

A Comprehensive Analysis of the IT Sector's salaries and roles

1. INTRODUCTION

1.1 PROJECT OVERVIEW:

"A Comprehensive Analysis of the IT Sector Salaries and Roles" is a detailed research study that delves into the intricacies of the IT industry, providing a comprehensive understanding of the salary structures and various roles within this dynamic sector. The analysis aims to equip professionals, job seekers, and organizations with valuable insights into the factors that influence earning potential and career growth in the IT field. The analysis begins by introducing the IT sector and its significance in today's digital era. It highlights the diverse range of roles available, such as those of software developers, data scientists, cybersecurity analysts, project managers, and network administrators, among others. By exploring the multitude of roles, readers gain a clear understanding of the skill sets and responsibilities associated with each position.

1.2 PURPOSE:

The purpose of the project titled "A Comprehensive Analysis of the IT Sector Salaries and Roles" is to offer valuable insights and information to a diverse range of stakeholders. It aims to assist job seekers by providing a clear understanding of the roles, responsibilities, and salary expectations within the IT industry. For professionals already in the field, it serves as a guide for career growth and salary negotiation. Additionally, it supports organizations in attracting and retaining IT talent and helps educational institutions align their programs with industry needs. This project also contributes to a broader understanding of the IT sector's dynamics and can inform decision-making for policymakers and industry analysts. Ultimately, its purpose is to empower individuals and organizations in the IT sector with the knowledge needed to make informed choices and remain competitive in this dynamic industry.

2. LITERATURE SURVEY

2.1 Existing problem:

This literature survey aims to provide a comprehensive analysis of the IT sector's salaries and roles, exploring the factors that influence compensation in the field of information technology. The IT industry has witnessed significant growth and transformation in recent years, making it crucial to

understand the dynamics of salaries and roles to attract and retain top talent. This survey will review relevant studies, reports, and articles to explore various factors such as job roles, experience levels, geographical location, industry sectors, and technological advancements that impact IT salaries.

By analyzing existing literature, this survey will contribute to an enhanced understanding of IT sector salaries and roles, assisting professionals, organizations, and policymakers in making informed decisions.

2.2 References:

2.3 Problem Statement Definition

In the ever-evolving landscape of the Information Technology (IT) sector, there exists a significant lack of comprehensive and up-to-date information regarding the diverse roles within the industry, the associated skill sets and responsibilities, and the corresponding salary structures. This information gap presents a substantial barrier for job seekers, professionals, and organizations seeking to make informed decisions about career choices, salary negotiations, and talent acquisition in the IT field. To address this issue, our project seeks to provide a detailed and current analysis that sheds light on the intricacies of IT sector salaries and roles, ultimately empowering stakeholders with the knowledge needed to navigate this dynamic industry effectively.

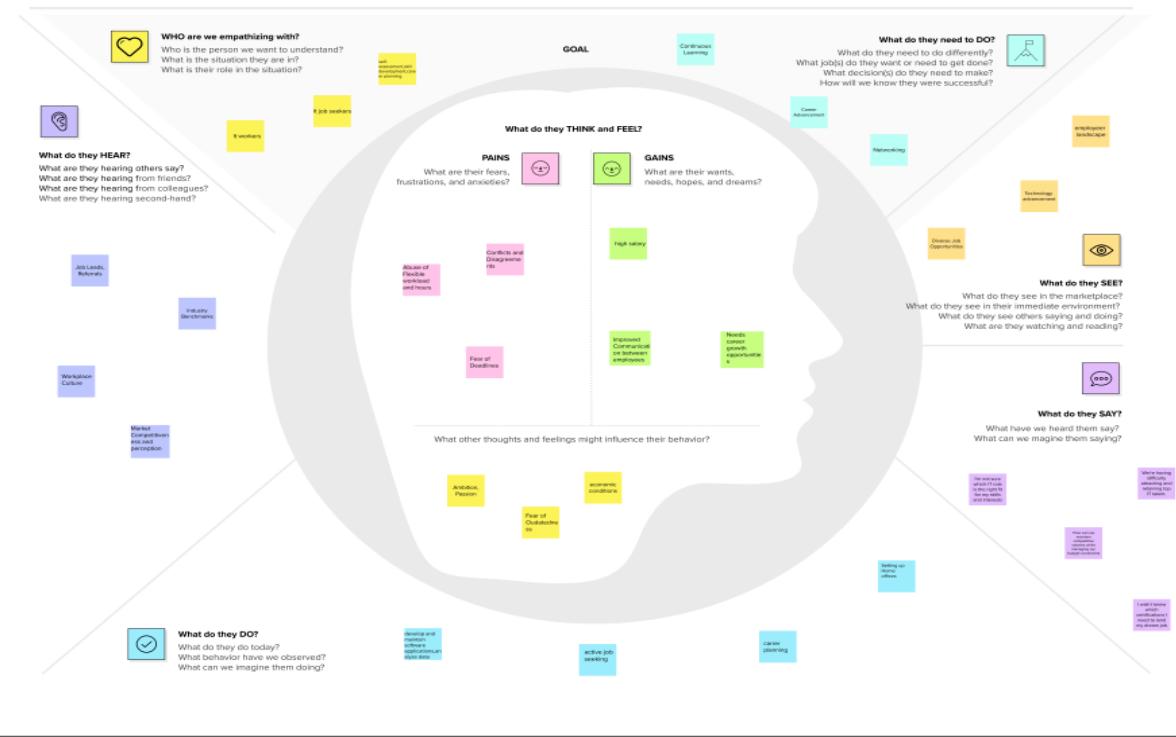
3. IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas



Develop shared understanding and empathy

Summarize the data you have gathered related to the people that are impacted by your work. It will help you generate ideas, prioritize features, or discuss decisions.



3.2 Ideation & Brainstorming

2 Brainstorm

Write down any ideas that come to mind that address your problem statement.

⌚ 10 minutes

TIP
You can select a sticky note and hit the pencil (switch to sketch) icon to start drawing!

Tulasi Kanneganti

- Provide Incentive Incentive
- Industry Challenges
- Skillset and Safety Committees
- Certification and Government Incentives

Tanwi Seelam

- Recognizable and Rewarding
- Continuous Learning and Updating
- Employee Wellbeing Programs
- Certification and self assessment
- Industry Collaboration

Ajith Kumar

- Salary Trends Over Time
- Rise-specific Analysis
- Flexible Compensation Programs
- Influence of Company Size
- Mentorship and Training Programs

Person 4

Person 5

Person 6

Person 7

Person 8

3 Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

⌚ 20 minutes

TIP
Ask someone to make browser organize them into categories.

Salary and personal growth

- Certification and self assessment
- Industry Collaboration
- Salary Trends Over Time
- Mentorship and Training Programs
- Continuous Learning and Updating

Industry Development

- Private Markets and Investors Hubs
- Industry Challenges
- Industry Collaboration

Compensation and benefits

- Flexible Compensation Programs
- Government Incentives
- Employee Wellbeing Programs
- Influence of Company Size
- Recognition and Rewards

Brainstorm & Idea prioritization

Use this template in your own brainstorming sessions or your team can use this template to share their ideas with others without being in the same room.

Before you collaborate
A little bit of preparation is a long way to go. Make sure you have everything you need to get started.

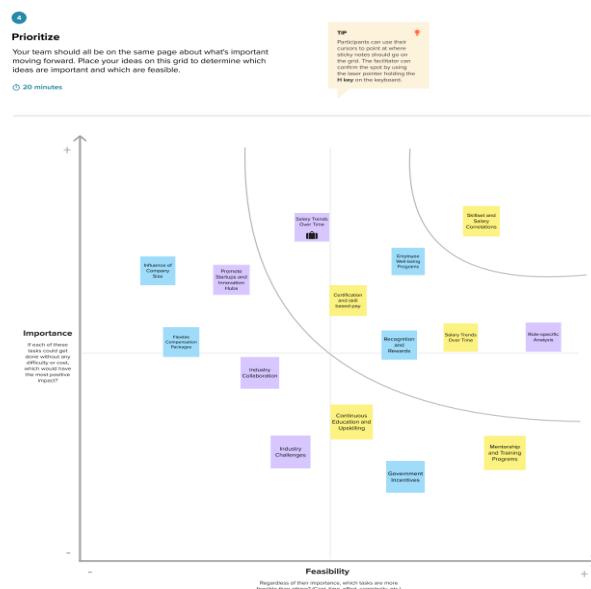
Define your problem statement
What goals are you trying to achieve? Think of the outcome you want to reach.

Brainstorm
Write down any ideas that come to mind that address your problem statement.

Group Ideas
Take turns sharing your ideas while clustering similar or related notes as you go. Once all sticky notes have been grouped, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you can break it up into smaller sub-groups.

Prioritize
Your team should be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

After you collaborate
You can reuse the ideas on this page or pull them into another template to continue working on them.



4. REQUIREMENT ANALYSIS

4.1 Functional requirement

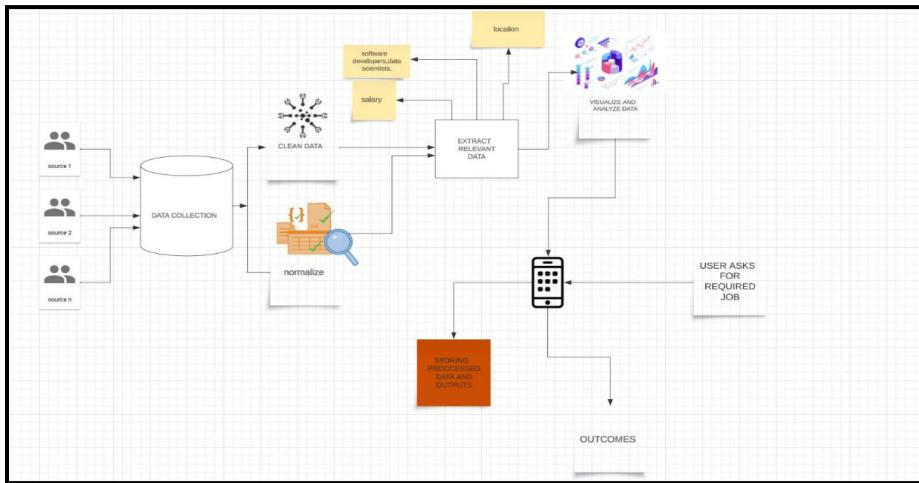
S.No	Component	Description	Technology
1.	User Interface	Web Application and chatbot in it	HTML, CSS, JavaScript
2.	Application Logic-1	Logic for a process in the application	Java / Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	For Data Retrieval	GraphQL APIs
9.	External API-2	For chatbot for displaying the charts, visualizations regarding the user queries	IBM Watson Assistant
10	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, IBM Cloud, Object Storage, Kubernetes, etc.

4.2 Non-Functional requirements

S.N o	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Chart.js, IBM services
2.	Security Implementations	When building a web application for presenting IBM visualizations, it's crucial to implement various security and access controls to protect the application, data, and users.	TLS,Encryptions,API Keys,OWASP
3.	Scalable Architecture	Consider setting up load balancers and horizontal scaling to handle increased traffic.	Load Balancers , Horizontal Scalling
4.	Availability	Justify the availability of application (e.g. use of load balancers, distributed servers etc.)	Load Balancers, content delivery networks , redundant systems etc
5.	Performance	Design consideration for the performance of the application (number of requests per sec, use of Cache, use of CDN's) etc.	JavaScript, API's , CDNS

5. PROJECT DESIGN

5.1 Data Flow Diagrams & User Stories

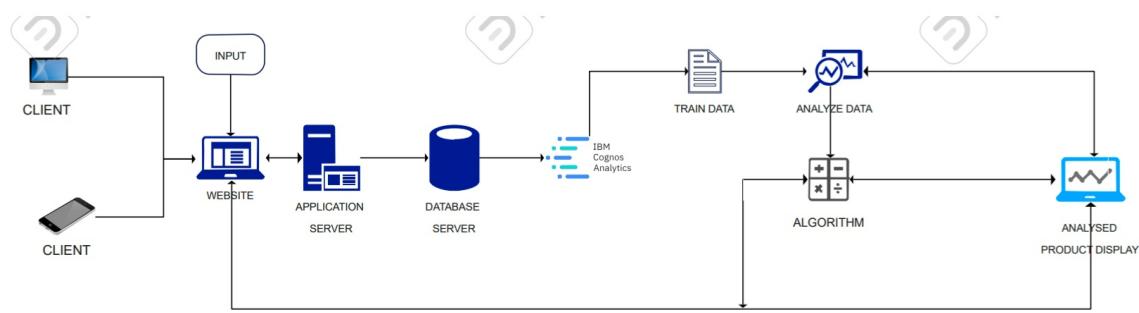


USER STORIES

User Stories						
Use the below template to list all the user stories for the product.						
User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Research Analyst	Upload and manage datasets	USN-1	As a research analyst, need to upload and analyze datasets, generate a well-structured analysis report, and have the ability to edit it before distributing to intended recipients.	Successful data upload and processing, accurate report generation, and an editing feature with version control	High	Sprint-1
Professional	Access to analysis report	USN-2	As a professional, I want easy access to a user-friendly analysis report, the ability to explore specific roles and salaries, and the option to search for career-relevant information.	responsive user interface, intuitive navigation, and functional search and filtering mechanisms	Medium	Sprint-1
Job seeker	Easy to read summary of roles, salary	USN-3	As a job seeker, I need access to an informative analysis report, clear summaries of roles, responsibilities, and salary data, and a search function for finding roles that match my interests and skills	user-friendly report format, accurate summaries, and a functional search feature	Medium	Sprint-2
Organizations	Request and receive tailored reports	USN-4	As organizations, we require customized reports based on specific criteria, a format conducive to decision-making, and the ability to request and receive tailored reports about the IT job market.	system's capacity to generate customized reports according to defined criteria and reports delivered in a format that aids decision-making	High	Sprint-1
Educational institutions	Access to reports on demand for specific IT skills	USN-5	Educational institutions need access to reports detailing demand for specific IT roles and emerging trends, enabling them to tailor their programs and curricula effectively.	system providing data on current and emerging roles, trends, and qualifications, allowing educational institutions to make informed curriculum decisions	Medium	Sprint-1
Government or policy makers	Comprehensive reports on the economic impact of the IT sector	USN-6	Government and policy makers require comprehensive reports with data on the IT sector's economic impact to help formulate relevant policies and initiatives, aiding in better decision-making.	detailed reports with accurate economic impact data, aiding policy formulation and decision-making.	High	Sprint-2

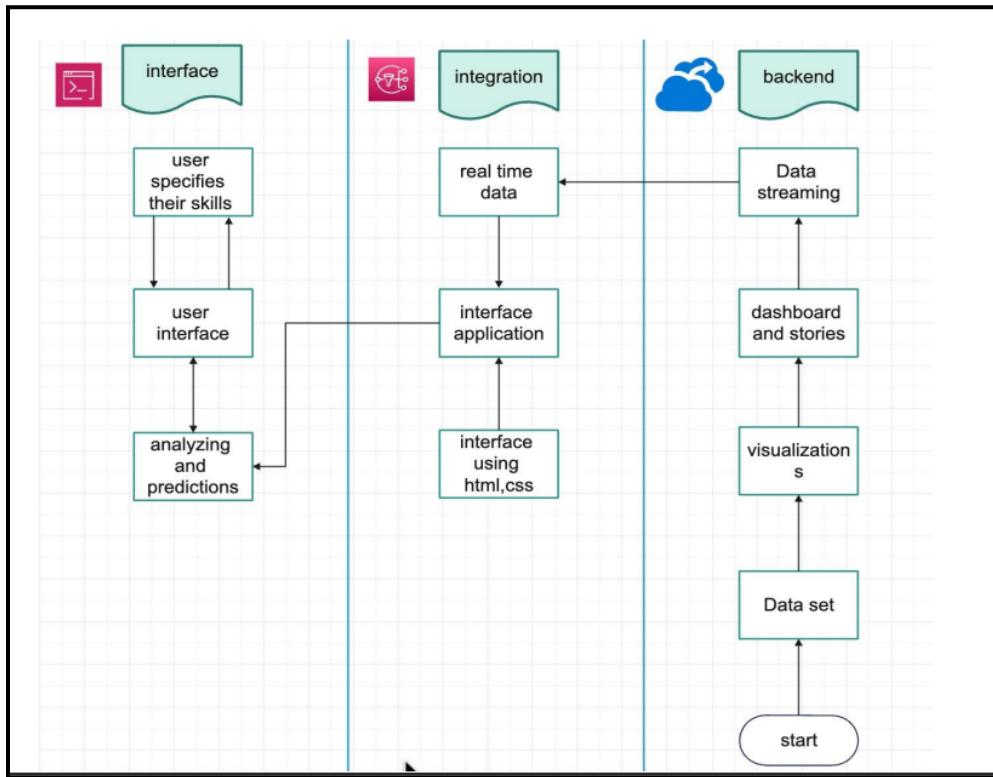
5.2 Solution Architecture

SOLUTION ARCHITECTURE DIAGRAM:



6. PROJECT PLANNING & SCHEDULING

6.1 Technical Architecture



6.2 Sprint Planning & Estimation

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	registration	USN-3	As a client , I will register to the portal to access the visualizations	2	medium	Tanwi Tulasi Ajith
Sprint-1	login	USN-3	As a client, I can log into my account using my email and a secure password.	1	medium	Tanwi Tulasi Ajith
Sprint-2	Access to analysis report	USN-2	As a professional, I want easy access to a user-friendly analysis report, the ability to explore specific roles and salaries, and the option to search for career-relevant information.	2	high	Tanwi Tulasi Ajith
Sprint-1	Easy to read summary of roles,salary	USN-3	As a job seeker, I need access to an informative analysis report, clear summaries of roles, responsibilities, and salary data, and a search function for finding roles that match my interests and skills.	2	Medium	Tanwi Tulasi Ajith
Sprint-2	Request and receive tailored reports	USN-4	As organizations, we require customized reports based on specific criteria, a format conducive to decision-making, and the ability to request and receive tailored reports about the IT job market.	1	High	Tanwi Tulasi Ajith
Sprint-2	Access to reports on demand for specific it skills	USN-5	Educational institutions need access to reports detailing demand for specific IT roles and emerging trends, enabling them to tailor their programs and curricula effectively.	1	medium	Tanwi Tulasi Ajith
Sprint-1	Comprehensive reports on the economic impact of the IT sector	USN-6	Government and policy makers require comprehensive reports with data on the IT sector's economic impact to help formulate relevant policies and initiatives, aiding in better decision-making.	2	high	Tanwi Tulasi Ajith
Sprint-2	Upload and manage datasets	USN-1	As a research analyst, need to upload and analyze datasets, generate a well-structured analysis report, and have the ability to edit it before distributing to intended recipients	2	high	Tanwi Tulasi Ajith

6.3 Sprint Delivery Schedule

Project Tracker, Velocity & Burndown Chart: (4 Marks)

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	7	6 Days	23 Oct 2022	29 Oct 2022	8	-
Sprint-2	6	6 Days	31 Oct 2022	05 Nov 2022	5	-
Sprint-3	-	-	-	-		
Sprint-4	-	-	-	-		

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

7.1 Feature 1

We integrated dashboards,stories,reports from ibm to webpage in html

```
<!DOCTYPE html>
<html>
<head>
    <title>Dashboard, Reports, and Stories</title>
    <style>
        body {
            font-family: Arial, sans-serif;
            background-image:
url('https://t3.ftcdn.net/jpg/02/60/08/82/360_F_260088278_GD7xwS1gVVLheT6yNnA3hgtCD1i3hq2n.jpg'); /* Background image URL */
            background-size: cover;
            background-repeat: no-repeat;
            background-attachment: fixed;
            margin: 0;
            padding: 0;
        }

        header {
            background-color: #333;
            color: #fff;
            text-align: center;
            padding: 10px;
        }

        .container {
            display: flex;
            flex-direction: column;
            align-items: center;
            width: 80%;
            margin: 0 auto;
            padding: 20px;
            background-color: transparent;
            border-radius: 10px;
            box-shadow: 0 0 10px rgba(0, 0, 0, 0.2);
        }

        section {
            width: 100%;
            margin-bottom: 20px;
        }
    </style>

```

```
padding: 20px;
background-color: #f9f9f9;
border-radius: 5px;
}

h2 {
font-size: 24px;
margin-bottom: 10px;
}

img {
max-width: 100%;
height: auto;
}

.btn-container {
display: flex;
justify-content: space-between;
width: 100%;
padding: 10px 0;
}

.left-btns {
display: flex;
}

.right-btns {
display: flex;
}

.btn {
padding: 10px 20px;
background-color: #b72eae; /* Dark green button color */
color: #fff;
border: none;
border-radius: 5px;
cursor: pointer;
text-decoration: none;
margin-right: 10px;
}
```

```

</style>
<link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/6.0.0-beta3/css/all.min.css">
</head>
<body>
<header>
<h1>IT Sector role and Salaries</h1>
</header>
<div class="container">
<div class="btn-container">
<div class="left-btns">
<button class="btn" onclick="showDashboard()">Dashboard</button>
<button class="btn" onclick="showReports()">Reports</button>
<button class="btn" onclick="showStories()">Stories</button>
</div>
<div class="right-btns">
<button class="btn" onclick="showUser()"><i class="fas fa-user"></i> User</button>
<button class="btn" onclick="showRegister()"><i class="fas fa-user-plus"></i> Register</button>
</div>
</div>
<section id="dashboard" style="display: none;">
<h2>Dashboard</h2>
<iframe
src="https://us3.ca.analytics.ibm.com/bi/?perspective=dashboard&pathRef=.my_folders%2FIT%2BSECTOR%2
FIT%2Bdashboard&closeWindowOnLastView=true&ui_appbar=false&ui_navbar=false&shareMode=embedded&action=view&mode=dashboard&subView=model0000018b7b8b249e_00000000"
width="1000" height="1000" frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>
</section>
<section id="reports" style="display: none;">
<h2>Reports</h2>
<div id="reportContent">
<iframe
src="https://us3.ca.analytics.ibm.com/bi/?pathRef=.my_folders%2FIT%2BSECTOR%2FNew%2Breport123&closeWindowOnLastView=true&ui_appbar=false&ui_navbar=false&shareMode=embedded&action=re
un&format=HTML&prompt=false" width="1000" height="1000" frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>
</section>
<section id="stories" style="display: none;">
<h2>Stories</h2>
<iframe
src="https://us3.ca.analytics.ibm.com/bi/?perspective=story&pathRef=.my_folders%2FIT%2BSECTOR%2FIT%2
BSECTOR%2BSTORY2&closeWindowOnLastView=true&ui_appbar=false&ui_navbar=false&shareMode=embedded&action=re
un&format=HTML&prompt=false" width="1000" height="1000" frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>
</section>

```

```

reMode=embedded&action=view&sceneId=-1&sceneTime=0" width="1000" height="1000"
frameborder="0" gesture="media" allow="encrypted-media" allowfullscreen=""></iframe>

</div>
</section>
</div>
<footer>
<p>&copy; IT Sector role and Salaries</p>
</footer>
<script>
    function showDashboard() {
        document.getElementById("dashboard").style.display = "block";
        document.getElementById("reports").style.display = "none";
        document.getElementById("stories").style.display = "none";
    }

    function showReports() {
        document.getElementById("dashboard").style.display = "none";
        document.getElementById("reports").style.display = "block";
        document.getElementById("stories").style.display = "none";
    }

    function showStories() {
        document.getElementById("dashboard").style.display = "none";
        document.getElementById("reports").style.display = "none";
        document.getElementById("stories").style.display = "block";
    }

    function showUser() {
        // Implement functionality for showing user-related content
    }

    function showRegister() {
        // Implement functionality for showing registration-related content
    }
</script>
</body>
</html>

```

7.2 Feature 2

flask for ui integration

```
from flask import Flask, render_template, request, redirect, url_for

app = Flask(__name__)

@app.route('/')
def login():
    return render_template('tan.html')

@app.route('/neww.html', methods=['POST'])
def login_submit():

    return redirect(url_for('neww'))

@app.route('/neww.html')
def neww():
    return render_template('neww.html')

if __name__ == '__main__':
    app.run(debug=True)
```

8. PERFORMANCE TESTING

8.1 Performace Metrics

Model Performance Testing:

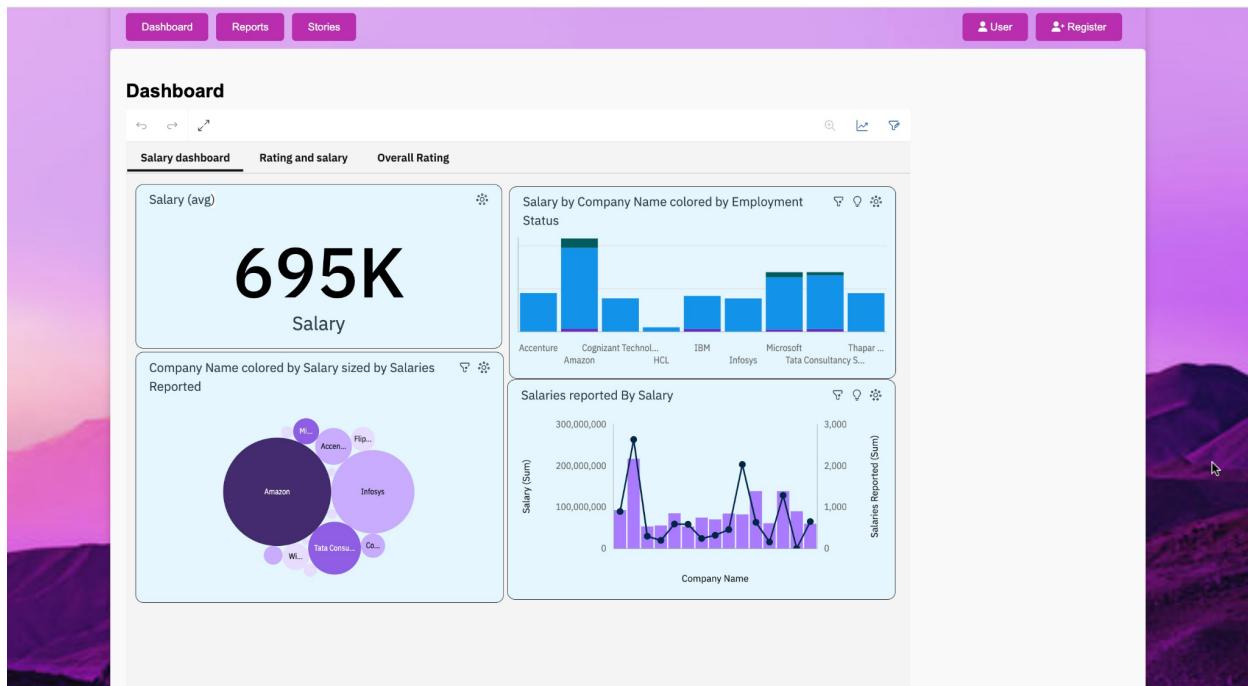
Project team shall fill the following information in model performance testing template.

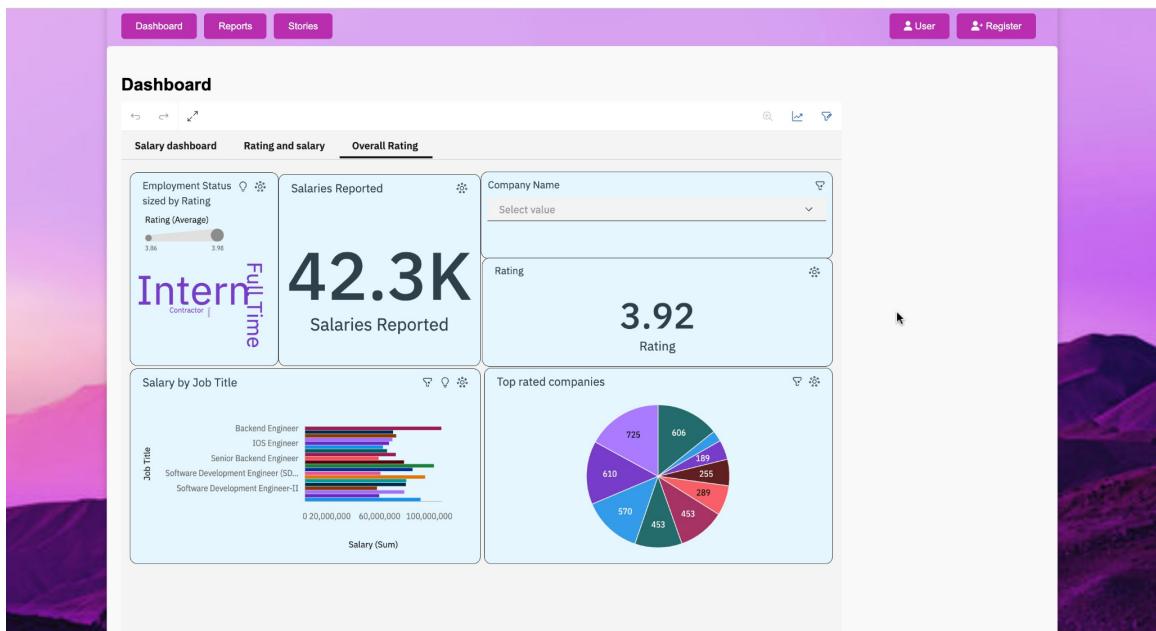
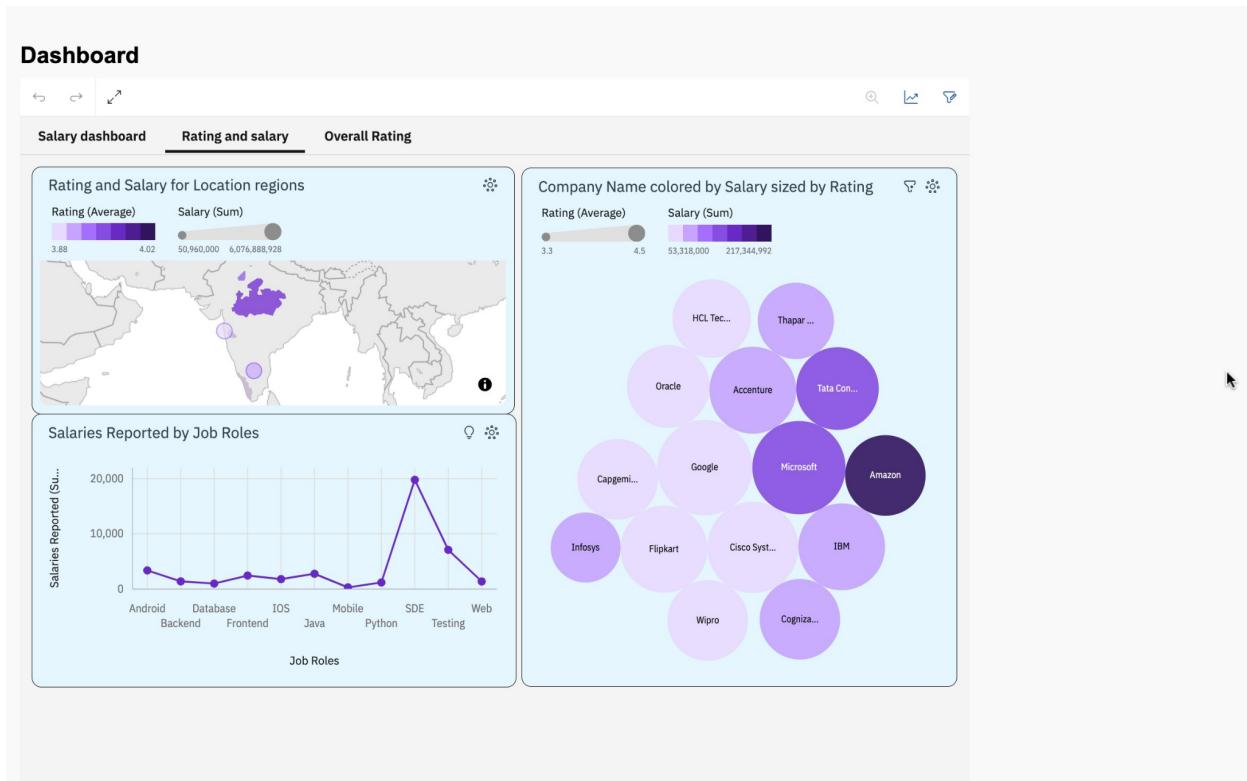
S.No.	Parameter	Screenshot / Values
1.	Dashboard design	No of Visualizations / Graphs - 14 No of tabs = 3 
2.	Data Responsiveness	Data will change dynamically according to the graph 

		
3	Utilization of Data Filters	We created filters which are absolutely working 
4.	Effective User Story	No of Scene Added - 9 

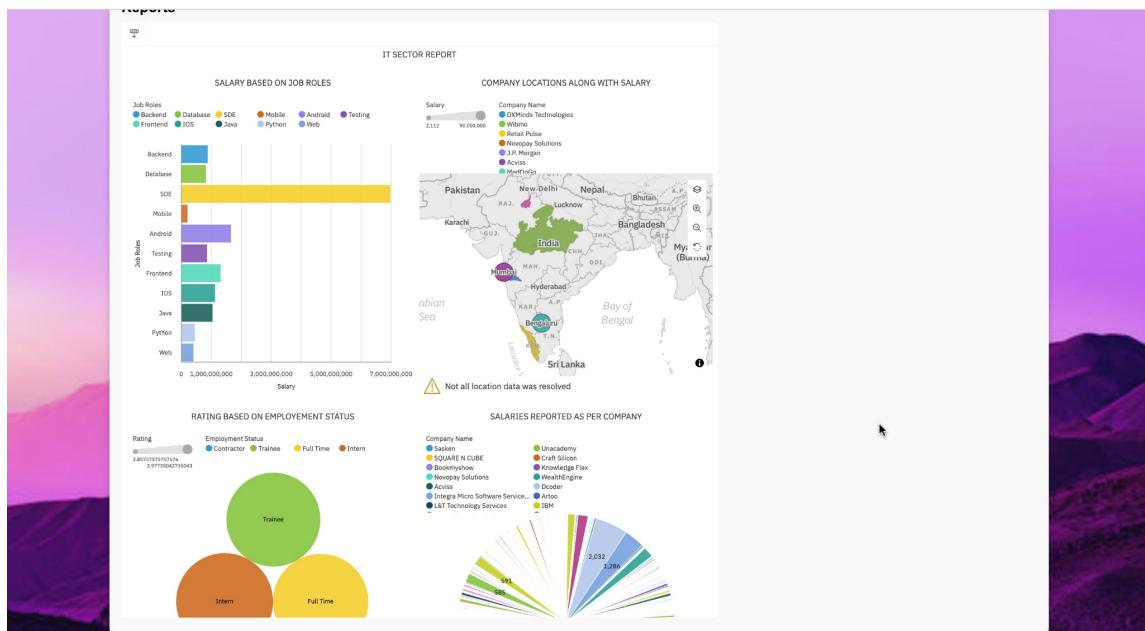
9. RESULTS

9.1 Output Screenshots: **dashboards:**

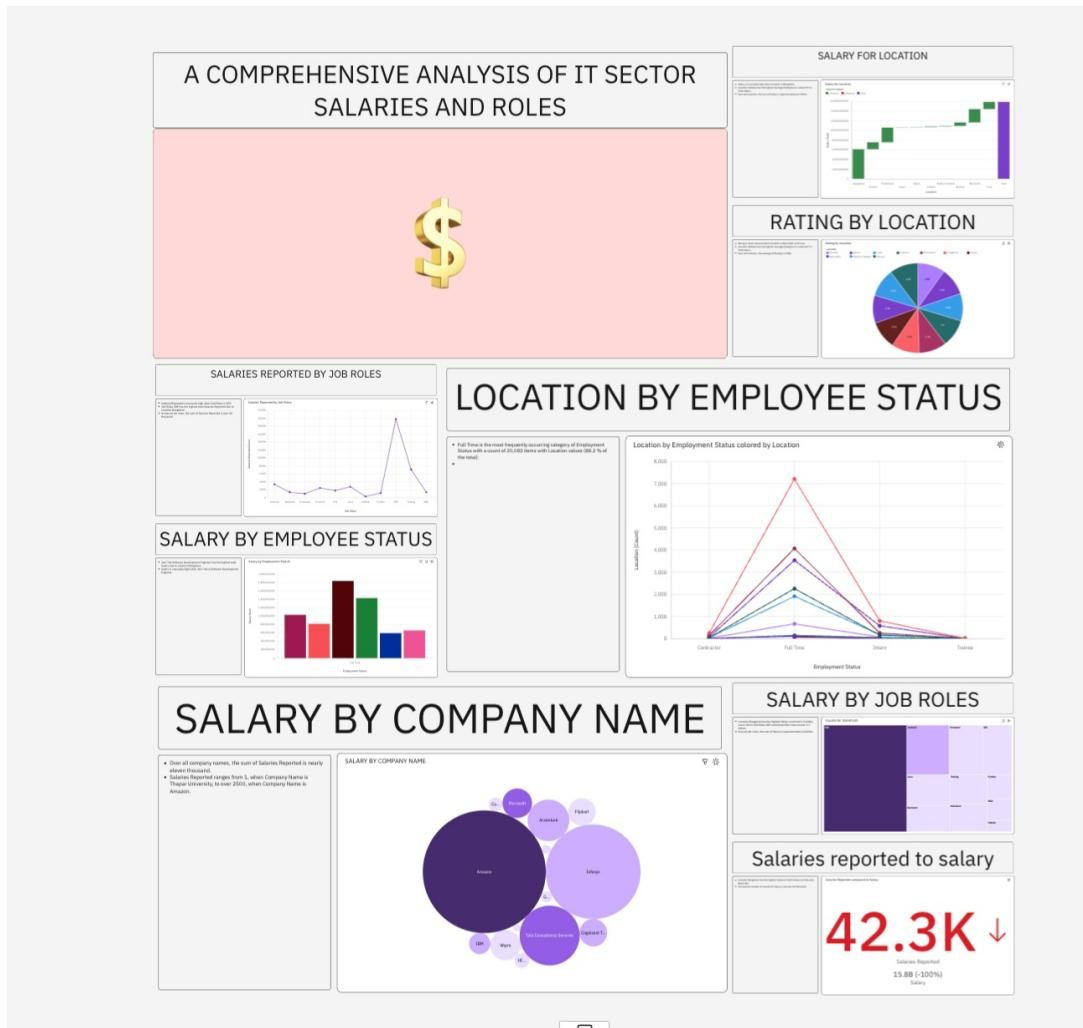




Reports:



Story:



10. ADVANTAGES & DISADVANTAGES:

Advantages of the project "A Comprehensive Analysis of the IT Sector Salaries and Roles" are numerous. It equips individuals with vital information for making well-informed career decisions, helping job seekers and professionals navigate the complex IT industry more effectively. For organizations, it offers a competitive edge by providing access to industry-standard salary data, facilitating the attraction and retention of top IT talent. Additionally, the project ensures that educational programs remain relevant to industry needs, producing graduates with the right skills. Policymakers and industry analysts also benefit from gaining a deeper understanding of the ever-changing IT sector, aiding them in policy and strategy development.

Nonetheless, there are some disadvantages to consider. Data accuracy is crucial, and the project's reliability depends on the sources and methodologies used; inaccurate or outdated information could lead to misguided decisions. Given the dynamic nature of the IT sector, the data may quickly become obsolete. While the project provides valuable general information, it might not account for the specific nuances of individual cases. Conducting such a comprehensive analysis is resource-intensive and may not

cover every possible role or subsector within IT. Despite these limitations, the advantages of the project make it a valuable resource for IT stakeholders.

11. CONCLUSION:

The conclusion of the project "A Comprehensive Analysis of the IT Sector Salaries and Roles" underscores the critical importance of understanding the intricacies of the IT industry for job seekers, professionals, organizations, educators, and policymakers. This project has succeeded in shedding light on the dynamic landscape of IT by offering comprehensive insights into the diverse roles, skill sets, and salary structures within the sector. By doing so, it has equipped individuals with the knowledge needed to make informed career choices, negotiate salaries, and pursue career growth effectively. Moreover, it has provided organizations with a competitive advantage in attracting and retaining top IT talent, ensuring that academic programs remain aligned with industry needs, and offered valuable insights into the broader IT industry dynamics. While acknowledging the challenges, such as data accuracy and the ever-changing nature of the sector, this project stands as a valuable resource that empowers stakeholders to navigate the IT industry with confidence and make informed decisions, ultimately contributing to the growth and sustainability of this vital sector in our digital era

12. FUTURE SCOPE:

The future scope of the project "A Comprehensive Analysis of the IT Sector Salaries and Roles" holds great promise as the IT industry continues to evolve and expand. This project can serve as a foundation for ongoing research and analysis, offering opportunities for further updates and refinements to keep the data current. As the IT sector embraces new technologies and trends, the project can adapt to incorporate these changes, providing insights into emerging roles and skill requirements. Additionally, with globalization and the remote work trends, regional disparities in salaries and job opportunities may become even more pronounced, making ongoing analysis critical. Furthermore, the project's insights can be leveraged for the development of targeted training programs and certifications, ensuring that individuals are equipped with the most in-demand skills. As artificial intelligence, cybersecurity, and data science continue to gain prominence, the project can expand to explore these specialized domains. Ultimately, the future scope of this project is characterized by its adaptability and its potential to remain a valuable resource as the IT industry advances and diversifies.

13. APPENDIX:

GITHUB LINK:

<https://github.com/smartinternz02/SI-GuidedProject-586856-1697536525>

VIDEO DEMONSTRATION LINK:

<https://drive.google.com/file/d/1vAdyhw68nxuP3AceLP1t9BtYjz7XNkDS/view?usp=sharing>

TEAM ID : TEAM-591264