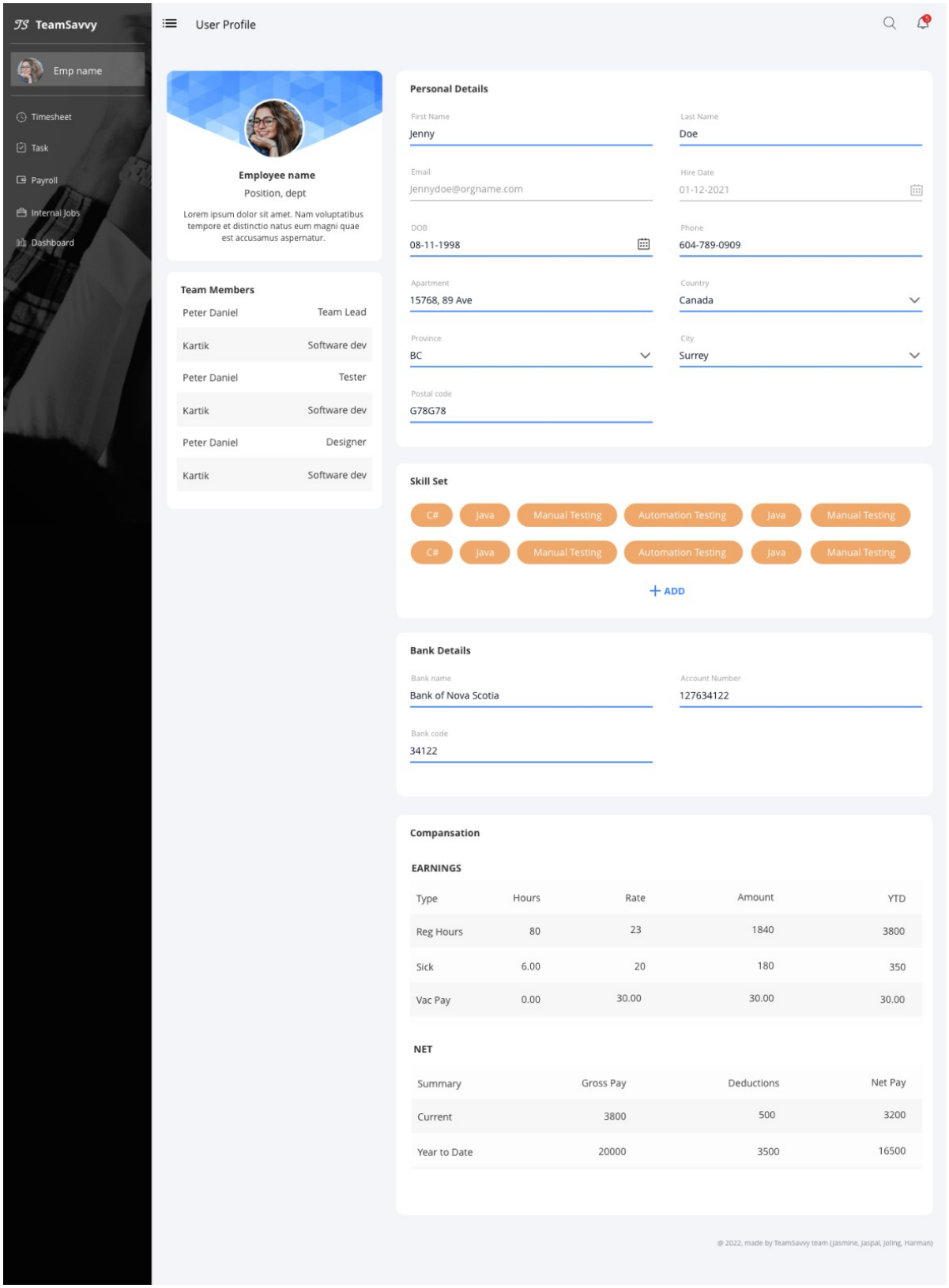
Internal Jobs:

This screen will display employee with the internal jobs postings which he can read the description and apply for the jobs.



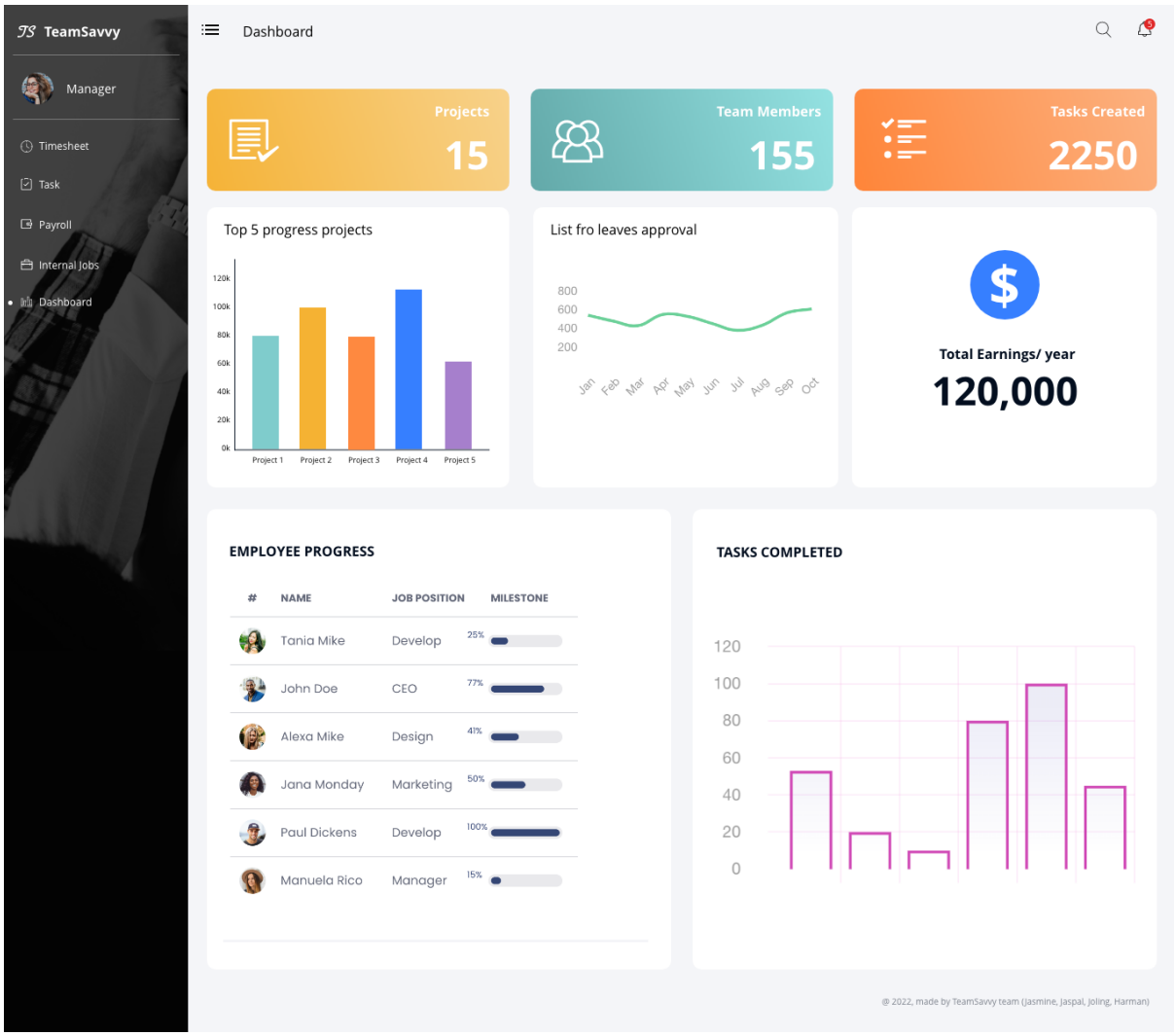
User Profile:

This screen will show the personal details, team members, position, department, skill set and bank details of an employee.



Dashboard:

This screen is for manager and HR, here they can view projects, team members, tasks, and other information. This screen will also have feature to create graphs widgets with predefined dropdowns. Manager can download, modify and delete the graph.



4. Database

\We've created all the Tables that are required for the functioning of the Application. These tables interlinked with each other has all the attributes that gives us the glimpse of how the Application will work.

Structure of the Database:

Tables in our database:

- **Employee**: PK-EmpID, FK – AddressID, DepartmentID, ProjectID, RoleID, StatuesID, First Name, Last Name, DOB, HireDate, Phone, Extension, Email, Bank Account No.
- **Project**: PK- PojectID, FK – Project Manager ID, Project Name, Project Start Date, Project End date, Project Budget, Project Description, Total Task Count, Total Inprogress Count, Total Completed Count, Project Manager, Project Client, Project Load, Project Total Emplyee
- **Leave**: PK – Leave Type ID, FK – Employee ID, Leave Start Date, Leave End Date, Leave Days, Leave Approval Date, Leave Approved By, Leave Status
- **Employee_Leave**: PK – Employee Leave ID, FK – Employee Type ID
- **Employee_Project:** PK – Employee Project ID, FK – Employee ID, Project ID
- **Payroll**: PK – Payroll ID, FK – Employee ID, Pay ID, Pay Date, Pay Type, Total Hours, Earning, Net Pay, Pay_Vacation, Pay_Sick
- **Status**: PK – Status ID, Status_Type
- **Skill**: PK – Skill ID, Skill Name

- **Employee_Skill**: PK – Employee Skill ID,FK – EmployeeID, SkillID
- **Time_Sheet:** PK – TimesheetID, FK – EmployeeID
- **Role**:PK – RoleID, RoleName
- **Department**: PK – DepartmentID, DepartmentName
- **Job:** PK – JobID, FK – JobCategoryID , JobLocationID, DepartmentID, JobRoleID, JobSalary, JobDesc
- **Job Applied**: PK- Job Applied ID, FK – EmployeeID, JobID
- **Job Category:** PK – JobCategoryID, JobCategoryName, JobCategoryValue
- **Job Location**: PK – JobLocationID, FK – JobLocationAddressID, JobLocationName
- **Address:** PK – Address ID, FK - City ID, Apartment, Postal Code
- **City**: PK – CityID, CityName, FK – Province ID
- **Province:** PK – Province ID, FK – Country ID, ProvinceName, ProvinceAbbreviations
- **Country**: PK – CountryID, Country Name
- **Dashboard**: PK – DashboardID,FK – EmployeeID, WidgetID
- **Widget**: PK – WidgetID, FK – WidgetTypeID, WidgetName)
- **Widget_Type:** PK – WidgetTypeID, WidgetType
- **Task:** PK – TaskID, FK – EmployeeID, FK-ProjectID, TaskName, TaskDescription, TaskStartDate, TaskEndDate, TaskTotalHours, AssignedBy, AssignedTo, AssignedDate, TaskStatus
- **Salary**: PK – (SalaryID,SalaryIncdate), FK – EmployeeID, SalaryType, Salary

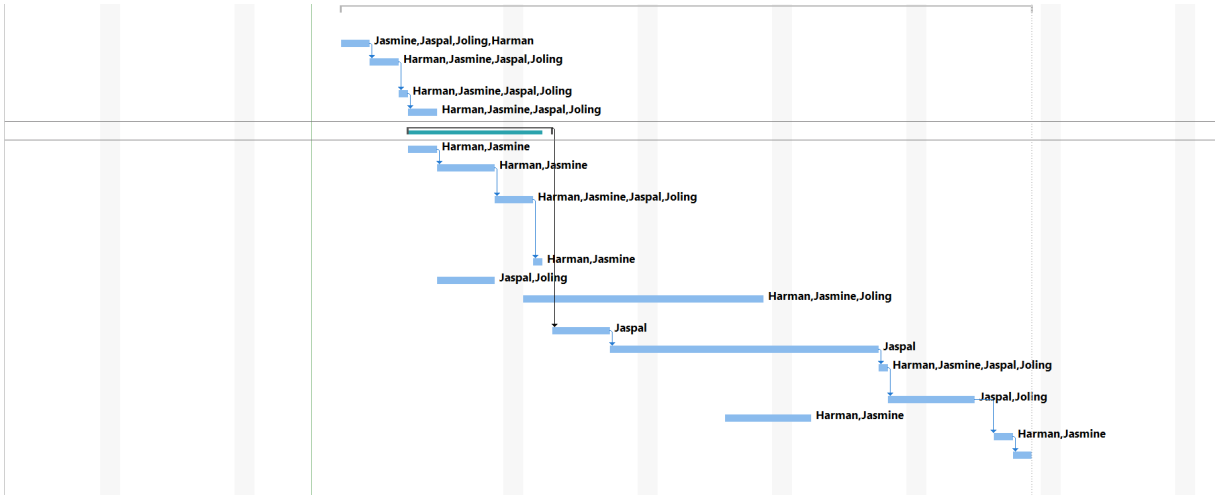
Pending Implementations:

A Gantt chart, a Network Diagram and Timeline on Microsoft Project:

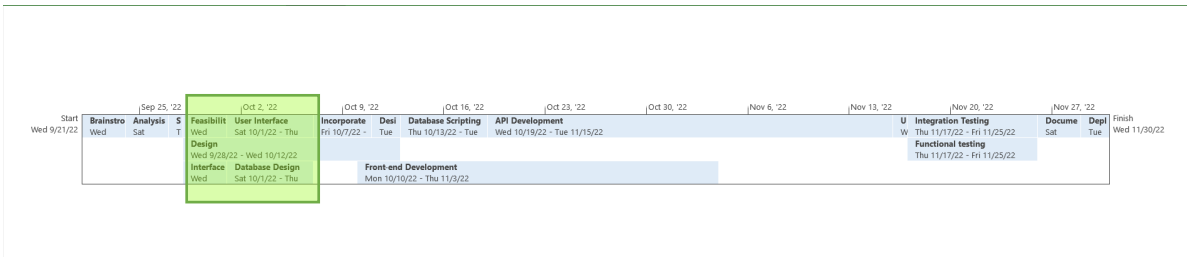
Network Diagram: We have completed the content under the green box so far. Every other task is in progress.

Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names	Add New Column
	Software Development	**56 days?**	**Wed 9/21/22**	**Thu 12/1/22**			
	Brainstroming	3 days	Wed 9/21/22	Fri 9/23/22		Jasmine,Jaspal,Joling,Harman	
	Analysis/Software Requirements	3 days	Sat 9/24/22	Mon 9/26/22	1	Harman,Jasmine,Jaspal,Joling	
	Scope Detrmination	1 day	Tue 9/27/22	Tue 9/27/22	2	Harman,Jasmine,Jaspal,Joling	
	Feasibility Analysis	3 days	Wed 9/28/22	Fri 9/30/22	3	Harman,Jasmine,Jaspal,Joling	
	Design	**12 days**	**Wed 9/28/22**	**Wed 10/12/22**			
	Interface Analysis	3 days	Wed 9/28/22	Fri 9/30/22		Harman,Jasmine	
	User Interface design	5 days	Sat 10/1/22	Thu 10/6/22	6	Harman,Jasmine	
	Incorporate feedback into functional specifications	2 days	Fri 10/7/22	Mon 10/10/22	7	Harman,Jasmine,Jaspal,Joling	
	Design complete	1 day	Tue 10/11/22	Tue 10/11/22	8	Harman,Jasmine	
	Database Design	5 days	Sat 10/1/22	Thu 10/6/22		Jaspal,Joling	
	Front-end Development	20 days	Mon 10/10/22	Thu 11/3/22		Harman,Jasmine,Joling	
	Database Scripting	5 days	Thu 10/13/22	Tue 10/18/22	5	Jaspal	
	API Development	20 days	Wed 10/19/22	Tue 11/15/22	12	Jaspal	
	UI and API integration	1 day	Wed 11/16/22	Wed 11/16/22	13	Harman,Jasmine,Jaspal,Joling	
	Integration Testing	7 days	Thu 11/17/22	Fri 11/25/22	14	Jaspal,Joling	
	Functional testing	7 days	Mon 10/31/22	Tue 11/8/22		Harman,Jasmine	
	Documentation	2 days	Mon 11/28/22	Tue 11/29/22	15	Harman,Jasmine	
	Deployment	2 days?	Wed 11/30/22	Thu 12/1/22	17		

Gantt chart:



Timeline: We have completed the content under the green box so far.



Proposed Revisions:

We have created an android app but according to our research, android doesn't allow us to access the fingerprint. Therefore, we have designed android app where we assume that employee will put his id and fingerprint for clock-in and clock-out.

Glitch in this, if employee can add someone else's id and his fingerprint to clock-in or clock-out, then functionality will work according to the employee id entered.