TEAM ID : PNT2022TMID18255

PROJECT NAME : CORPORATE EMPLOYEE ATTRITION ANALYTICS

PROJECT REPORT

1. INTRODUCTION:

1.1 Project Overview

Human Resources are critical resources for any organization. Organizations spend a huge amount of time and money to hire and nurture their employees. It is a huge loss for companies if employees leave, especially the key resources. Thus in a situation when more and more employees are quitting the organization, the attrition rate is on a rise.

So, our aim of the project is to help HR.HR can predict whether employees are at risk of leaving the company, it will allow them to identify the attrition risks and help understand and provide the necessary support to retain those employees or do preventive hiring to minimize the impact on the organization.

1.2 Purpose

The main aim of the project is to build a visualization chart that is used for the analysis of employee attrition depending on different factors like percent salary hikes, distance from home, etc. Here the user can understand the relationship between every column. Meaningful visualization is created for understanding the given dataset.

2. LITERATURE SURVEY:

2.1 Existing Solution:

Authors:

Saradhi and G.K. Palshikar

Title:

"Employee churn prediction"

Abstract:

Employee attrition directly relates to the customer attrition but not similar to customer attrition. For this they study and compared some major Machine Learning methodologies to stop employee attrition. In this they carried out several methods for creating and comparing predictive employee attrition models. This work is helpful for building best employee prediction model

2.2 References:

V. V. Saradhi and G. K. Palshikar, "Employee attrition prediction," Expert Systems with Applications, vol. 38, no. 3, pp. 1999–2006, 2011.

2.3 Problem Statement Definition:

Reasons for attrition can be plenty and range from dissatisfaction due to low salaries, less or no career growth opportunities, inferior employee supervision, eagerness to get into companies with a global presence, lack of recognition, lack of freedom of expression in the organization, and underutilization of talents and skills of the individuals

3. IDEATION & PROPOSED SOLUTION:

3.1 Empathy Map:

3.2 Ideation & Brainstorming:

Akaash Kannan N K

Help in developing competencies and skills of employees.

Descriptive statistic was used to find out the demographics characteristics of the participants.

Decision-making plays an essential role in the management and may represent the most important component in the planning process.

stress arising due to load of work can result into a decline of performance

hyperparameter tuning was applied to find the best-fit parameters of appliedmachine learning models.

Choose best learning model for dataset

Dhakshid Sabari M

Helps in bonding between the boss and the subordinated

Correlation test was used to validate the presence of link and relationship between the dependent variable and independent variables

Employee attrition is considered a well-known problem that needs the right decisions from the administration to preserve high qualified employees.

To measure employees' productivity, it is not appropriate to judge it by the time spent on job

The hyperparameters were achieved by checking the model's outcomeaccuracy results iteratively on the dataset.

Try with different predictive model

PushpaRaj

study is to identify the human resource and the contextual factors.

examined the relationship of supervisor support, reward & recognition and work-life policies

artificial intelligence is utilized extensively as an efficient tool for predicting such a problem

quality of work that needs to be assessed in order measure the productivity

Extra Trees Classifier is our proposed approach for predicting employee attrition

Understand the employee strength and weakness

Arun Kumar S

strengthen company in managing their business in a competitive environment.

The data was analyzed by using SPSS 13.0.

deep learning technique along with some preprocessing steps to improve the prediction of employee attrition.

initiative of work-life balance policies to be practiced in organization will leads towards a win-win situation for both the employees and the employers.

ETC techniqueworks by generating a large number of bagged decision tree samples from the training data

Use regression model to get effective results.

3.3 Proposed Solution

S NO	Parameter	Description
1	Problem Statement (Problem to be solved)	Corporate Employee Attrition Analysis ● Attrition of employee from organization ● Analysis both the cases of Voluntary or involuntary ● Employee attrition have been the most challenging area for organisation to analysisc
2	Idea / Solution Description	● Make use of classification algorithm to predict their retention and maintain their relationship using this model ● Focus on the career growth and developing pleasant workspace for employees ● Building an application to know and analyse the goal settings,training metrics,learning path.
3	Novelty / Uniqueness	● The solution takes all possible reasons for employee attrition ● It consider pay , workload , flexibility , development and hiring. ● Using IBM cloud platform to analyze and predict in order to make organization for great improvement.
4	Social Impact / Customer satisfaction	● A lot of money can be saved for the organization. ● Retaining good employees creates a good growth for organization.

		• Improve employee satisfaction which lead to positive review and increase trust of employee towards organization
5	Business model (Revenue Model)	• It is business to the organization model • This business model is beneficial to study the existing trends. • It follows a non-monetary revenue model where the organization is not charged. • It Provide the origin cause of attrition and provide recommendations to overcome it.
6	Scalability of the solution	• The current solution is developed with the goal of experimenting with employee attrition based on dataset for an organization. • If there is a chance of having datasets of more organizations then the solution can be developed to benefit more organizations. • The solution is completely scalable.

3.4 Problem Solution fit

1. CUSTOMER SEGMENT	**6. CUSTOMER CONSTRAINTS**	**5.AVAILABLE SOLUTIONS**
1. Employees or stakeholders from the organization who are in need of knowing about the analysis of voluntarily or involuntarily resignation. 2. Average organization employees 3. Corporation experts	1. Design a better career path. 2. Unavailability of a stable dataset for prediction. 3. Not able to specify particular aspects of attrition.	1. Propose flexibility 2. Obtaining feedback from employee 3. Making organizations know more about their employee's requirements 4. Search for the right people and take decisions favoring both organization

		and the employees

2.JOB-TO-BE-DONE/ PROBLEM 1. To Employ the respectable people 2. To Assign responsibility wisely 3. To Admire good work and courage them 4. To provide Job Satisfaction for Employees	**9. PROBLEM ROOT CAUSE** 1. Lack of development opportunities. 2. Employees are overwhelmed by the amount of work. 3. Lack of flexibility. 4. Large-scale economic loss for the organization 5. Degradation in the organization's reputation when many employees quit.	**7.BAHAVIOUR** 1. Filling ratings and getting feedback from the employee. 2. Use the application deployed to know the approximate cause of attrition. 3. Uncovering the best case to solve the problem and retaining employees

3.TRIGGERS 1. deficient work-life equilibrium 2. absence of employee motivation 3. Inadequate workspace culture 4. Lack of training and growth in employee job 5. Uncertainty due to lack of trust in the organisation	**10. YOUR SOLUTION** Aim to develop an application that predicts the root reason for attrition using a supervised machine learning model with the data of employees of an organisation and evaluate possible studies considering important factors.	**8.CHANNELS OF BAHAVIOUR** **Online** 1. Check for specific reasons for attrition. 2. In online mode, by making use of an algorithm it predicts and examines the situation based on given data .

4.EMOTIONS **Before** 1. Employee's lack of confidence 2. The debate between organisation and employee 3. Ignoring the career growth of employee 4. Don't know how to make use of talented employee **After** 1. Enhance contact 2. Gets to know the idea of keeping the right individuals 3. Encourage and inspire workers.		**Offline** 1. By having an employee claim their points. 2. Providing some space to let employee communicate their views.

4. REQUIREMENT ANALYSIS

4.1 Functional requirement

FR No.	Functional Requirement(Epic)	Sub Requirements(Story/ Sub-Task)
FR-1	Employee Login	Employees can use the account details provided by an organisation to log in. This is made by using existing details in organisation.
FR-2	Admin Login	Admin can have special credentials for the login provided by the organisation to log in.Otherwise, Admin can login by the same methodology as employee.
FR-3	Employee confirmation	Confirmation may be done whether by email or OTP
FR-4	Admin confirmation	Confirmation may be done whether by email or OTP

FR-5	Employee Details	Employee Details are collected by feedback forms, query forms, or any other media platform. Employee's opinions and choice are collected.
FR-6	Storage of data	Data about the employee and their opinion are stored in a backend database.
FR-7	HR analysis	Analysis through predictions and confirmation with IBM Cognos Analytics

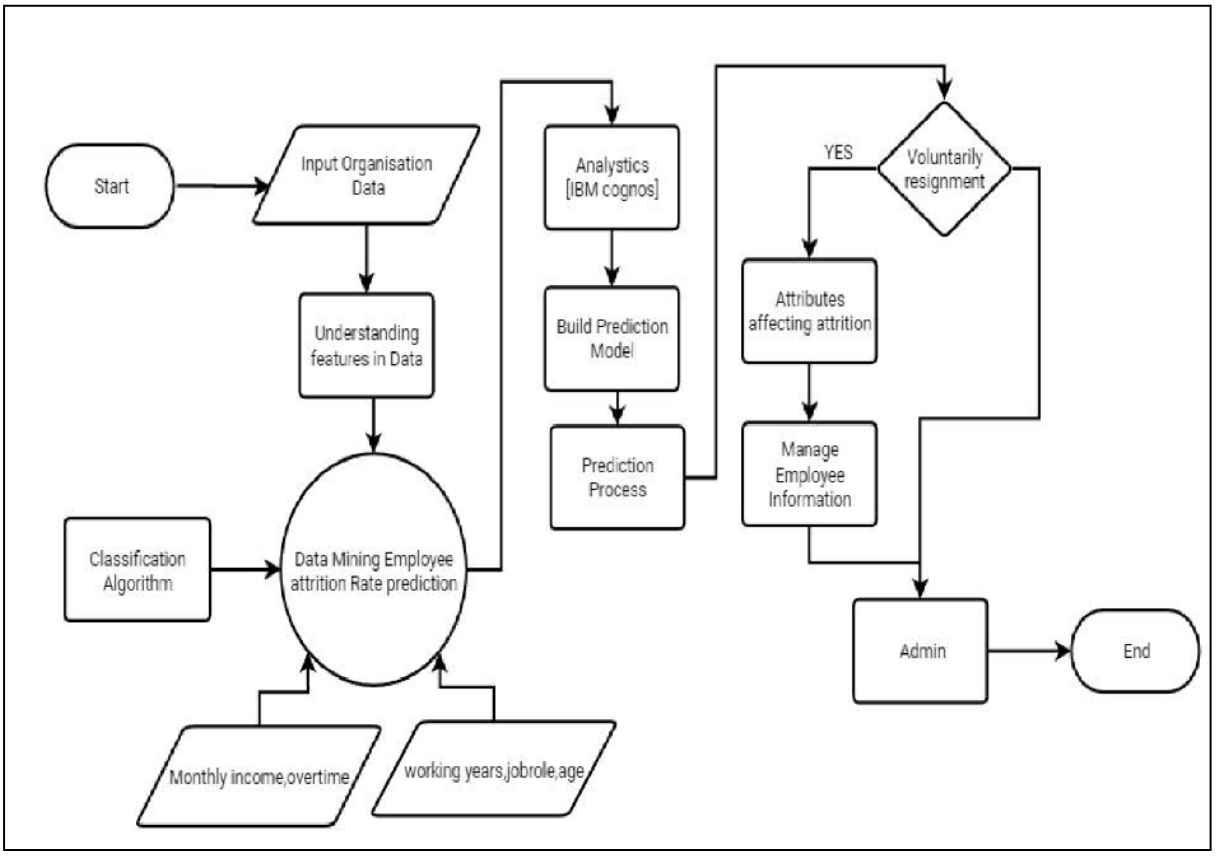
4.2 Non-Functional requirements

FR No.	Non-Functional Requirement	Description
NFR-1	Usability	The employee should be able to use the application without any problems. The interface should be comfortable to operate and understand. The data processing process should be smooth and not tedious

NFR-2	Security	Details of the employee and their individual opinion should not be disclosed or shared with other people.
NFR-3	Reliability	The application should accurately identify the core characteristics and analysis the data. The data should be processed without skipping core elements.
NFR-4	Performance	The application should be built on a highly efficient prediction model such that the result is accurate
NFR-5	Availability	The application should be available to an employee at all times and should work efficiently. It should not suffer from issues such as application crashes.
NFR-6	Scalability	The application should be able to support updates in terms of features and functionality.

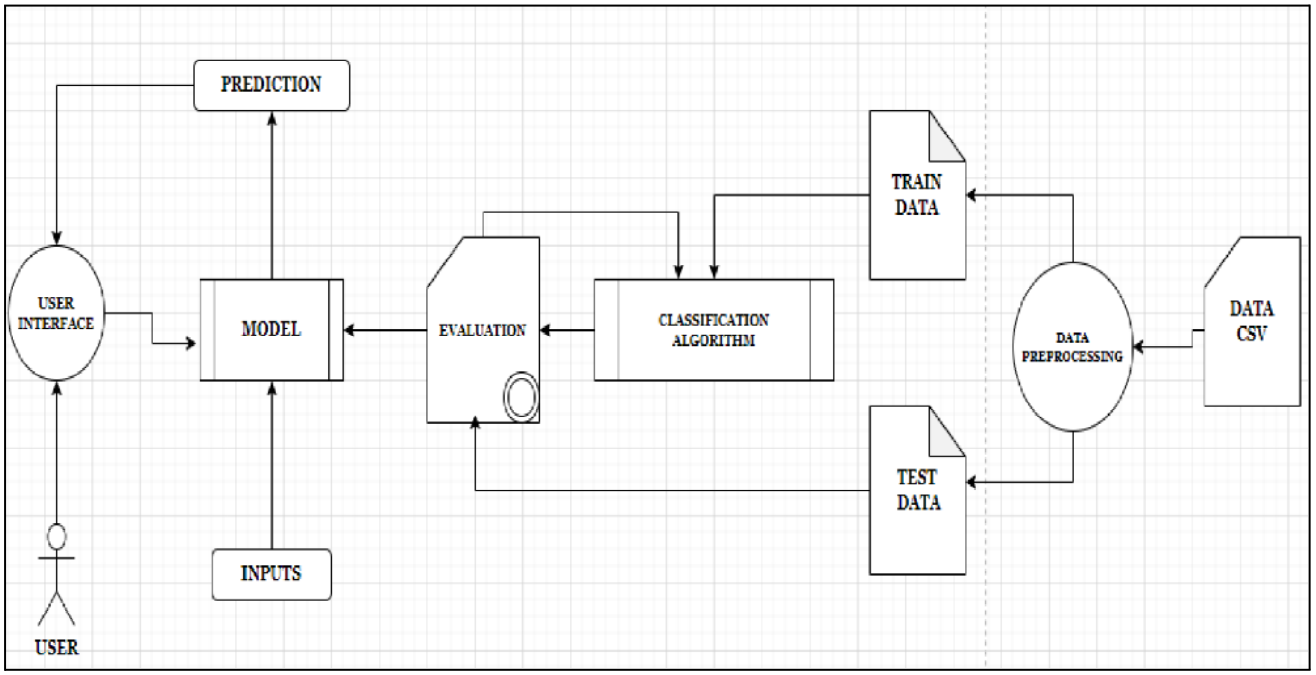
5. PROJECT DESIGN

5.1 Data Flow Diagrams

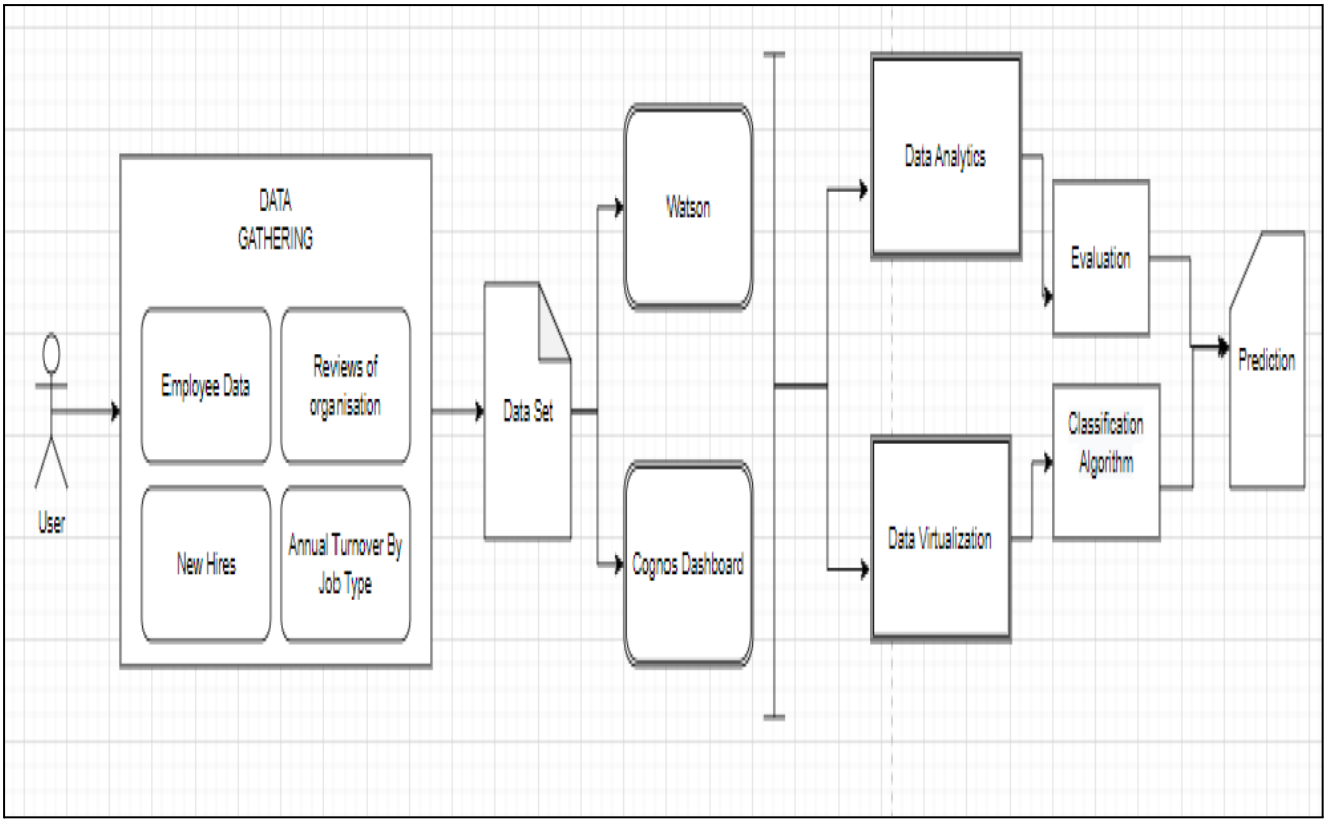


5.2 Solution & Technical Architecture

Solution Architecture



Technology Architecture



SNO	Component	Description	Technology
1.	User Interface	The user interacts with the application using the website UI, where the user gets valuable user report details from the website UI.	HTML, CSS, JavaScript, React Js etc.
2.	Application Logic-1	Here Application logic relies on extracting the required scopes of data into the dataset.	Python
3.	Application Logic-2	Here Application logic depends on training the dataset to get precision by predicting and analysis of a dataset.	Python Jupyter
4.	Database	Data Type, Configurations etc.	Python Jupyter
5.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
6.	File Storage	File storage requirements	IBM Block Storage or OtherStorage Service or Local Filesystem
7.	Machine Learning Model	It allows the user to feed a computer algorithm an immense amount of data and have the computer analyse and make data-driven recommendations and decisions based on only the input data.	Decision Tree, Random Forest model

SNO	Characteristics	Description	Technology
1.	Usability	To delegate organization members and increase productivity and it provides the most useful dissemination tool for their decision making.	Cognos analytics
2.	Security	IBM Cognos Application Firewall provides security features that are in expansion to many of the elements determined in the guided security framework.	Encryptions, IAM Controls
3.	Scability	Solution is completely scalable. If there is a chance of having datasets of more organizations then the solution can be developed to benefit more organizations	Load Balancer
4.	Availability	Jupyter Notebook is a webbased interactive computing platform. website application interface and developed in the local language and the content is available in the localized language.	Jupyter Notebook
5.	Performance	Determining the hardware required for system to function well underneath its unexpected workload.	IBM Cognos.

5.3 User Stories

User Type	Functional Requirement	User Story Number	User Story/Task	Acceptance Criteria	Priority	Release
Human Resource	Login	USN-1	As a user,I can log into application by entering email and password	I should able to login application and view dashboard, report, story	High	Sprint 2
	Login	USN-2	As a user,I can't log into application by entering invalid email and password	I shouldn't able to login application and view dashboard, report, story	Low	Sprint 2
	DashBoard	USN-3	As a user ,I can navigate to dashboard screen when I click on dashboard button in home screen	I should see the visualization made in dashboard and can make analysis over it	High	Sprint 4
	Report	USN-4	As a user ,I can navigate to Report screen when I click on Report button in home screen	I should see the visualization made in Report screen and can make analysis over it	High	Sprint 4
	Story	USN-5	As a user ,I can navigate to Story screen when I click on Story button in home screen	I should see the visualization made in Story screen and can play it.	High	Sprint 4

	Navigate Back	USN-6	As a user ,I can navigate to home screen when I click on home button in dashboard screen	I should able to see the page of user currently login.	Low	Sprint 4
Employee	Login	USN-1	As a user,I can log into application by entering email and password	I should able to login application and view dashboard, report, story	High	Sprint 2
	Login	USN-2	As a user,I can't log into application by entering invalid email and password	I shouldn't able to login application and view dashboard, report, story	Low	Sprint 2
	DashBoard	USN-3	As a user ,I can navigate to dashboard screen when I click on dashboard button in home screen	I should see the visualization made in dashboard and can make analysis over it	High	Sprint 4
	Report	USN-4	As a user ,I can navigate to Report screen when I click on Report button in home screen	I should see the visualization made in Report screen and can make analysis over it	High	Sprint 4
	Story	USN-5	As a user ,I can navigate to Story screen when I click on Story button in home screen	I should see the visualization made in Story screen and can play it.	High	Sprint 4

	Navigate Back	USN-6	As a user ,I can navigate to home screen when I click on home button in dashboard screen	I should able to see the page of user currently login.	Low	Sprint 4

6. PROJECT PLANNING & SCHEDULING

6.1 Sprint Planning & Estimation

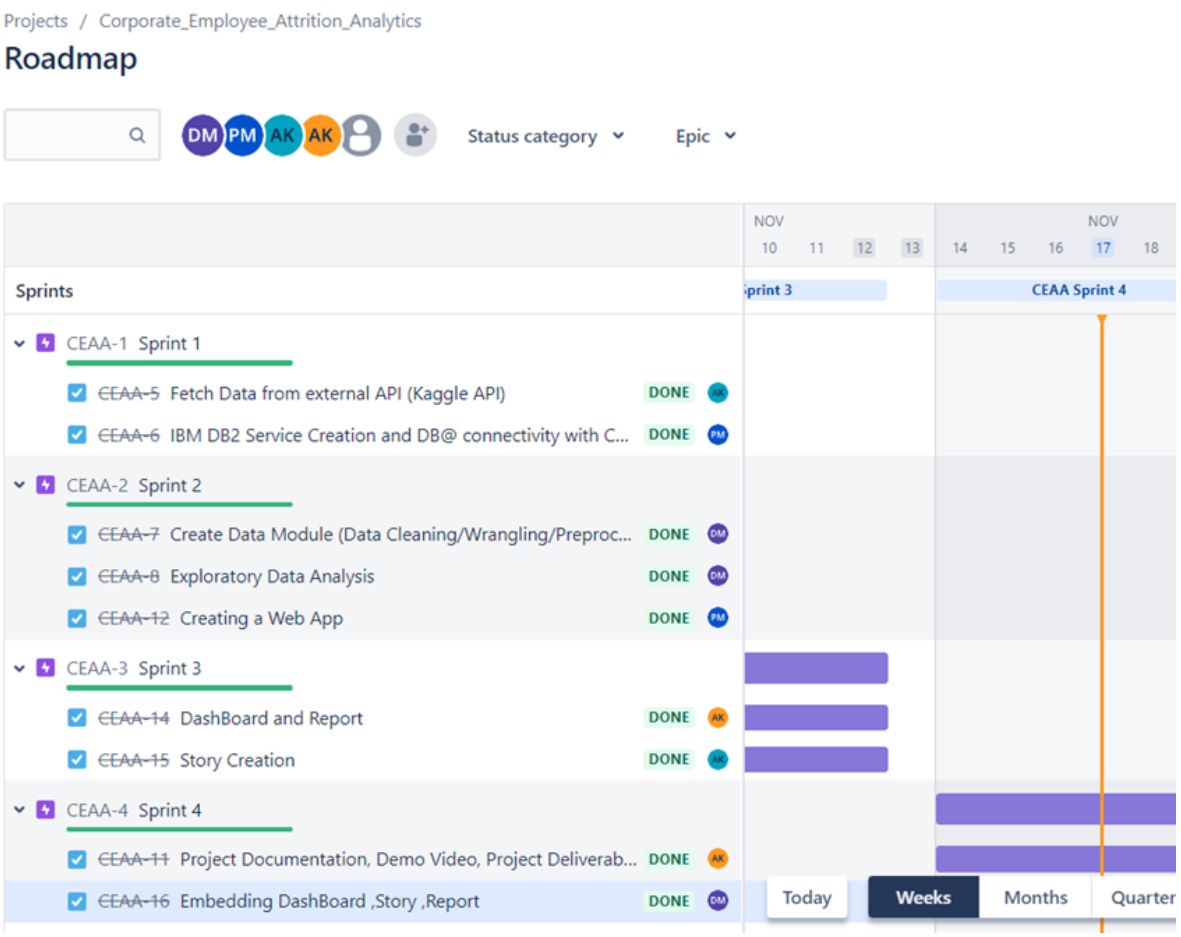
Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Fetching data And connectivity	USN-1	1) Fetch data from external API. 2) IBM DB2 service creation and DB2 connectivity with cognos.	5	Medium	Akaash Kannan N K, Pushparaj M
Sprint-2	Create Your Web App	USN-2	1) Create Data module (Data cleaning/ Wrangling/ Preprocessing). 2) EDA- exploratory Data Analytics.	5	Low	Dhakshid Sabari M, Pushparaj M
Sprint-3	Dashboard	USN-3	1) Dashboard and Report	5	High	Akaash Kannan N K, Arun Kumar S
Sprint-4	Predict And Visualise	USN-4	1) Story Creation and Embedding dashboard (report and story) to your web app.	5	High	Akaash Kannan N K, Arun Kumar S, Dhakshid Sabari M, Pushparaj M

6.2 Sprint Delivery Schedule

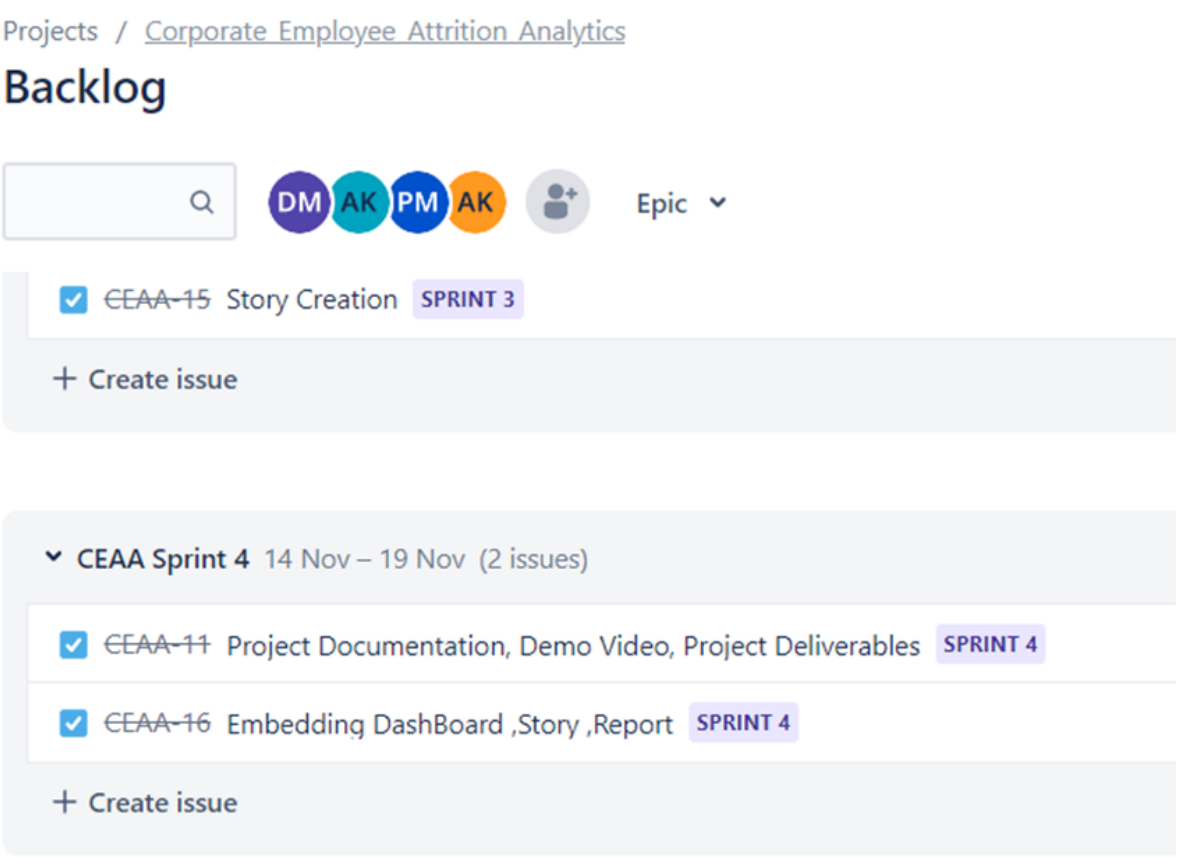
Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	5	6 Days	24/10/2022	29/10/2022	5	29/10/2022
Sprint-2	5	6 Days	31/10/ 2022	05/11/2022	5	05/11/2022
Sprint-3	5	6 Days	07/11/2022	12/11/2022	5	12/11/2022
Sprint-4	5	6 Days	14/11/2022	19/11/2022	5	19/11/2022

6.3 Reports from JIRA

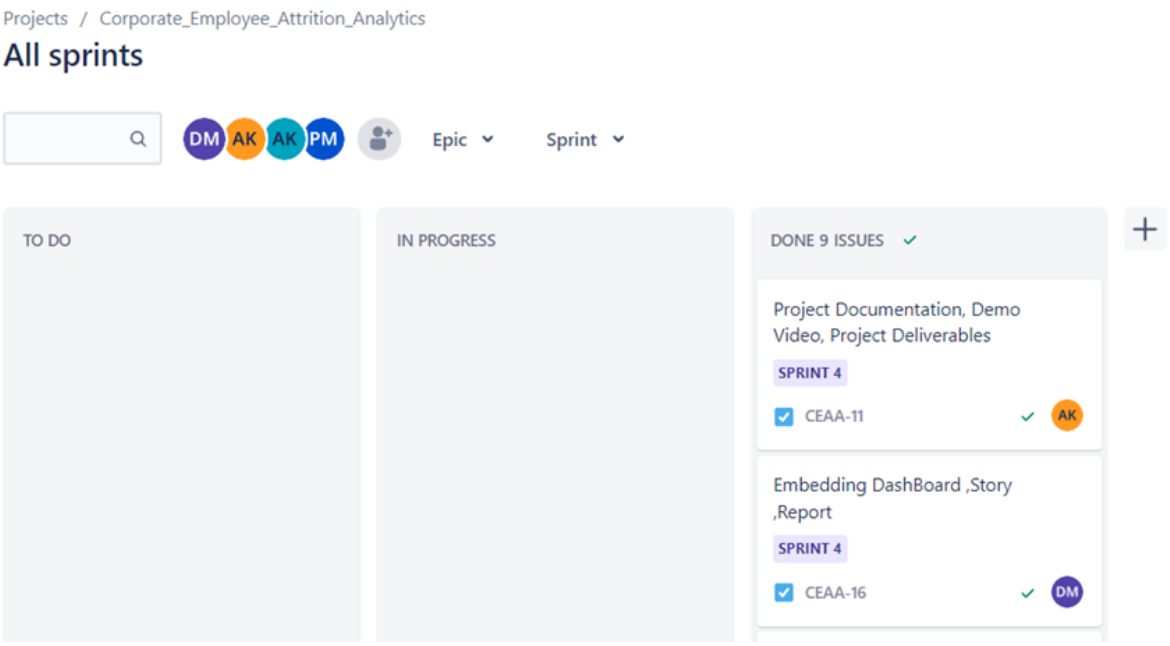
Roadmap


Projects / Corporate_Employee_Attrition_Analytics
Roadmap
DM PM AK AK
Status category
Epic
NOV
10 11 12 13
NOV
14 15 16 17 18
Sprints
Sprint 3
CEAA Sprint 4
CEAA-1 Sprint 1
CEAA-5 Fetch Data from external API (Kaggle API) DONE
CEAA-6 IBM DB2 Service Creation and DB@ connectivity with C... DONE
CEAA-2 Sprint 2
CEAA-7 Create Data Module (Data Cleaning/Wrangling/Preproc... DONE
CEAA-8 Exploratory Data Analysis DONE
CEAA-12 Creating a Web App DONE
CEAA-3 Sprint 3
CEAA-14 DashBoard and Report DONE
CEAA-15 Story Creation DONE
CEAA-4 Sprint 4
CEAA-11 Project Documentation, Demo Video, Project Deliverab... DONE
CEAA-16 Embedding DashBoard ,Story ,Report DONE
Today
Weeks
Months
Quarter

Backlog


Projects / Corporate Employee Attrition Analytics
Backlog
DM AK PM AK
Epic
CEAA-15 Story Creation SPRINT 3
+ Create issue
CEAA Sprint 4 14 Nov – 19 Nov (2 issues)
CEAA-11 Project Documentation, Demo Video, Project Deliverables SPRINT 4
CEAA-16 Embedding DashBoard ,Story ,Report SPRINT 4
+ Create issue

Board



7. CODING & SOLUTIONING (Explain the features added in the project along with code)

7.1 Feature 1

Authentication

index.php

```php
<!DOCTYPE html>
<html>
<head>
    <title>LOGIN</title>
    <link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>
     <form action="login.php" method="post">
        <h2>LOGIN</h2>
        <?php if (isset($_GET['error'])) { ?>
            <p class="error"><?php echo $_GET['error']; ?></p>
        <?php } ?>
        <label>User Name</label>
        <input type="text" name="uname" placeholder="User Name"><br>

        <label>Password</label>
        <input type="password" name="password" placeholder="Password"><br>

        <button type="submit">Login</button>
     </form>
</body>
</html>
```

Login.php

login.php

```php
<?php
session_start();
include "db_conn.php";

if (isset($_POST['uname']) && isset($_POST['password'])) {

    function validate($data){
       $data = trim($data);
       $data = stripslashes($data);
       $data = htmlspecialchars($data);
       return $data;
    }

    $uname = validate($_POST['uname']);
    $pass = validate($_POST['password']);

    if (empty($uname)) {
        header("Location: index.php?error=User Name is required");
        exit();
    }else if(empty($pass)){
        header("Location: index.php?error=Password is required");
        exit();
    }else{
        $sql = "SELECT * FROM users WHERE user_name='$uname' AND password='$pass'";

        $result = mysqli_query($conn, $sql);

        if (mysqli_num_rows($result) === 1) {
            $row = mysqli_fetch_assoc($result);
            if ($row['user_name'] === $uname && $row['password'] === $pass) {
                $_SESSION['user_name'] = $row['user_name'];
                $_SESSION['name'] = $row['name'];
                $_SESSION['id'] = $row['id'];
                header("Location: home.php");
                exit();
            }else{
                header("Location: index.php?error=Incorect User name or password");
                exit();
            }
        }else{
            header("Location: index.php?error=Incorect User name or password");
            exit();
        }
    }

}else{
    header("Location: index.php");
    exit();
}
```

Db_conn.php

db_conn.php

```php
<?php

$sname= "localhost";
$unmae= "root";
$password = "sql@con";

$db_name = "employee_db";

$conn = mysqli_connect($sname, $unmae, $password, $db_name);

if (!$conn) {
    echo "Connection failed!";
}
```

Home.php

home.php

```php
<?php
session_start();

if (isset($_SESSION['id']) && isset($_SESSION['user_name'])) {

 ?>
<!DOCTYPE html>
<html>
<head>
<meta name="viewport" content="width=device-width, initial-scale=1">
<style>
html {
  box-sizing: border-box;
}
body {
  background: #1690A7;
  display: flex;
  justify-content: center;
  align-items: center;
  height: 100vh;
  flex-direction: column;
}
*, *:before, *:after {
  box-sizing: inherit;
}
.p{
    color: white;
}
.column {
  float: left;
  width: 33.3%;
  margin-bottom: 16px;
  padding: 0 8px;
}
```

```css
@media screen and (max-width: 650px) {
  .column {
    width: 100%;
    display: block;
  }
}

.card {
  box-shadow: 0 4px 8px 0 rgba(0, 0, 0, 0.2);
}

.container {
  padding: 0 16px;
}

.container::after, .row::after {
  content: "";
  clear: both;
  display: table;
}

.title {
  color: grey;
}
.container1 {
        display: flex;
        align-items: center;
        justify-content: center
}
```

```
.button {
  border: none;
  outline: 0;
  display: inline-block;
  padding: 8px;
  color: white;
  background-color: #000;
  text-align: center;
  cursor: pointer;
  width: 100%;
}
.card {
    padding: 20px;
    box-shadow: 0 0px 20px 0 rgba(0,0,0,0.2);
    background-color: white;
    transition: 0.3s;
 }
.button:hover {
  background-color: #555;
}
.header {
  padding: 60px;
  text-align: center;
  color: white;
  font-size: 30px;
}
</style>
<link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>

<div class="header">
    <h1>Corporate Employee Attrition Analytics</h1>
</div>
<div class="row">
  <div class="container1">
      <img src="images\person.jpeg" style="width: 20%; padding-bottom: 20px;padding-right: 30px;">

      <div class="row">
        <h1>Hello <?php echo $_SESSION['name']; ?> </h1>
        <a href="logout.php" class="fa fa-sign-out">Logout</a>
      </div>

  </div>
```

```
  <div class="row">
    <div class="column" >
      <div class="card">
        <img src="images\dashboard.jpeg" alt="DashBoard" style="width:70%; display: block;
        margin-left: auto;
        margin-right: auto;">
        <div class="container">
          <h2>DashBoard</h2>
          <a class="button" href="dashboard.html">Click here</a>
        </div>
      </div>
    </div>

    <div class="column">
      <div class="card">
        <img src="images\report.jpeg" alt="Report" style="width:70% ;display: block;
        margin-left: auto;
        margin-right: auto;" class="center">
        <div class="container">
          <h2>Report</h2>
          <a class="button" href="report.html">Click here</a>
        </a>
        </div>
      </div>
    </div>

    <div class="column">
      <div class="card">
        <img src="images\story.jpeg" alt="Report"
        style="width:70%; display: block;
        margin-left: auto;
        margin-right: auto;">
        <div class="container">
          <h2>Story</h2>
          <a class="button" href="story.html">Click here</a>
        </div>
      </div>
    </div>
  </div>
</div>

```

```
    </body>
    </html>
    <?php
    }else{
        header("Location: index.php");
        exit();
    }
     ?>
```

7.2 Feature 2

Embedded Dashboard, report, story into web application

Dashboard.html

dashboard.html

```
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>
<a href="home.php"><i class="fas fa-calculator"></i>Home </a>
<h1>DashBoard</h1>
<iframe src="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&amp;pathRef=.my_folders%2FDashBoard&amp;closeWindowOnLastView=true&amp;ui_ap

</body>
</html>
```

Report.html

report.html

```
<!DOCTYPE html>
<html>
<head>
    <link rel="stylesheet" type="text/css" href="style.css">
</style>
</head>
<body>
<a href="home.php"><i class="fas fa-calculator"></i>Home </a>
<h1>Report</h1>
<iframe src="https://us3.ca.analytics.ibm.com/bi/?pathRef=.my_folders%2FAttrition_Report&amp;closeWindowOnLa

</body>
</html>
```

Story.html

story.html

```
<!DOCTYPE html>
<html>
<head>
    <link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>
<a href="home.php"><i class="fas fa-calculator"></i>Home </a>
<h1>Story</h1>
<iframe src="https://us3.ca.analytics.ibm.com/bi/?perspective=story&amp;pathRef=.my_folders%2FStory&amp;clos
</body>
</html>
```

8. TESTING

8.1 Test Cases

Test case ID	Feature Type	Component	Test Scenario	Steps To Execute	Test Data	Expected Result	Actual Result	Status	Comments	TC for Automation (Y/ N)	BUG ID	Executed By
LoginPage_TC_001	UI	Login Page	Verify the UI elements in Login	1.Enter the localhost url and click go. 2.Verify login page with below ui element 1.User Name text box 2.Password text box 3. Login Button	Localhost/webapp/index.php	Application should show below UI elements: 1.User Name text box 2.Password text box 3. Login Button	Working as expected	PASS	Successful	Y		Akaash Kannan N K PushpaRaj
LoginPage_TC_002	Functional	Login Page	Verify user is able to log into application with Valid credentials	1.Enter the localhost url and click go. 2.Enter User Name and password 2.click on login	UserName: ArunKumar Password:1234	User should navigate to homepage	Working as expected	PASS	Successful	Y		ArunKumar S

LoginPage_TC_003	Functional	Login Page	Verify user is able to log into application with Valid credentials	1.Enter the localhost url and click go. 2.Enter User Name and password 2.click on login	UserName: Pushparaj Password:1234	User should navigate to homepage	Working as expected	PASS	Successful	Y		PushpaRaj
LoginPage_TC_004	Functional	Login Page	Verify user is able to log into application with Valid credentials	1.Enter the localhost url and click go. 2.Enter User Name and password 2.click on login	UserName: Akaash Kannan Password:1234	User should navigate to homepage	Working as expected	PASS	Successful	Y		Akaash Kannan N K
LoginPage_TC_005	Functional	Login Page	Verify user is able to log into application with Valid credentials	1.Enter the localhost url and click go. 2.Enter User Name and password 2.click on login	UserName: Dhakshid Sabari Password:1234	User should navigate to homepage	Working as expected	PASS	Successful	Y		Dhakshid Sabari M
LoginPage_TC_006	Functional	Login Page	Verify user not able to log into application with invalid credentials	1.Enter the localhost url and click go. 2.Enter UserName and password 2.click on login	Username: NA Password: 1233	Application should show 'Incorrect email or password ' validation message	Working as expected	PASS	Successful	Y		Dhakshid Sabari M ArunKumar S

User_Page_TC_OO1	UI	USER PAGE	Verify User page has following components Show the title of the project. Show the name of user who login currently Show the card for dashboard, report, Story Show the logout button	1.Enter the localhost url and click go. 2.Enter UserName and password 2.click on login	UserName: PushpaRaj Password:1234	Application should show below UI elements: 1.Corporate employee attrition analysis 2.User name display 3. Card for dashboard, report,story 4.Logout Button	Working as expected	PASS	Successful	Y		Akaash Kannan N K PushpaRaj
User_Page_TC_OO2	Functional	USER PAGE	Verify user is able to navigate the dashboard Screen when user clicked on dashboard card	1.Enter the localhost url and click go. 2.Enter UserName and password 2.click on login 3.click on dahsboard card	UserName: Dhakshid Sabari Password:1234	Application should show dashboard screen	Working as expected	PASS	Successful	Y		Dhakshid Sabari M ArunKumar S

User_Page_TC_OO3	Functional	USER PAGE	Verify user is able to navigate the report Screen when user clicked on report card	1.Enter the localhost url and click go. 2.Enter UserName and password 2.click on login 3.click on report card	UserName: Akaash Kannan Password:1234	Application should show report screen	Working as expected	PASS	Successful	Y		Akaash Kannan N K PushpaRaj
User_Page_TC_OO4	Functional	USER PAGE	Verify user is able to navigate the story Screen when user clicked on story card	1.Enter the localhost url and click go. 2.Enter UserName and password 2.click on login 3.click on story card	UserName: ArunKumar Password:1234	Application should show story screen	Working as expected	PASS	Successful	Y		Dhakshid Sabari M ArunKumar S
User_Page_TC_OO5	Functional	USER PAGE	Verify user is able to navigate the login Screen when user clicked on logout button	1.Enter the localhost url and click go. 2.Enter UserName and password 2.click on logout	UserName: Dhakshid Sabari Password:1234	Application should show story screen	Working as expected	PASS	Successful	Y		Dhakshid Sabari M ArunKumar S

DashBoard_Page_TC_001	UI	DashBoard PAGE	Verify User page has following components Show the Home button. Show the title as Dashboard Show the Embedded dashboard	1.Enter the localhost url and click go. 2.Enter UserName and password 2.click on login 3.click on dashboard card	UserName: PushpaRaj Password:1234	Application should show below UI elements: 1.Home button 2.Dashboard title 3.IBM embedded cognos Dashboard	Working as expected	PASS	Successful	Y		Akaash Kannan N K PushpaRaj
DashBoard_Page_TC_002	Functional	DashBoard PAGE	Verify user is able to navigate to the home Screen when user clicked on home button	1.Enter the localhost url and click go. 2.Enter UserName and password 2.click on login 3.click on dashboard card 4.click on home buttom	UserName: Dhakshid Sabari Password:1234	Application should show home screen	Working as expected	PASS	Successful	Y		Dhakshid Sabari M ArunKumar S
DashBoard_Page_TC_003	Functional	DashBoard PAGE	Verify user is able to make dashboard as full screen	1.Enter the localhost url and click go. 2.Enter UserName and password 2.click on login	UserName: Akaash Kannan Password:1234	Application should show full screen of dashboard	Working as expected	PASS	Successful	Y		Akaash Kannan N K PushpaRaj

				3.click on dashboard card								
Report_Page_TC_001	UI	Report PAGE	Verify User page has following components Show the Home button. Show the title as Report Show the Embedded Report	1.Enter the localhost url and click go. 2.Enter UserName and password 2.click on login 3.click on Report card	UserName: Dhakshid Sabari Password:1234	Application should show below UI elements: 1.Home button 2. Report title 3.IBM embedded cognos Report	Working as expected	PASS	Successful	Y		Dhakshid Sabari M ArunKumar S
Report_Page_TC_002	Functional	Report PAGE	Verify user is able to navigate to the home Screen when user clicked on home button	1.Enter the localhost url and click go. 2.Enter UserName and password 2.click on login 3.click on Report card 4.click on home buttom	UserName: Akaash Kannan Password:1234	Application should show home screen	Working as expected	PASS	Successful	Y		Akaash Kannan N K PushpaRaj

Report _Page_TC _003	Functional	Report PAGE	Verify user is able to make Report as analysis screen	1.Enter the localhost url and click go. 2.Enter UserNam e and password 2.click on login 3.click on Report card 4.click on charts	UserName: Dhakshid Sabari Password:1 234	Applicatio n should show analysis of Report	Working as expected	P A S S	S uc ce ss fu l	Y		Dhakshid Sabari M ArunKumar S
Story_Pag e_TC_001	UI	Story PAGE	Verify User page has following component s Show the Home button. Show the title as Story Show the Embedded Story	1.Enter the localhost url and click go. 2.Enter UserNam e and password 2.click on login 3.click on Story card	UserName: PushpaRaj Password:1 234	Applicatio n should show below UI elements: 1.Home button 2. Story title 3.IBM embedded cognos Story	Working as expected	P A S S	S uc ce ss fu l	Y		Akaash Kannan N K PushpaRaj
Story _Page_TC _002	Functional	Story PAGE	Verify user is able to navigate to the home Screen when user clicked on home button	1.Enter the localhost url and click go. 2.Enter UserNam e and password 2.click on login 3.click on Story card 4.click on home buttom	UserName: Dhakshid Sabari Password:1 234	Applicatio n should show home screen	Working as expected	P A S S	S uc ce ss fu l	Y		Dhakshid Sabari M ArunKumar S

Story _Page_TC _003	Functional	Story PAGE	Verify user is able to play Story scene	1.Enter the localhost url and click go. 2.Enter UserName and password 2.click on login 3.click on Story card 4.click on play button	UserName: Akaash Kannan Password:1234	Application should show scenes of Story	Working as expected	PASS	Successful	Y		Akaash Kannan N K PushpaRaj

8.2 User Acceptance Testing

Purpose of User Acceptance Testing

The purpose of this document is to briefly explain the test coverage and open issues of the [ProductName] project at the time of the release to User Acceptance Testing (UAT).

Defect Analysis

This report shows the number of resolved or closed bugs at each severity level, and how they were resolved

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Severity 5	Subtotal
By Design	2	2	1	1	1	7

Duplicate	1	0	1	0	0	2
External	2	0	0	2	0	4
Fixed	3	2	1	0	0	7
Not Reproduced	0	0	1	0	0	2
Skipped	0	0	0	0	0	0
Won't Fix	0	0	0	0	0	0
Totals	8	4	4	3	1	22

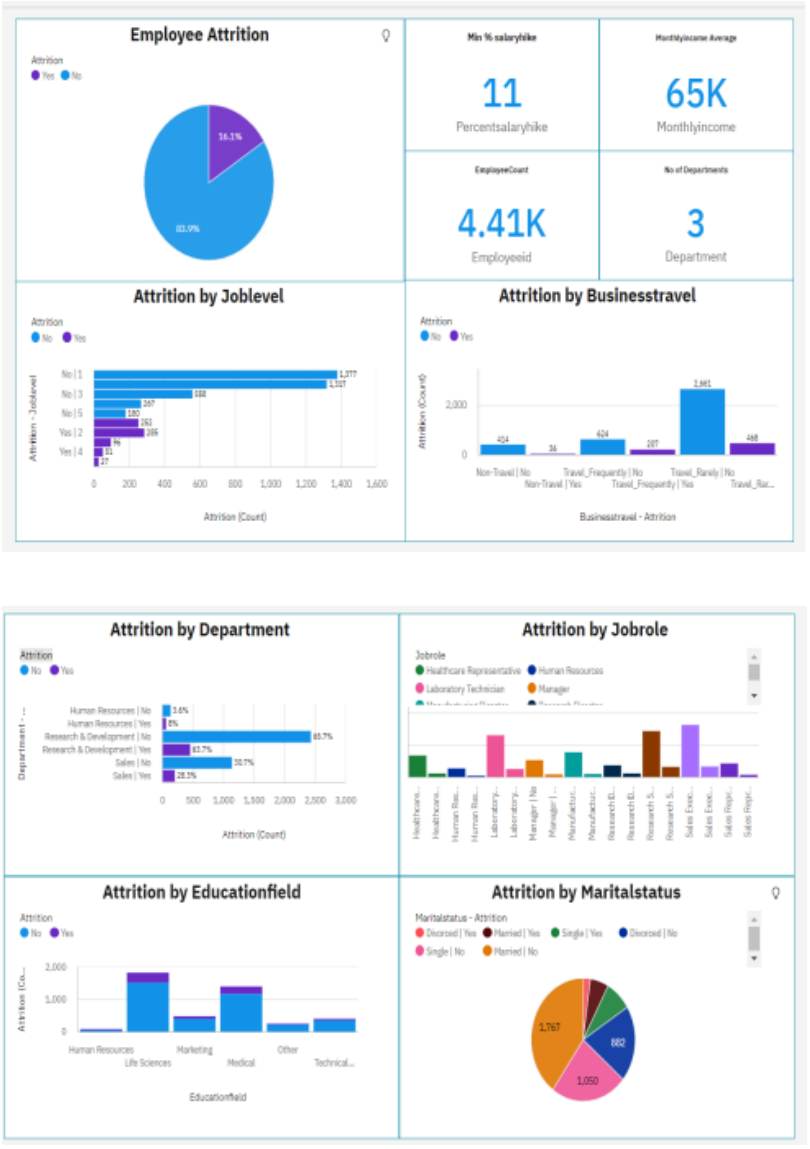
Test Case Analysis

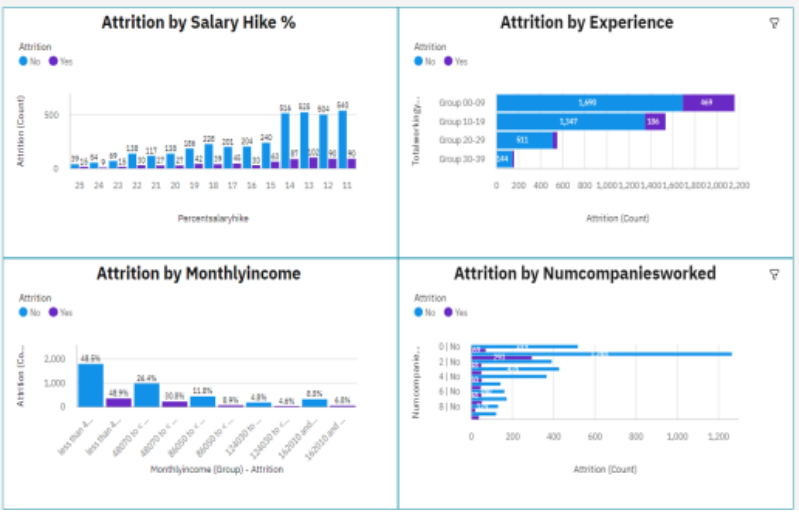
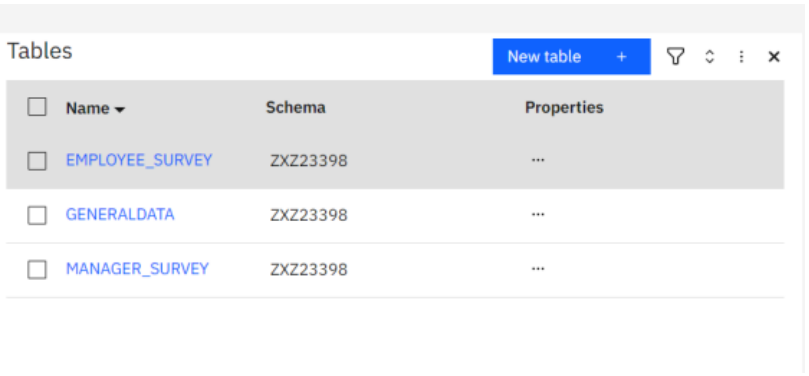
shows the number of test cases that have passed, failed, and untested

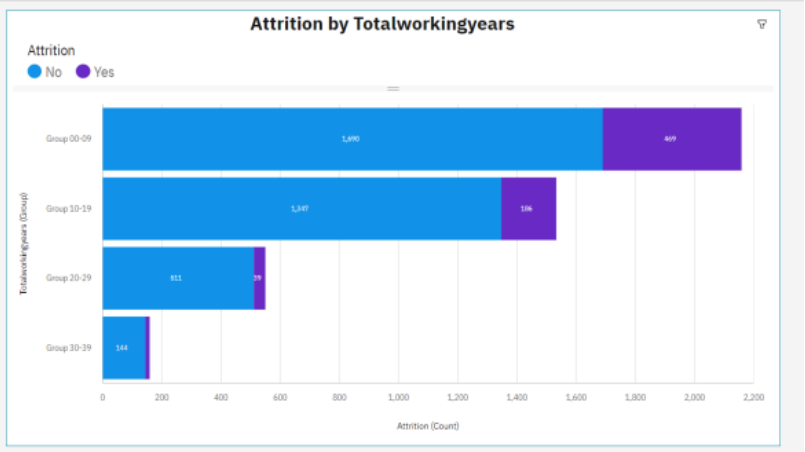
Section	Total cases	Not Tested	Fail	Pass
Login Page	6	0	0	6
User Page	5	0	0	5
Dashboard Page	3	0	0	3
Report Page	3	0	0	3
Story Page	3	0	0	3

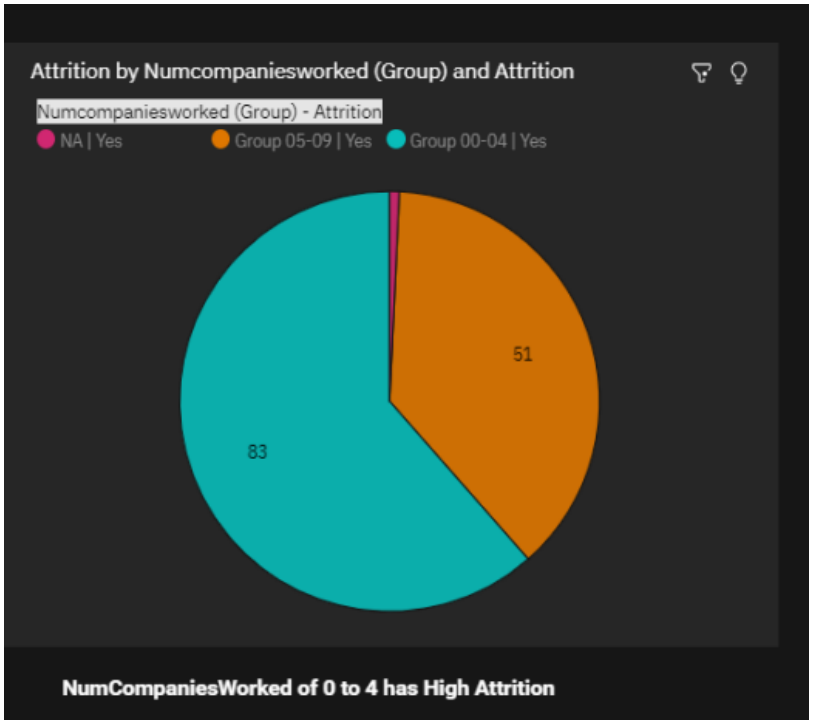
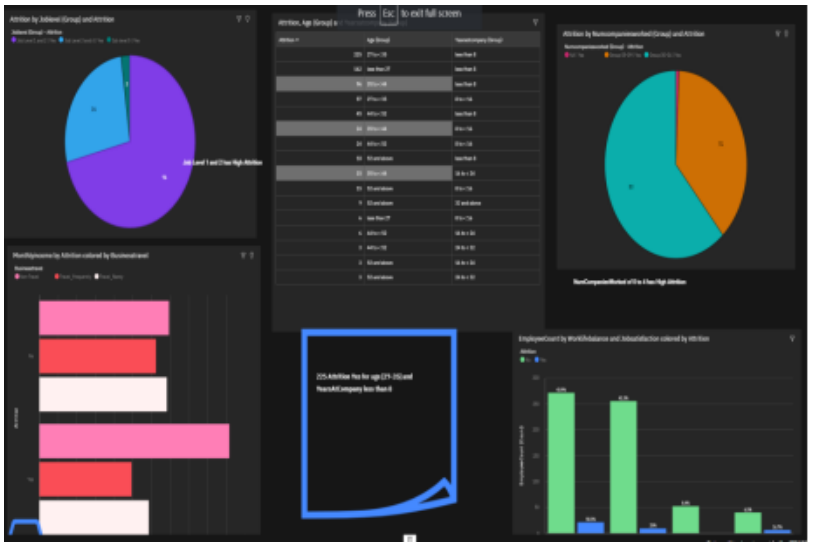
9. RESULTS

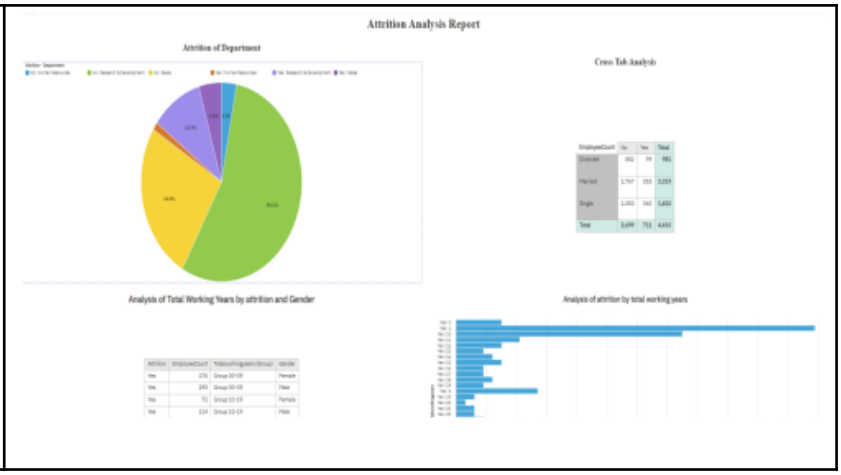
9.1 Performance Metrics

S. No.	Parameter	Screenshot / Values
1.	Dashboard design	No of Visualizations / Graphs - 15 

		
2.	Data Responsiveness	Positive
3.	Amount Data to Rendered (DB2 Metrics)	Three data were rendered: Employee Survey, General Data, Manager survey. 

4.	Utilization of Data Filters	**DashBoard** Apply Filter Excluding NA in Stacked Bar [Attrition By TotalWorkingYears]  **Report** Used Attrition Yes filter in List [Analysis of total working years by attrition and Gender] Attrition | EmployeeCount | Totalworkingyears (Group) | Gender Yes | 176 | Group 00-09 | Female Yes | 293 | Group 00-09 | Male Yes | 72 | Group 10-19 | Female Yes | 114 | Group 10-19 | Male Yes | 12 | Group 20-29 | Female Yes | 27 | Group 20-29 | Male Yes | 9 | Group 30-39 | Female Yes | 6 | Group 30-39 | Male Yes | 1 | NA | Female Yes | 1 | NA | Male **Story** Apply Attrition Yes in Attrition by numcompaniesworked

		
5.	Effective User Story	No of Scene Added – 5 Scenes 
6.	Descriptive Reports	No of Visulizations / Graphs - 4

10. ADVANTAGES & DISADVANTAGES

Advantages

1. It brings to fore the cause of employee disengagement.
2. Enables HR managers develop long-term strategies to reduce attrition
3. Competitive measures to enhance company brand image
4. Develops and shapes drills that benefit both the management and the employees
5. Enhanced work culture

Disadvantages

1. Decreased overall performance
2. Daily task management
3. Increased cost
4. Lack of knowledgeable employees
5. Create a Negative image
6. Employee development

11. CONCLUSION

High attrition destroys the value of going offshore. It causes companies to lose knowledge, incur training fees, get caught up in the never-ending cycle of hiring, and fall behind on scheduled projects. Employee recruiting and retention are big issues for IT organizations, so create a work environment where the employees are involved in the development of rewards programs.

By the way, if your employees complain of long hours, inadequate compensation, or an excessive workload, your best employees will leave and only those who are not worth retaining will stay.

12. FUTURE SCOPE

Future scope of the project is extends to companies in all industries around the world.
Our Future scope is to help organisations to prevent attrition or to plan in advance the hiring of new candidate.
Data Analytics eliminates guesswork and manual tasks. Be it choosing the right content, planning marketing campaigns, or developing products.
Organizations can use the insights they gain from data analytics to make informed decisions. Thus, leading to better outcomes and customer satisfaction.

13. APPENDIX

SourceCode

https://drive.google.com/drive/u/1/folders/1-UEtMFoc79p3V9SDsokT0DiDfgx2TxRv

GitHub

https://github.com/IBM-EPBL/IBM-Project-26417-1660026361

Project Demo Link

https://drive.google.com/file/d/1mJ92Go92hazVWBSsKTRniowG-MLo7t3e/view?usp=drivesdk