

A Project report on

FACULTY APPRAISAL SYSTEM

*Submitted in partial fulfillment of the requirements
for the award of the degree of*

BACHELOR OF TECHNOLOGY

in

COMPUTER SCIENCE & ENGINEERING

By

S.M. SAKIYA RABBANI	(204G1A0591)
P GANA SREE AKSHAYA REDDY	(204G1A05C7)
M. SARANYA	(204G1A0593)
P.M. ARAB KHAN	(214G5A0508)

Under the Guidance of

Dr. M. Ranjit Reddy M.Tech., Ph.D.

Professor



Department of Computer Science & Engineering

SRINIVASA RAMANUJAN INSTITUTE OF TECHNOLOGY
(AUTONOMOUS)

Rotarypuram Village, BK Samudram Mandal, Ananthapuramu-515701

2023-2024

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(AUTONOMOUS)

Rotarypuram Village, BK Samudram Mandal, Ananthapuramu-515701

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING



Certificate

This is to certify that the Project report entitled **FACULTY APPRAISAL SYSTEM** is the bonafide work carried out by **S.M. Sakiya Rabbani, P. Gana Sree Akshaya Reddy, M. Saranya, P. M. Arab Khan**, bearing Roll Number **204G1A0591, 204G1A05C7, 204G1A0593, 214G5A0508** in partial fulfilment of the requirements for the award of the degree of **Bachelor of Technology** in **Computer Science & Engineering** during the academic year 2023-2024.

Project Guide

Dr. M. Ranjit Reddy M.Tech., Ph.D.

Professor

Head of the Department

Mr. P. Veera Prakash M.Tech., (Ph.D.)

Assistant Professor

Date:

Place: Rotarypuram

External Examiner

DECLARATION

We, Ms. S.M. Sakiya Rabbani bearing reg no: 204G1A0591, Ms. P. Gana Sree Akshaya Reddy bearing reg no:204G1A05C7, Ms. M. Saranya bearing reg no: 204G1A0593, Mr. P.M. Arab Khan bearing reg no: 214G5A0508 students of **SRINIVASA RAMANUJAN INSTITUTE OF TECHNOLOGY**, Rotarypuram, hereby declare that the dissertation entitled **“FACULTY APPRAISAL SYSYEM ”** embodies the report of our project work carried out by us during IV year Bachelor of Technology under the guidance of **Dr. M. Ranjit Reddy** ,M.Tech., PhD Department of CSE, and this work has been submitted for the partial fulfillment of the requirements for the award of the Bachelor of Technology degree.

The results embodied in this project have not been submitted to any other University of Institute for the award of any Degree.

S.M SAKIYA RABBANI

Reg no: 204G1A0591

P.GANA SREE AKSHAYA REDDY

Reg no: 204G1A05C7

M.SARANYA

Reg no: 204G1A0593

P.M ARAB KHAN

Reg no: 214G5A0508

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Vision:

To become a premier Educational Institution in India offering the best teaching and learning environment for our students that will enable them to become complete individuals with professional competency, human touch, ethical values, service motto, and a strong sense of responsibility towards environment and society at large.

Mission:

- Continually enhance the quality of physical infrastructure and human resources to evolve in to a center of excellence in engineering education.
- Provide comprehensive learning experiences that are conducive for the students to acquire professional competences, ethical values, life-long learning abilities and understanding of the technology, environment and society.
- Strengthen industry institute interactions to enable the students work on realistic problems and acquire the ability to face the ever changing requirements of the industry.
- Continually enhance the quality of the relationship between students and faculty which is a key to the development of an exciting and rewarding learning environment in the college.

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DM 3: Perpetual elevation of Industry-Institute interactions to facilitate the students to work on real-time problems to serve the needs of the society.

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Project Associates

204G1A0591

204G1A05C7

204G1A0593

214G5A0508

ABSTRACT

Faculty performance appraisal predominantly relies on paper-based assessments and the manual calculation of points based on a range of factors. These factors encompass cognitive abilities, educational achievements, professional accomplishments, and other relevant attributes that contribute to an individual's intellectual prowess. This traditional approach is undergoing a transformation through the integration of technology, specifically utilizing data analytics techniques. Intelligence appraisal system revolutionizes the assessment of faculty by using data analytics and a dynamic web page. Faculty members log in to provide their achievements through a user-friendly form. The system assigns points to each accomplishment based on predefined weights, offering real-time feedback and visualizations on the final appraisal points.

KEYWORDS: Faculty Appraisal Performance, Data Analytics, Intelligence Appraisal System

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LIST OF ABBREVIATIONS

PC	Personal Computer
MICR	Magnetic Ink Character Recognition
OMR	Optimal Mark Recognition
DFD	Data Flow Diagram
ER	Entity Relationship
UML	Unified Modelling Language

CHAPTER 1

INTRODUCTION

1.1 Motivation:

The Faculty Appraisal System aims to modernize and streamline the assessment process for academic professionals. By leveraging data analytics and a dynamic web interface, this system offers a user-friendly platform for faculty members to input their achievements. The automated point assignment, guided by predefined weights, ensures fairness and accuracy in the appraisal process. Real-time feedback and visualizations enhance transparency and contribute to a more efficient and effective faculty evaluation system.

1.2 Problem Statement:

Faculty performance appraisal predominantly relies on paper-based assessments and manual calculation of points based on a range of factors. Creating an intelligence appraisal system that assists academic institutions in making informed decisions about promotions, salary adjustments, and recognition necessitates aligning the outcomes with institutional goals and policies. Developing a report generation mechanism that translates accumulated points into clear appraisal insights and potential increments, promoting transparency and trust among faculty and stakeholders

1.3 Objective of the Project:

- **Research Objective 1:** To develop web based faculty performance appraisal system by giving the relevant access to the faculty.
- **Research Objective 2:** To implement data visualization to the data obtained and provide analysis of the appraisal points achieved by faculty.

1.4 Scope:

The Faculty Appraisal System aims to modernize traditional performance assessments through the integration of data analytics and technology. This system will provide a dynamic web-based platform where faculty members can log in and submit their achievements via a user-friendly form. The system will employ predefined weights to assign points to each accomplishment, offering real-time feedback and visualizations for a comprehensive and efficient appraisal process.

1.5 Project Introduction:

The Faculty Appraisal System marks a pivotal shift from traditional paper-based assessments to a technologically advanced and data-driven approach in evaluating the performance of academic professionals. In the contemporary landscape of higher education, assessing faculty members' contributions requires a comprehensive and dynamic system. This project introduces an innovative solution that leverages data analytics techniques and a user-friendly web interface to streamline the appraisal process.

The system invites faculty members to log in and document their cognitive abilities, educational achievements, professional accomplishments, and other relevant attributes via an intuitive form. Points are automatically assigned to each accomplishment based on predefined weights, facilitating a fair and transparent evaluation. Real-time feedback and visualizations are provided, offering both faculty members and administrators valuable insights into the appraisal points. The Faculty Appraisal System not only modernizes the assessment methodology but also enhances efficiency, objectivity, and the overall quality of faculty performance evaluations in the academic realm.

CHAPTER 2

LITERATURE SURVEY

In their recent study, Smith et al.[1] explore the integration of data analytics in faculty performance appraisal systems. The researchers conducted a thorough literature review to assess the current landscape of faculty appraisal methods and identified the growing trend towards incorporating data analytics. The paper emphasizes the need for dynamic systems that go beyond traditional paper-based assessments, highlighting the potential benefits of real-time feedback and visualization in enhancing the appraisal process. The findings provide valuable insights into the transformative impact of data analytics on faculty evaluation.

[2] Johnson et al. conducted a comprehensive survey of recent technological innovations in faculty appraisal systems. The paper reviews various approaches, including the use of dynamic web pages and user-friendly interfaces. The authors emphasize the importance of technology in revolutionizing traditional appraisal methods and discuss how these innovations contribute to a more efficient and transparent evaluation process. The study serves as a valuable resource for institutions seeking to adopt modern faculty appraisal paradigms.

[3] Chen et al. present a forward-looking perspective on faculty appraisal systems, with a focus on user-centric design principles. The study investigates the role of intelligent systems in providing a user-friendly experience for faculty members. By incorporating insights from human-computer interaction and design thinking, the authors argue that enhancing the user experience is crucial for the successful implementation of appraisal systems. The paper provides practical recommendations for developing appraisal systems that prioritize usability and engagement.

[4] Davis et al. conduct a meta-analysis to evaluate the impact of technology-enabled faculty appraisal systems. The study synthesizes findings from existing literature to assess the effectiveness of these systems in improving the accuracy and fairness of evaluations. The researchers identify key success factors and challenges associated with the adoption of technology in faculty appraisal. The meta-analysis offers valuable insights for institutions considering the implementation of technology-driven appraisal solutions.

[5] Patel et al. delve into the current trends and challenges associated with data-driven approaches to faculty appraisal. The paper explores the evolving landscape of appraisal systems, emphasizing the role of data analytics in capturing and analysing diverse faculty achievements. The authors discuss the potential benefits and address the challenges and ethical considerations associated with data-driven appraisal. The study contributes to the ongoing discourse on the transformative impact of data-driven approaches in shaping the future of faculty evaluation.

CHAPTER 3

METHODOLOGY

3.1 Existing System

The existing Faculty Appraisal System relies on paper-based assessments and manual point calculations. It evaluates faculty members based on cognitive abilities, educational achievements, professional accomplishments, and other relevant attributes. However, this traditional approach lacks efficiency and real-time feedback. The system is undergoing a transformation with the integration of technology, incorporating data analytics and a dynamic web page for faculty members to input achievements and receive instant, visually presented appraisal points.

3.2 Disadvantages

- Time consuming Process
- Risk Of Errors
- Limited Accessibility and Visibility.

3.3 Proposed System

The proposed Faculty Appraisal System revolutionizes traditional faculty assessments by leveraging data analytics and a dynamic web interface. Faculty members engage with a user-friendly form to input their achievements, while the system assigns points to each accomplishment using predefined weights. This intelligent appraisal system ensures real-time feedback and visualizations, enhancing the efficiency and transparency of the appraisal process for academic institutions.

3.4 Advantages

1. Efficiency and Timeliness
2. Transparency and Fairness
3. Data-Driven Insights.

3.5 WORK FLOW OF PROPOSED SYSTEM

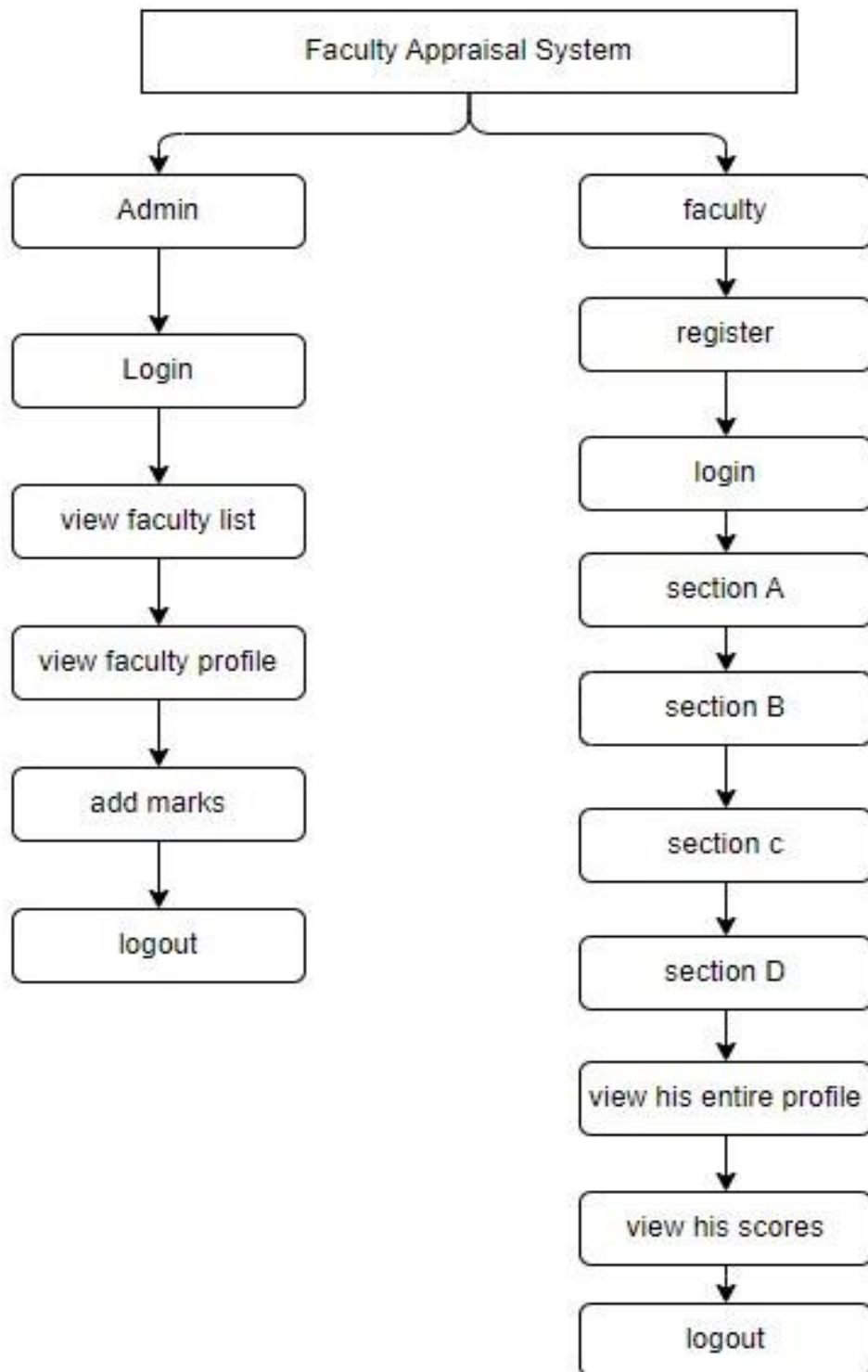


Fig. 3.1 Workflow of proposed system

CHAPTER 4

REQUIREMENTS ANALYSIS

4.1 Functional and Non-functional Requirements

Requirement's analysis is very critical process that enables the success of a system or software project to be assessed. Requirements are generally split into two types: Functional and non-functional requirements.

Functional Requirements:

1. User Authentication:

- The system should have a secure user authentication mechanism to ensure that only authorized faculty members can access and input their appraisal data.

2. User Input Form:

- A user-friendly input form should be provided to faculty members for entering their achievements, which should include fields for cognitive abilities, educational achievements, professional accomplishments, and other relevant attributes.

3. Points Assignment Algorithm:

- The system should incorporate an algorithm that assigns points to each accomplishment based on predefined weights, reflecting the importance of different factors in the appraisal process.

4. Real-time Feedback:

- The system should provide real-time feedback to faculty members, showing the accumulated points as they input their achievements. This feedback can help them understand the impact of their submissions on the overall appraisal.

5. Visualizations:

- The system should generate visualizations, such as graphs or charts, to represent the faculty members' appraisal points. This helps in presenting a clear and concise overview of their performance.

6. Data Analytics Integration:

- Implement data analytics techniques to analyse and interpret the aggregated faculty appraisal data, providing insights and trends that can inform decision-making processes.

7. Dynamic Web Page:

- The appraisal system should be accessible through a dynamic web page, ensuring ease of use and flexibility for faculty members to log in and update their achievements from any location.

Non – Functional Requirements :**1. Security:**

- The system should adhere to robust security measures, including encryption and secure data storage, to protect sensitive faculty information.

2. Scalability:

- The system should be scalable to accommodate a growing number of faculty members, ensuring optimal performance as the user base expands.

3. Reliability:

- The system should be reliable, with minimal downtime and a backup mechanism to prevent data loss in case of unexpected issues.

4. Usability:

- The user interface should be intuitive and user-friendly, requiring minimal training for faculty members to navigate and input their appraisal data.

5. Performance:

- The system should have acceptable response times, even when handling a large volume of concurrent users, to ensure a seamless and efficient appraisal process.

6. Compliance:

-The system should comply with relevant privacy and data protection regulations, ensuring that faculty members' personal and appraisal data is handled ethically and legally.

7. Accessibility:

-The system should be accessible from various devices and browsers, promoting inclusivity and allowing faculty members to access the appraisal system with ease.

4.2 Hardware Requirements:

Processor	:	I3/Intel Processor
Operating System	:	Windows 7/8/10
RAM	:	8 GB
Hard Disk	:	500 GB

4.3 Software Requirements:

Database	:	MySQL
Back End	:	Express
Run – Time Environment	:	Node

Front End	:	React
IDE	:	Visual Studio Code

4.4Architecture:

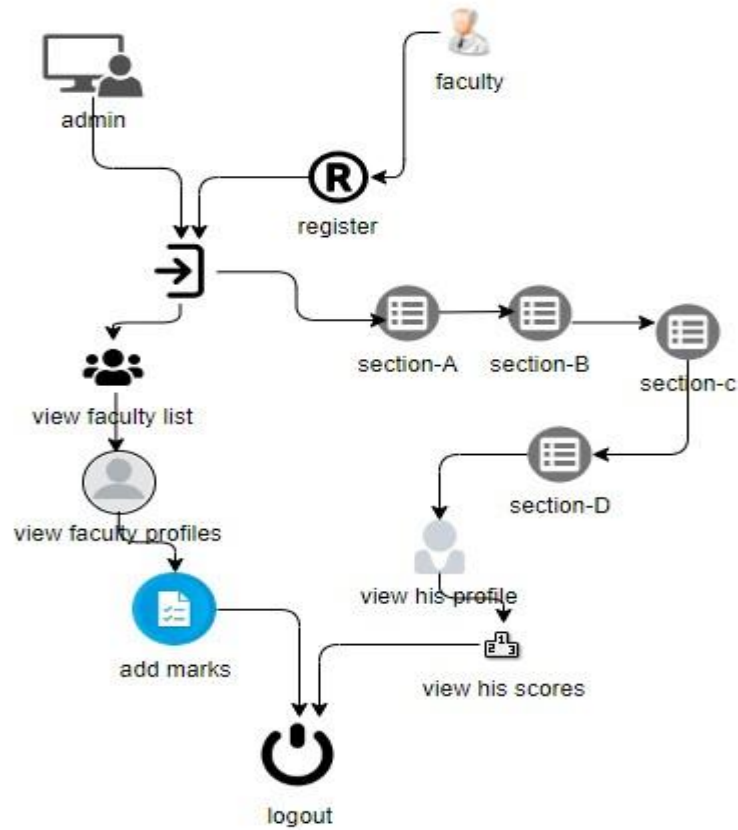


Fig. 4.1: Architecture of Faculty login page

CHAPTER 5

SYSTEM DESIGN

5.1 Introduction of Input Design:

In an information system, input is the raw data that is processed to produce output. During the input design, the developers must consider the input devices such as PC, MICR, OMR, etc.

Therefore, the quality of system input determines the quality of system output. Well designed input forms and screens have following properties –

- It should serve specific purpose effectively such as storing, recording, and retrieving the information.
- It ensures proper completion with accuracy.
- It should be easy to fill and straightforward.
- It should focus on user's attention, consistency, and simplicity.
- All these objectives are obtained using the knowledge of basic design principles regarding –
 - What are the inputs needed for the system?
 - How end users respond to different elements of forms and screens.

Objectives for Input Design:

The objectives of input design are –

- To design data entry and input procedures
- To reduce input volume
- To design source documents for data capture or devise other data capture methods
- To design input data records, data entry screens, user interface screens, etc.
- To use validation checks and develop effective input controls.

Output Design:

The design of output is the most important task of any system. During output design, developers identify the type of outputs needed, and consider the necessary output controls and prototype report layouts.

Objectives of Output Design:

The objectives of input design are:

- To develop output design that serves the intended purpose and eliminates the production of unwanted output.
- To develop the output design that meets the end user's requirements.
- To deliver the appropriate quantity of output.
- To form the output in appropriate format and direct it to the right person.
- To make the output available on time for making good decisions.

5.2 UML Diagrams:**5.2.1 Use Case Diagram:**

From the Fig. 5.1 A use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases. The main purpose of a use case diagram is to show what system functions are performed for which actor. Roles of the actors in the system can depicted.

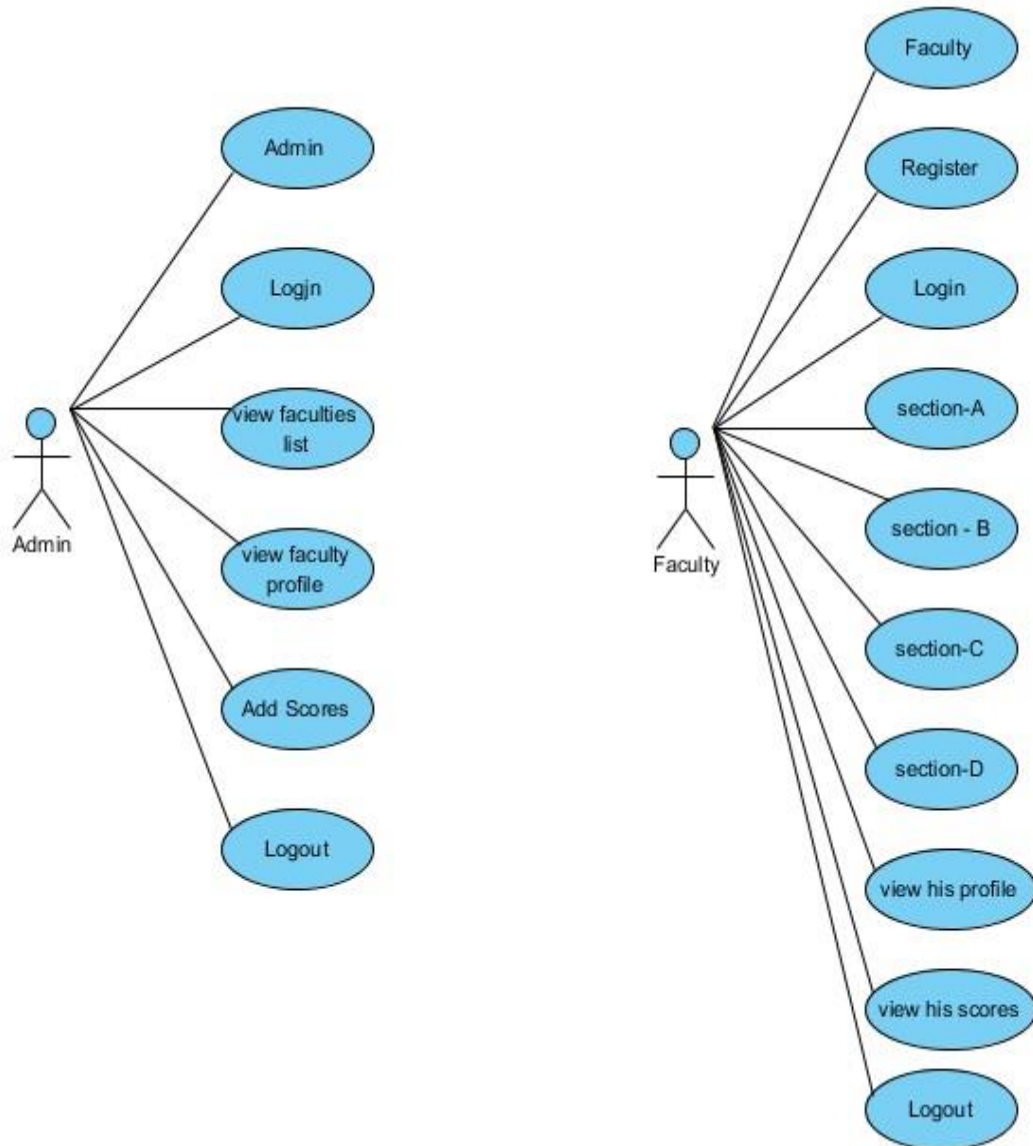


Fig. 5.1 : Use case Diagram

5.2.2 Class Diagram:

In software engineering, From the Fig 5.2 A class diagram in the Unified Modelling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among the classes. It explains which class contains information.

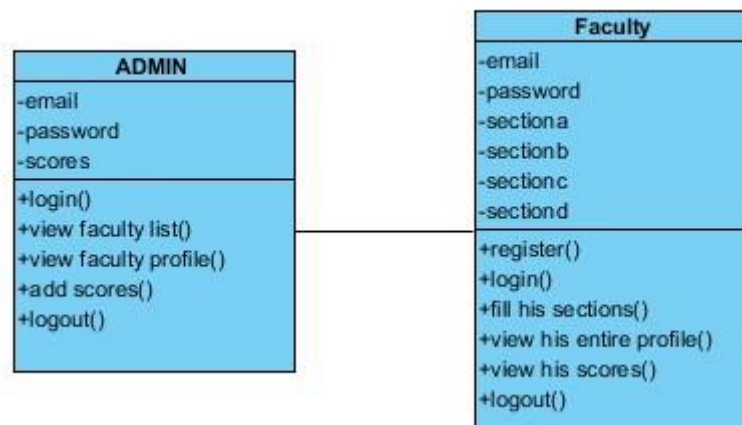


Fig. 5.2 : Class Diagram

5.2.3 Sequence Diagram:

A sequence diagram Fig 5.3 in Unified Modelling Language (UML) is a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message sequence Chart. Sequence diagrams are sometimes called event diagrams, event scenarios, and event timings

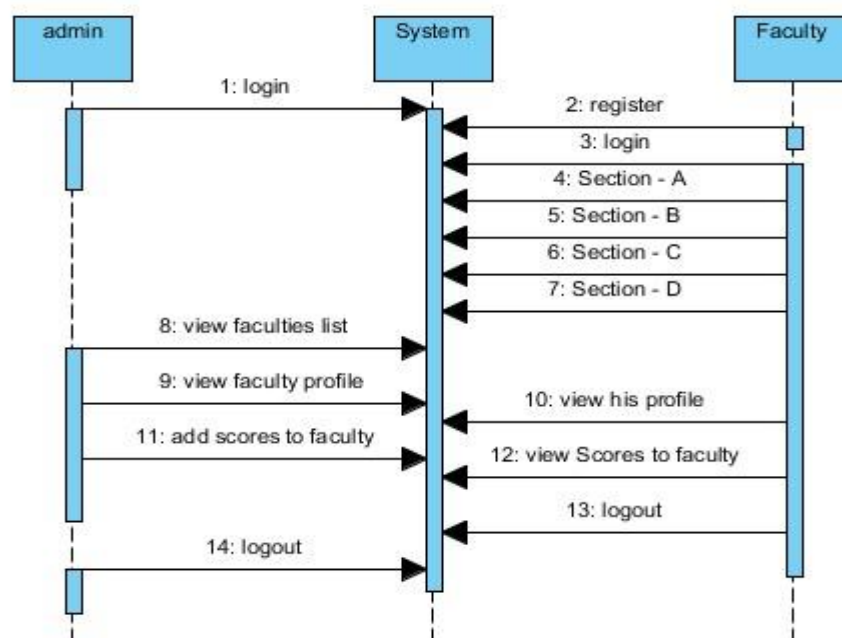


Fig. 5.3: Sequence Diagram

5.2.4 Collaboration Diagram:

In collaboration diagram Fig 5.4 the method call sequence is indicated by some numbering technique as shown below. The number indicates how the methods are called one after another. We have taken the same order management system to describe the collaboration diagram. The method calls are similar to that of a sequence diagram. But the difference is that the sequence diagram does not describe the object organization whereas the collaboration diagram shows the object organization.

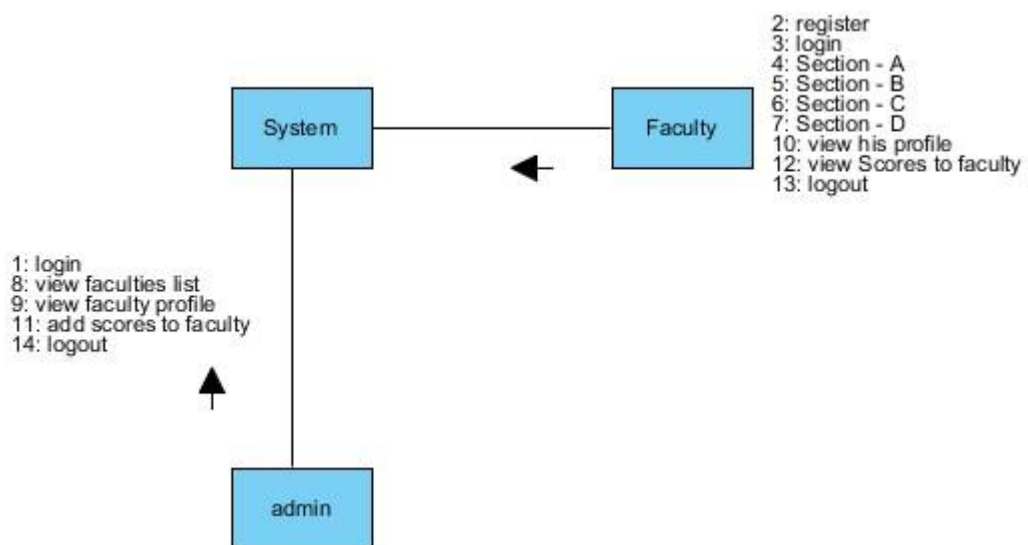


Fig. 5.4: Collaboration Diagram

5.2.5 Deployment Diagram

Deployment diagram Fig 5.5 represents the deployment view of a system. It is related to the component diagram. Because the components are deployed using the deployment diagrams. A deployment diagram consists of nodes. Nodes are nothing but physical hardware's used to deploy the application.

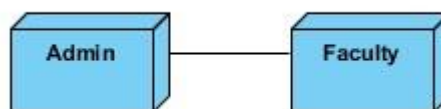


Fig. 5.5: Deployment Diagram

5.2.6 Activity Diagram:

Activity diagrams from Fig. 5.6 are graphical representations of workflows of stepwise activities and actions with support for choice, iteration and concurrency. In the Unified Modelling Language, activity diagrams can be used to describe the business and operational step-by-step workflows of components in a system. An activity diagram shows the overall flow of control.

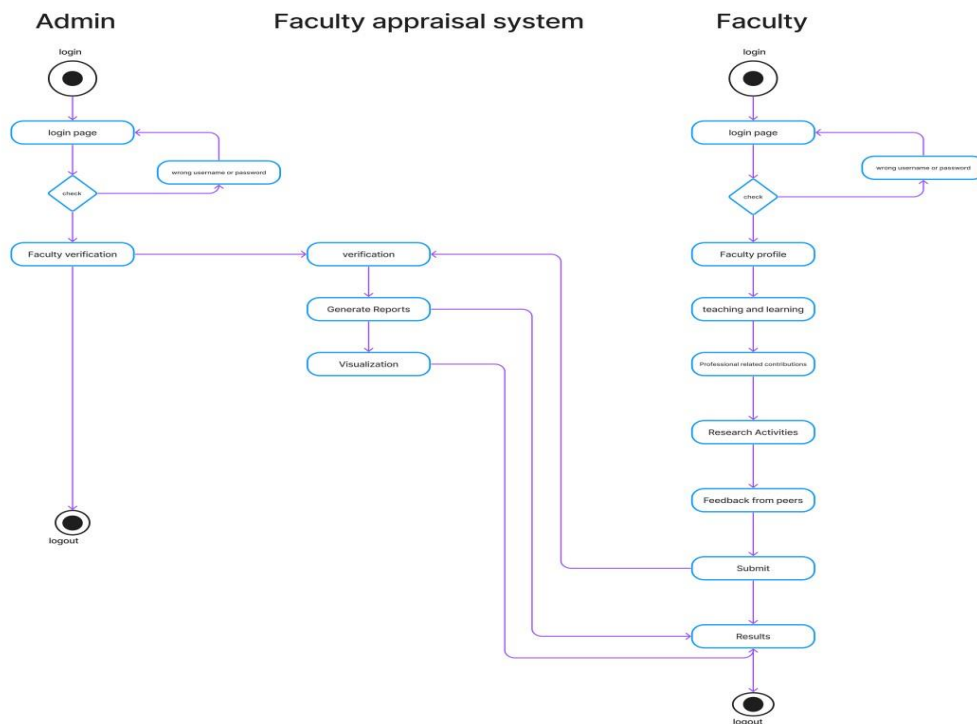


Fig. 5.6 : Activity Diagram for Admin

5.2.7 Component Diagram:

A component diagram Fig 5.7, also known as a UML component diagram, describes the organization and wiring of the physical components in a system. Component diagrams are often drawn to help model implementation details and double-check that every aspect of the system's required functions is covered by planned development.



Fig. 5.7: Component Diagram

5.2.8 ER Diagram:

An Entity–relationship model (ER model) Fig 5.8 describes the structure of a database with the help of a diagram, which is known as Entity Relationship Diagram (ER Diagram). An ER model is a design or blueprint of a database that can later be implemented as a database. The main components of E-R model are: entity set and relationship set.

An ER diagram shows the relationship among entity sets. An entity set is a group of similar entities and these entities can have attributes. In terms of DBMS, an entity is a table or attribute of a table in database, so by showing relationship among tables and their attributes, ER diagram shows the complete logical structure of a database. Let's have a look at a simple ER diagram to understand this concept.

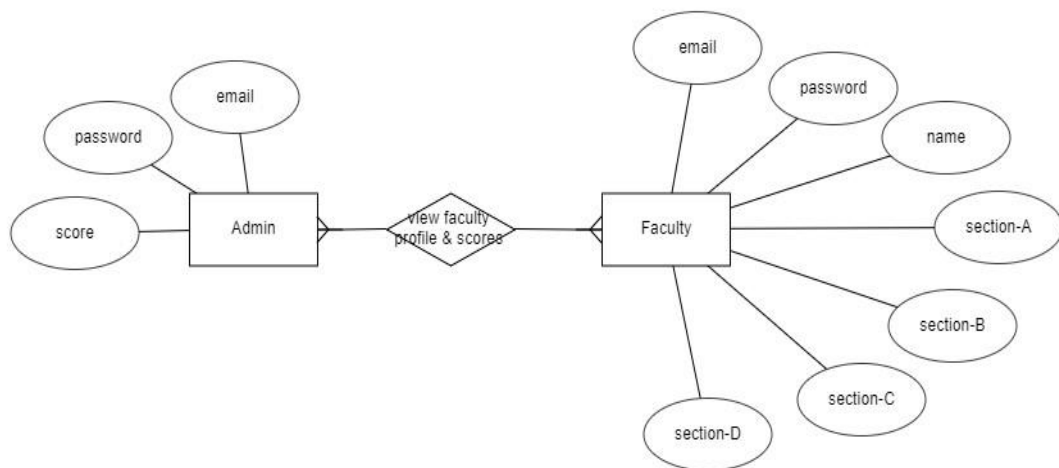


Fig. 5.8: ER Diagram

5.3 DFD Diagram:

A Data Flow Diagram (DFD) Fig 5.9 and Fig 5.10 is a traditional way to visualize the information flows within a system. A neat and clear DFD can depict a good amount of the system requirements graphically. It can be manual, automated, or a combination of both. It shows how information enters and leaves the system, what changes the information and where information is stored. The purpose of a DFD is to show the scope and boundaries of a system as a whole. It may be used as a communications tool between a systems analyst and any person who plays a part in the system that acts as the starting point for redesigning a system.

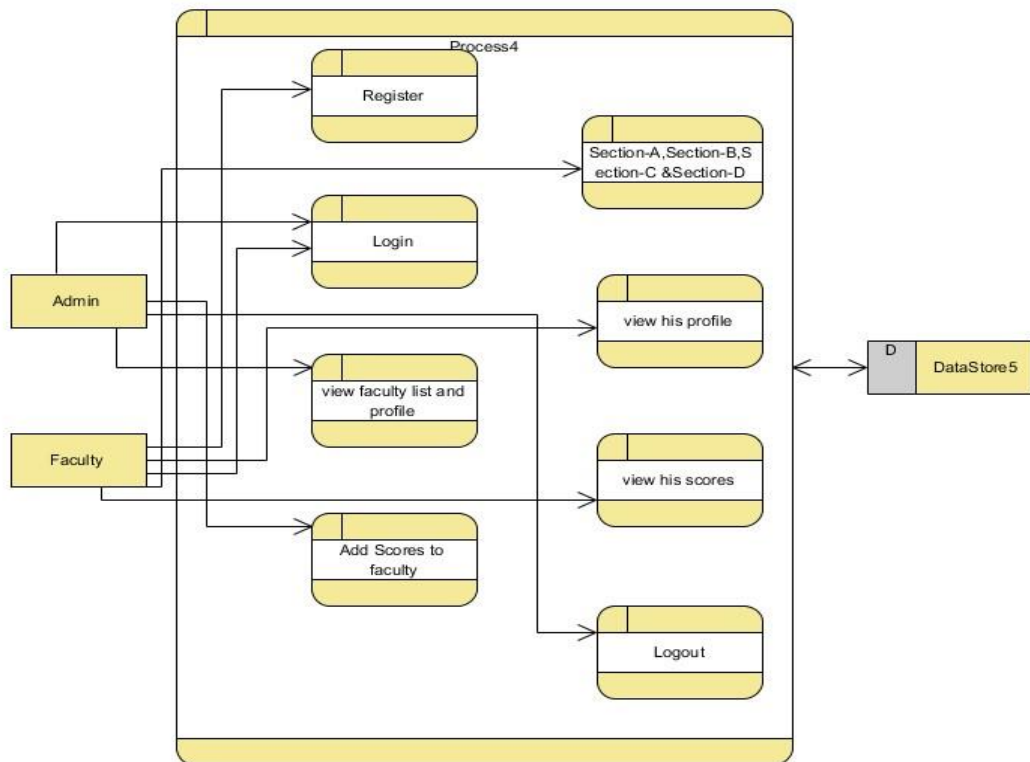
Level 1 Diagram:

Fig. 5.9 DFD Diagram level 1

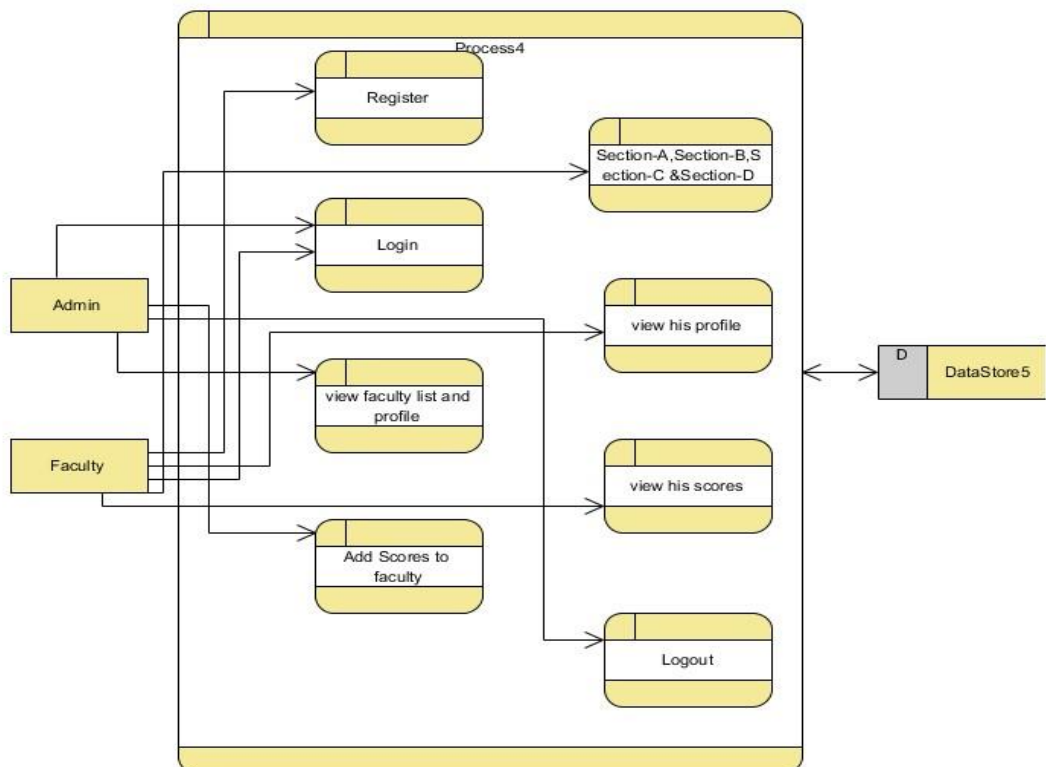
Level 2 Diagram:

Fig. 5.10 DFD Diagram level 2

CHAPTER 6

IMPLEMENTATION

6.1 Modules:

Admin:

Operation-Login: Admin will login into the application by entering the valid details like (username and password).

View List of Faculty: Admin view the list of faculties.

View Profiles of Faculty: Admin view the profiles of faculties individually.

Add Scores: provide scores for faculty individually for each section.

Logout: Admin must be logout.

Faculty:

Register: Faculty register with his details

Login: Faculty will login into the application by entering the valid details like (username and password).

Sections: Fill his all sections (section-a, section-b, section-c & section-d).

Profile: Faculty view his profile.

Scores: Faculty view his score provided by admin based on his profile.

Logout: Faculty must be logout.

6.2 OUTPUT SCREENS Admin

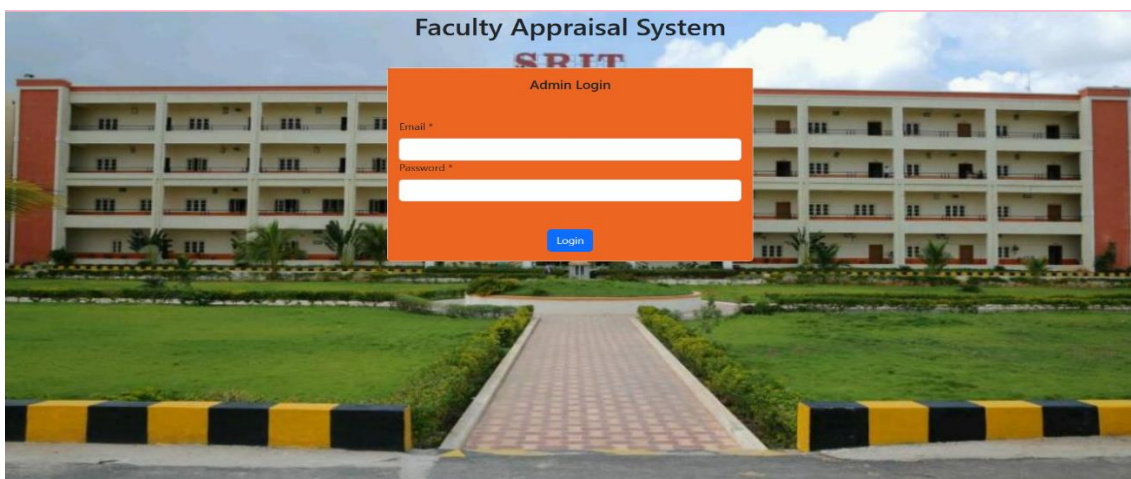
Login:

Fig. 6.1 Admin Login

Admin View List of Faculty:

Administrator Faculty Forms

Faculty Forms

Email	View Form Data
sakiyarabbani@786gmail.com	view FormData
sakiyarabbani786@gmail.com	view FormData
204g1a0591@srit.ac.in	view FormData

Fig. 6.2 Admin View List

Admin View Profile Faculty:

Administrator Faculty Forms

Give Score

GENERAL INFORMATION OF THE FACULTY:

Name : Ranjith Reddy
 highestQualification : Phd
 phd : completed
 salary : 1200000
 email : ranjitcse@gmail.com
 orcid : 145632
 feedback from peers : very obedient and punctual

designation : professor
 DOB :
 specialization : Data Science
 married : Yes
 pan : PA123SR
 raked award sprices : 5

department : CSE
 dateofjoining : 2006-06-25T00:00:00.000Z
 caste : OC
 mobile : 9346597953
 googleScholarlink : https://scholar.google.com/citations?user=J3TfAJ8AAAAJ&hl=en
 experience : 10

Qualification

degree	University	College	Year	state
Mtech	JNTUA	JNTUA	2015	Andhra Pradesh
Btech	JNTUA	JNTUA	2013	Andhra Pradesh

Experience Details

company	designation	from	to
Srinivasa Ramanujan Institute of technology	Assistant professor	2018-07-26	2024-03-13

teaching process

Class_Semester	CourseCodeName	no_of_scheduled_classes	no_of_actual_classes	semester	CourseCodeName	feedbackscore1	feedbackscore2
1	R204T8	20	18	1	R204T8	8	9
2	R19547	25	18	2	R19547	7	8

student feedbacks

Fig. 6.3 Admin View of Faculty Profile

Admin Give Score to Faculty:

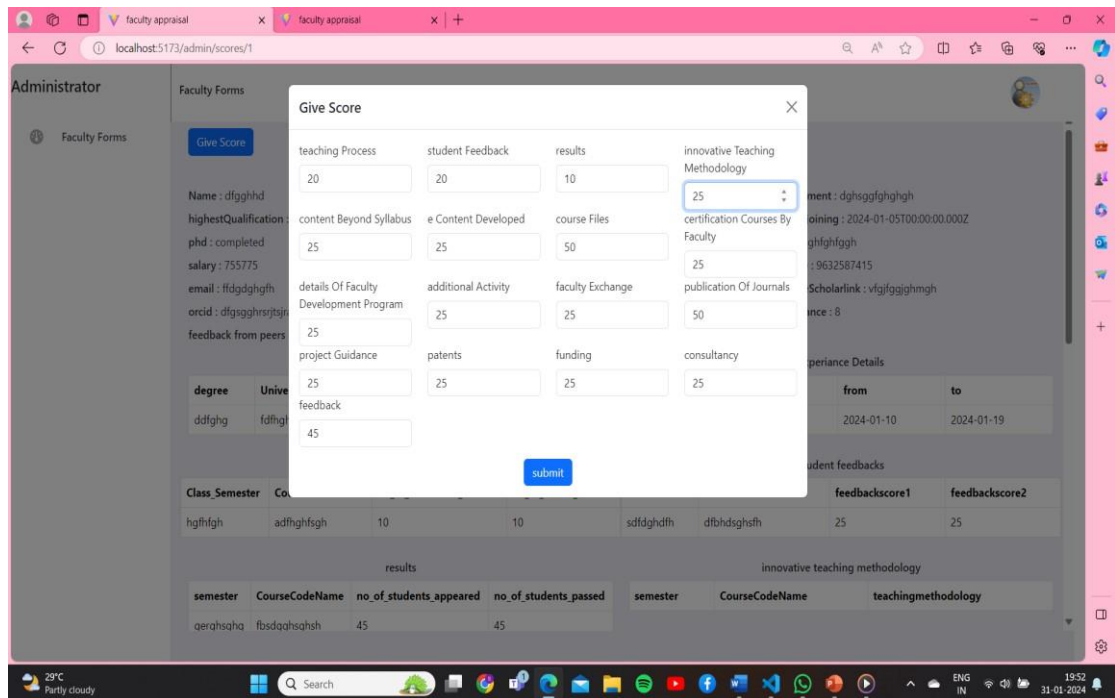


Fig 6.4 Admin modifying score

Faculty Login:

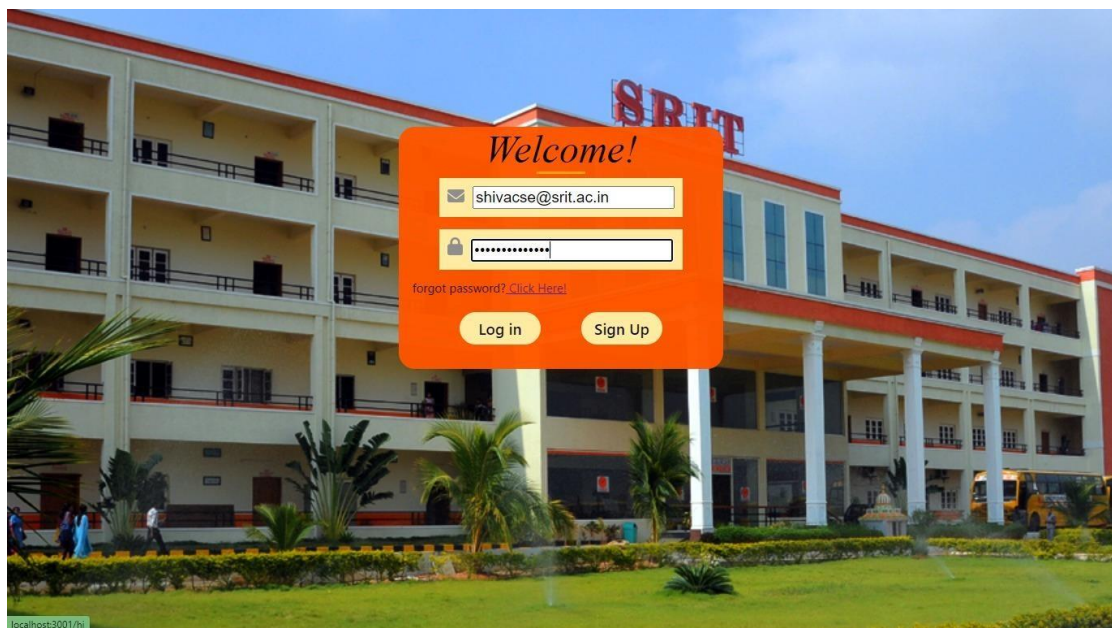


Fig. 6.5 Faculty Login

Faculty Section-A:

Faculty Appraisal Form

Home Profile

GENERAL INFORMATION OF THE FACULTY

Section A

Name Designation Department highestQualification

DOB Date of Joining Phd specialization

Section B

caste salary married mobile

Section C

email aadhar Number pan googleScholarlink

orcid rakedawardsprices experience

Section D

Qualification

degree University College Year

state

Experience

company designation dd-mm-yyyy dd-mm-yyyy

Activate Windows
Go to Settings to activate Windows.

Fig. 6.6 Faculty form (section A)

Faculty Section-B :

Faculty Appraisal Form

Home Profile

TEACHING & LEARNING PROCESSES

Section A

Teaching Process (25)

Class/Semester CourseCodeName no_of_scheduled_c no_of_actual_class

Section B

Student Feedback (25)

semester CourseCodeName feedbackscore1 feedbackscore2

Section C

Results (25)

semester CourseCodeName no_of_students_ap no_of_students_pa

Section D

Innovative Teaching methodology (25)

semester CourseCodeName teachingmethodolog

Activate Windows
Go to Settings to activate Windows.

Fig. 6.7 Faculty form (section B)

Faculty Section-C:

Faculty Appraisal Form

Home Profile

PROFESSIONAL RELATED CONTRIBUTIONS

Certification Courses done by the Faculty(25)

Section A

Course Name offeredby +

Section B

Details of Faculty Development Program (25)

Course Name offeredby offeredby +

Section C

Administrative or additional Activity (25)

Activity Name +

Section D

Faculty Exchange or Collaborative Activity (25)

Name dd-mm-yyyy +

Activate Windows
Go to Settings to activate Windows.

Fig. 6.8 Faculty form (section C)

Faculty Section-D:

Faculty Appraisal Form

Home Profile

RESEARCH ACTIVITIES

Publication of Journals (50)

Section A

Authors name publisher dd-mm-yyyy

Section B

+ Project Guidance (25)

Section C

Item Score +

Section D

Patents (25)

title applicantName mobile dd-mm-yyyy

+ Funding (25)

nameofproposal nameofagency amount

+ Consultancy (25)

consultancyactivity agency amount +

Activate Windows
Go to Settings to activate Windows.

Fig. 6.9 Faculty form (section D)

Faculty View His Profile:

Faculty Appraisal Form

Home Profile

[View Score](#)

GENERAL INFORMATION OF THE FACULTY:

Name : Ramesh
 highestQualification : M.tech
 phd : registered
 salary : 9
 email : cse_001@srit.ac.in
 orcid : 4592
 feedback from peers : 44

designation : Professor
 DOB :
 specialization : data science
 married : no
 pan : at356v1vy7
 ranked award prizes : 2

department : CSE
 dateofjoining : 2024-01-25T00:00:00.000Z
 caste : oc
 mobile : 8878653421
 googleScholarlink : www.sjd.com
 experience : 2

Qualification

degree	University	College	Year	state
M.tech	JNTUA	KLU	2020	Andhra Pradesh

Experience Details

company	designation	from	to
Eduskills	associate professor	2023-01-01	2024-01-11

teaching process

Class Semester	CourseCodeName	no_of_scheduled_classes	no_of_actual_classes
1-1	r204518	20	16

student feedbacks

semester	CourseCodeName	feedbackscore1	feedbackscore2
1-1	r204518	22	25

results

semester	CourseCodeName	no_of_students_appeared	no_of_students_passed
1-1	r204518	60	55

innovative teaching methodology

semester	CourseCodeName	teachingmethodology
----------	----------------	---------------------

content beyond syllabus
e content developed


Fig. 6.10 Faculty Profile

Faculty View His Score:



Fig. 6.11 Faculty Scores

Faculty Appraisal Form

Home Profile 

Course Files	46
Certification Courses	21
Details of Faculty Development Program	21
Additional Activity	20
Faculty Exchange	21
Publication of Journals	41
Project Guidance	18
Patents	18
Funding	20
Consultancy	20
Feedback	42

Teaching & Learning Process (200)

161

Professional Related Contributions (100)

83

Research Activities (150)

117

Feedback from Peers (50)

42

RESULT: 80.60% - Eligible for appraisal

Download

Fig. 6.12 Faculty scores and result

CHAPTER 7

MERN ENVIRONMENT

SOFTWARE INSTALLATION FOR THIS PROJECT

How to Install MySQL Workbench?

Moving on, you will look at how to install MySQL Workbench on Windows. The installation process is similar to other operating systems.

1. Open the MySQL website on a browser. Click on the following link: [MySQL Downloads](#).
2. Select the Downloads option.



The screenshot shows the MySQL website. The MySQL logo is on the left. The tagline "The world's most popular open source database" is in the center. The navigation menu includes "MYSQL.COM", "DOWNLOADS" (which is highlighted with an orange bar), "DOCUMENTATION", and "DEVELOPER ZONE". On the right, there are links for "Contact MySQL", "Login", and "Register", along with social media icons for Facebook, Twitter, LinkedIn, and YouTube.

MySQL Database Service
with HeatWave for Real-time Analytics

Faster Performance

- 400x MySQL query acceleration
- 1100x Faster than Amazon Aurora
- 2.7x Faster than Amazon Redshift

Lower Total Cost of Ownership

- 1/3 the Cost of Amazon RDS
- 1/3 the Cost of Amazon Redshift
- Easy migration from Amazon RDS

[Try Now](#)

MySQL Community Downloads

- MySQL Yum Repository
- MySQL APT Repository
- MySQL SUSE Repository
- MySQL Community Server
- MySQL Cluster
- MySQL Router
- MySQL Shell
- MySQL Workbench
- MySQL Installer for Windows
- MySQL for Visual Studio
- C API (libmysqlclient)
- Connector/C++
- Connector/J
- Connector/NET
- Connector/Node.js
- Connector/ODBC
- Connector/Python
- MySQL Native Driver for PHP
- MySQL Benchmark Tool
- Time zone description tables
- Download Archives



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3. Choose the desired installer and click on download.

General Availability (GA) Releases
Archives

MySQL Installer 8.0.23

Select Operating System:

Microsoft Windows

Looking for previous GA versions?

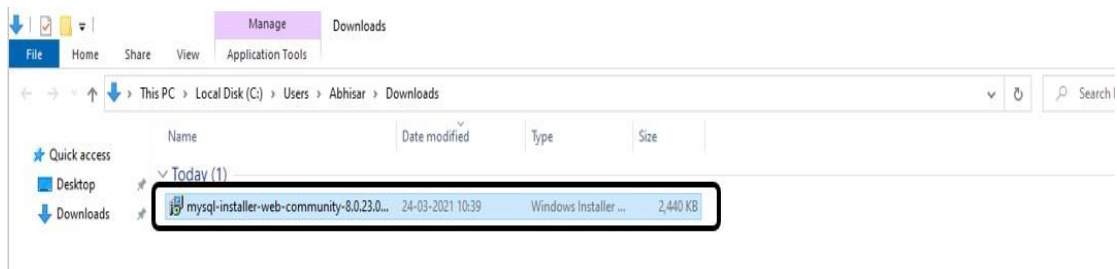
Windows (x86, 32-bit), MSI Installer (mysql-installer-web-community-8.0.23.0.msi)	8.0.23	2.4M	Download
Windows (x86, 32-bit), MSI Installer (mysql-installer-community-8.0.23.0.msi)	8.0.23	422.4M	Download

MD5: a3af6d91f93e046452b38a1e2589534c | [Signature](#)

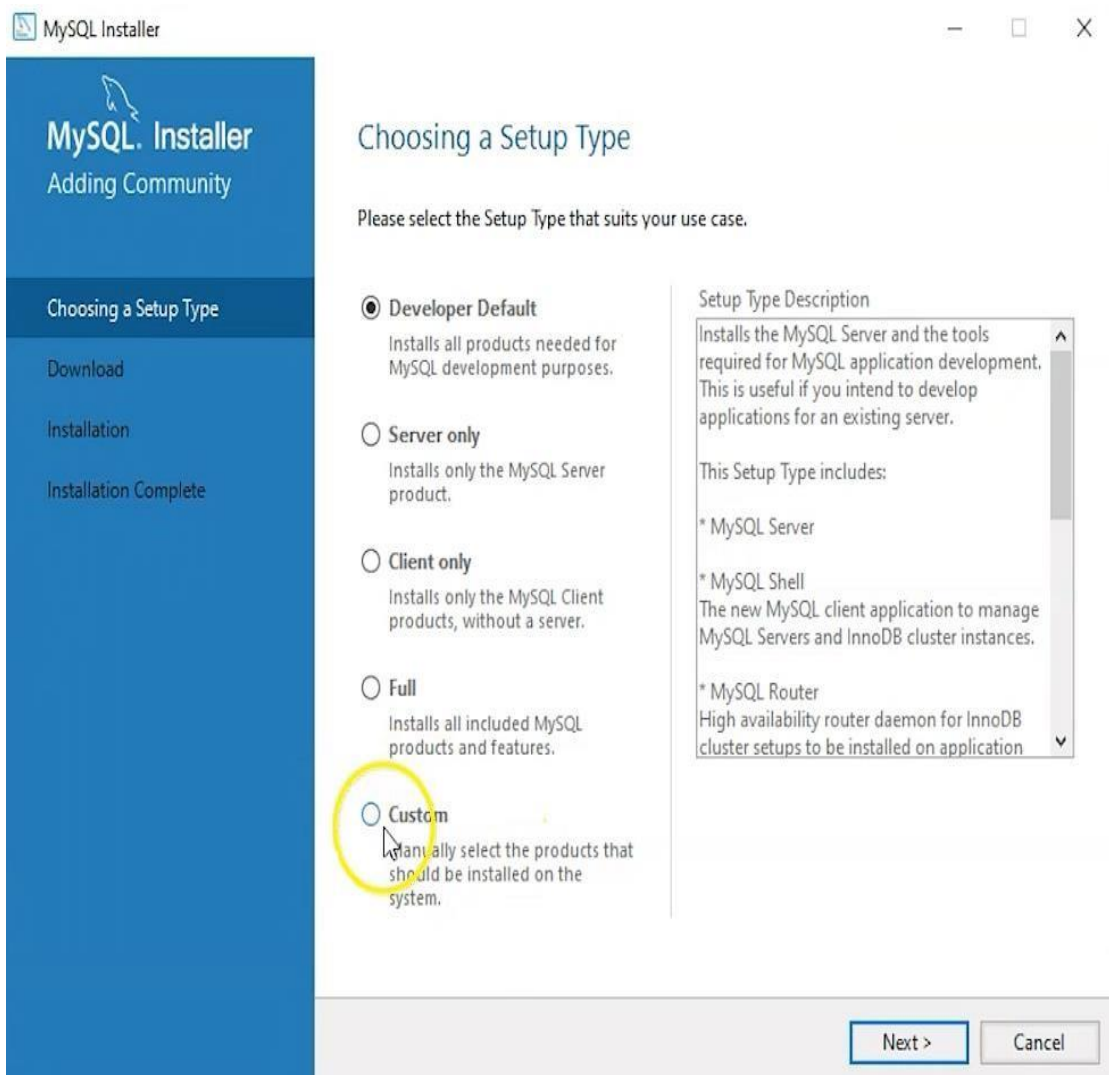
MD5: 8de85ced955631901829a1a363cdbf50 | [Signature](#)

We suggest that you use the [MD5 checksums](#) and [GnuPG signatures](#) to verify the integrity of the packages you download.

4. After the download, open the installer.

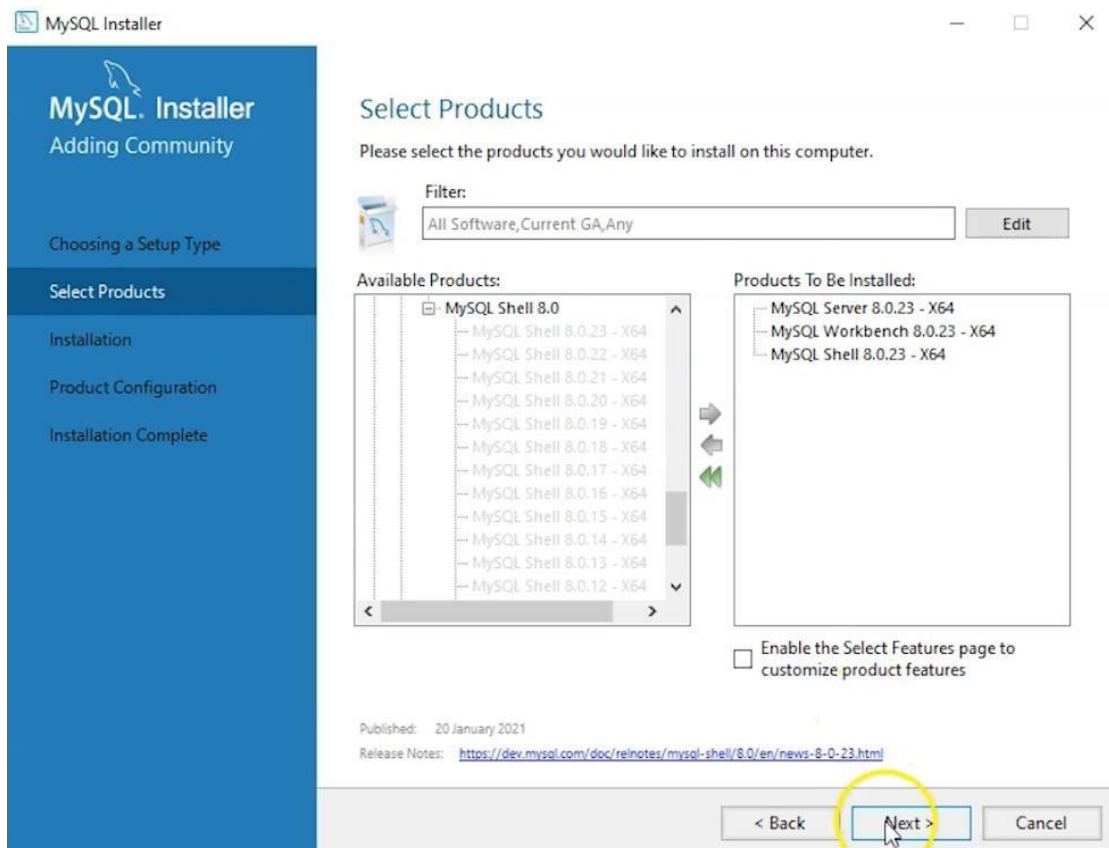


5. It will ask for permission; when it does, click Yes. The installer will then open. Now, it will ask to choose the setup type. Here, select Custom.

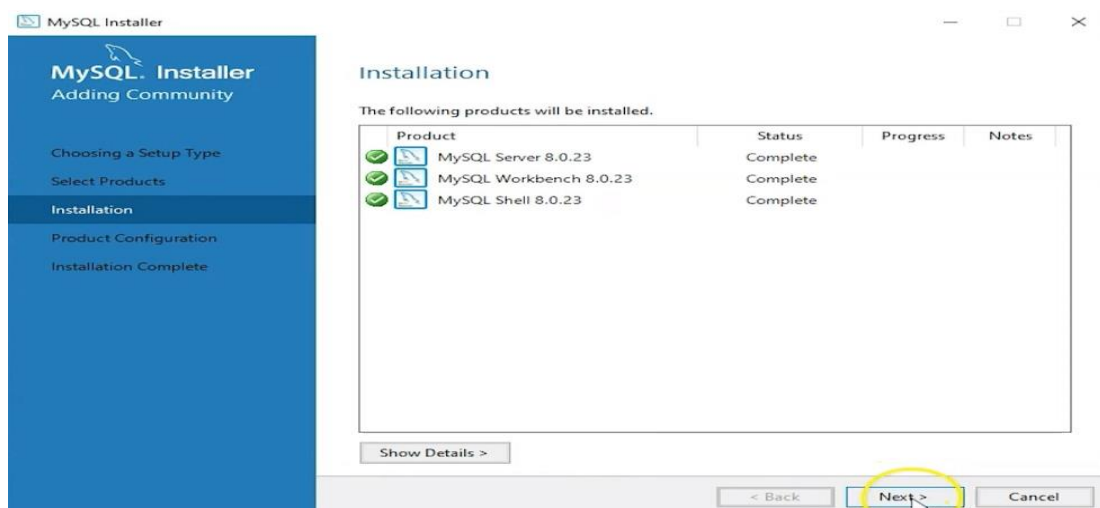


6. Click on Next. With this, you will install MySQL server, MySQL Workbench, and MySQL shell.

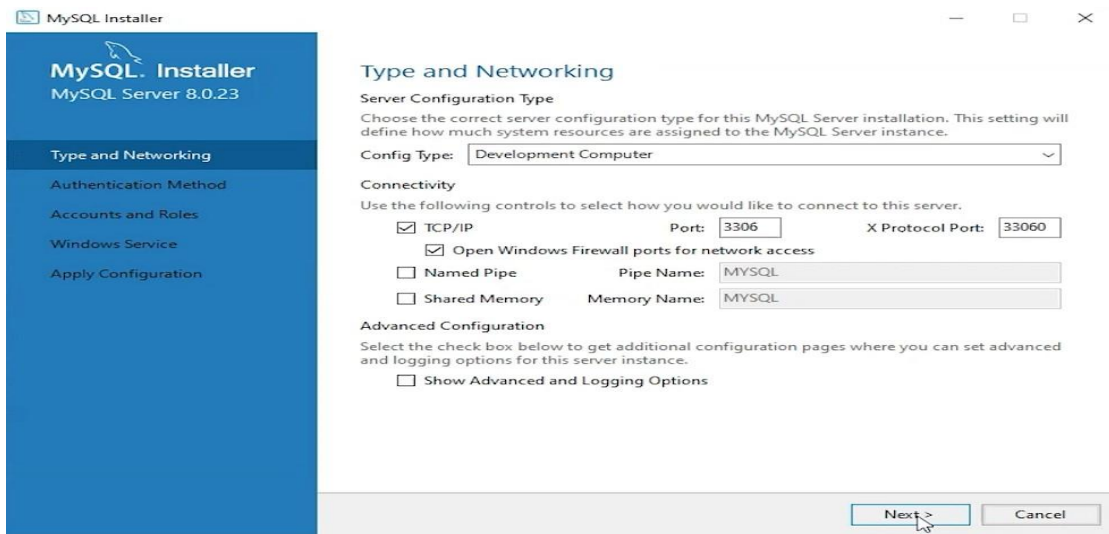
7. Open MySQL Servers, select the server you want to install, and move it to the Products/Features to be installed window section. Now, expand Applications, choose MySQL Workbench and MySQL shell. Move both of them to 'Products/Features to be installed'.



Click on the Next button. Now, click on the Execute button to download and install the MySQL server, MySQL Workbench, and the MySQL shell.

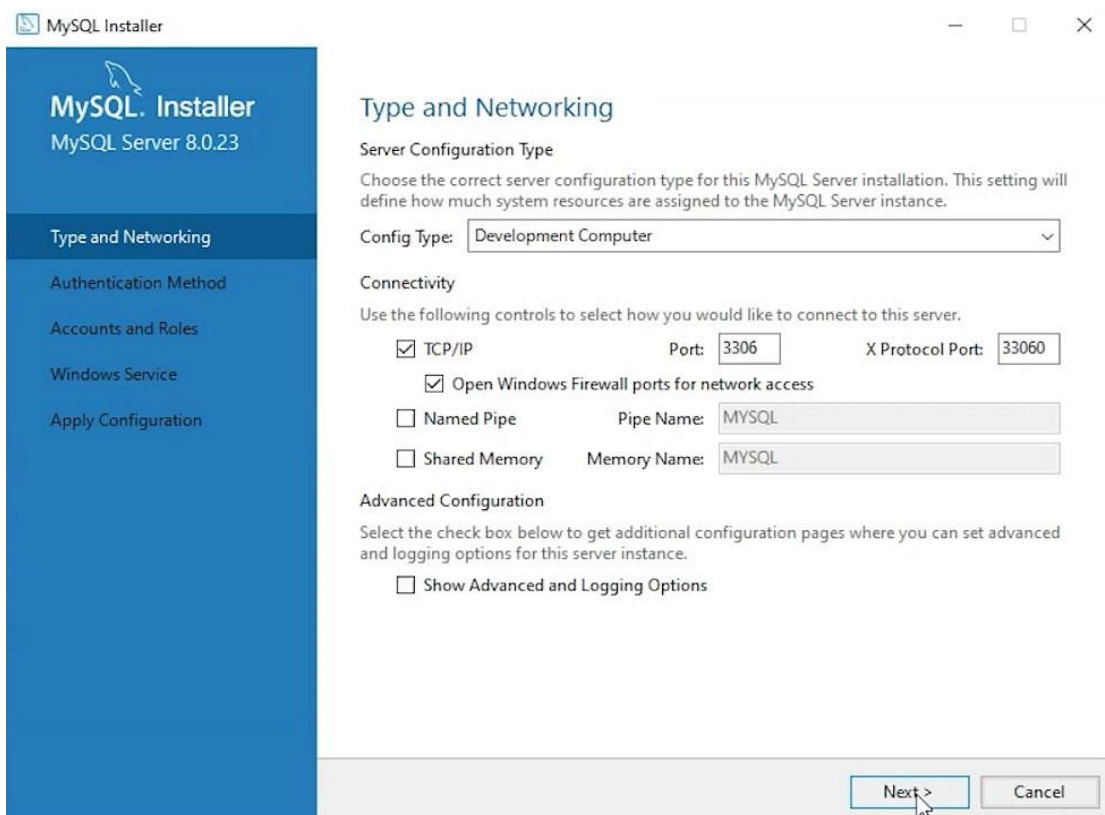


Once the product is ready to configure, click on Next. Under Type and Networking, go with the default settings and select Next.

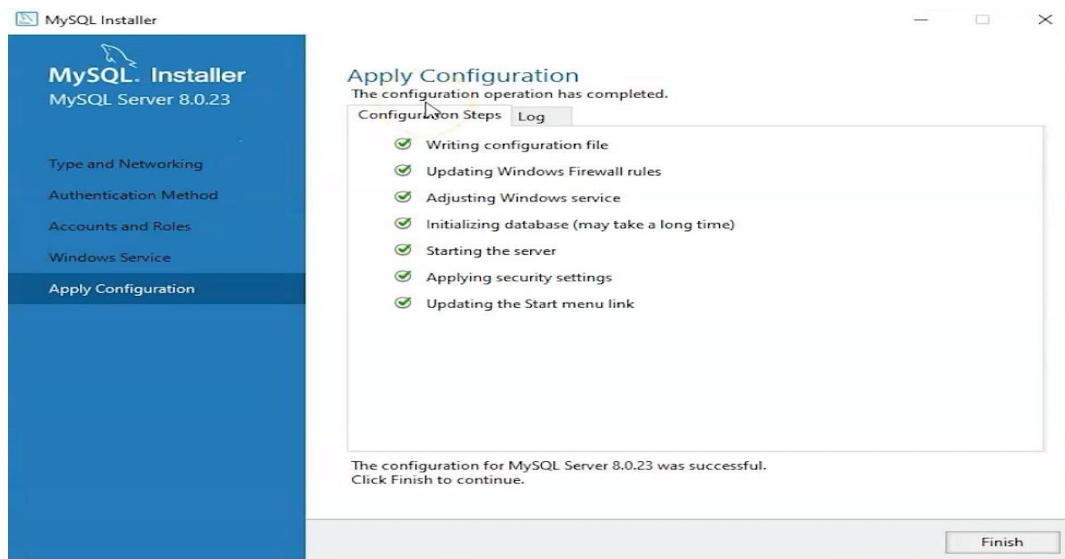


8. For authentication, use the recommended strong password encryption.

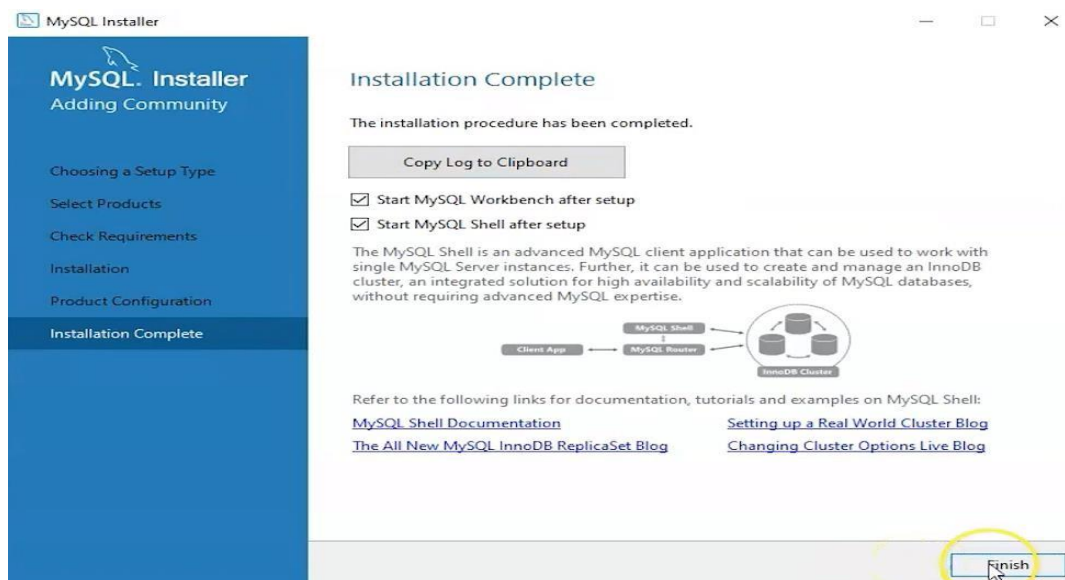
9. Set your MySQL Root password and click on next.



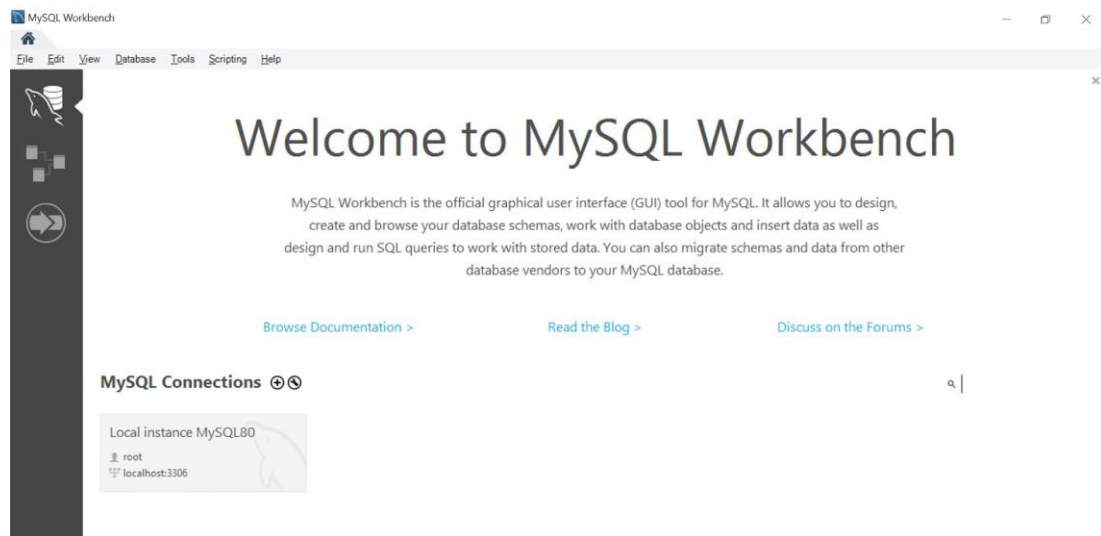
10. Go for the default windows service settings and under apply configuration, click on execute. Once the configuration is complete, click on finish.



11. Complete the installation. This will now launch the MySQL Workbench and the MySQL Shell.



Once MySQL Workbench is installed, select the Local instance and enter the password.



Now, you can use the MySQL query tab to write your SQL queries.

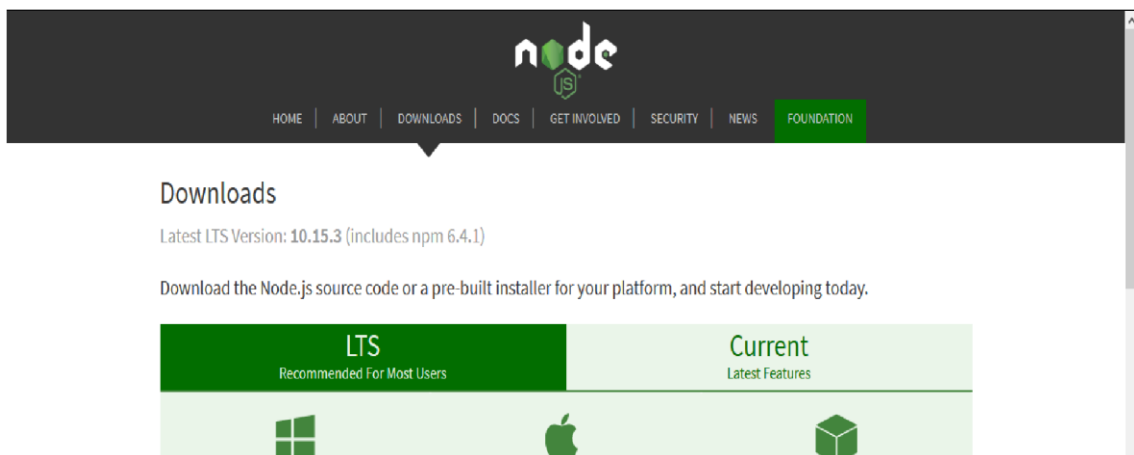
NODE INSTALLATION:

Setting up the Node Development Environment

The Node can be installed in multiple ways on a computer. The approach used by you depends on the existing development environment in the system. There are different package installers for different environments. You can install Node by grabbing a copy of the source code and compiling the application. Another way of installing Node is by cloning the GIT repository in all the three environments and then installing it on the system.

Installing Node On Windows (WINDOWS 10):

You have to follow the following steps to install the Node.js on your Windows



Step-1: Downloading the Node.js '.msi' installer.

The first step to install Node.js on windows is to download the installer. Visit the official Node.js website i.e) <https://nodejs.org/en/download/> and download the .msi

file according to your system environment (32-bit & 64-bit). An MSI installer will be downloaded on your system.

Step-2: Running the Node.js installer.

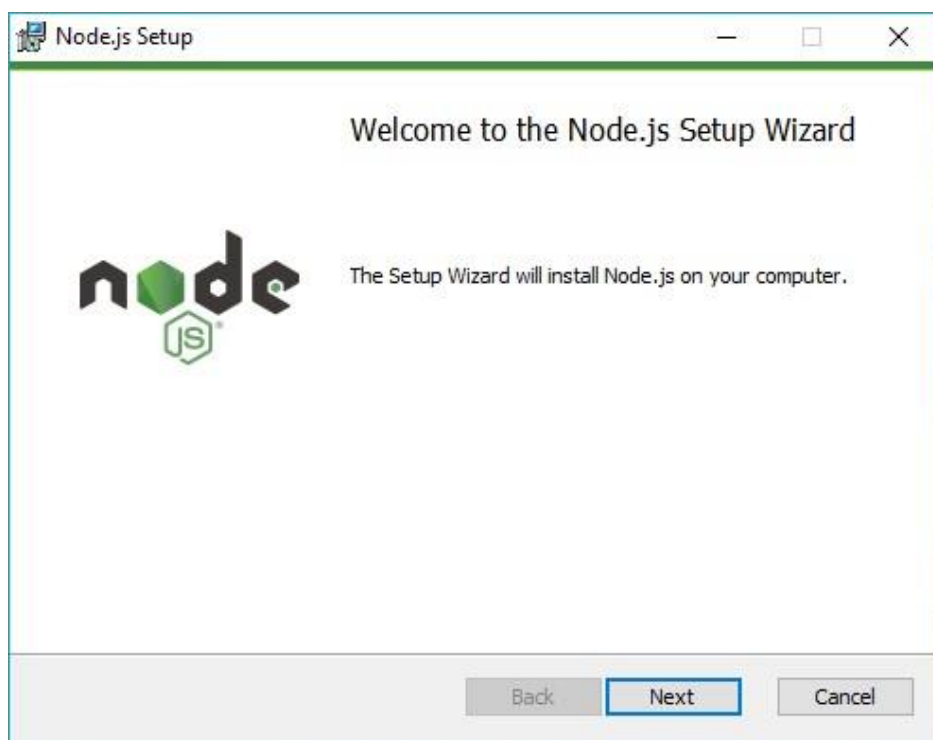
Now you need to install the node.js installer on your PC. You need to follow the following steps for the Node.js to be installed:-

- Double click on the .msi installer.

The Node.js Setup wizard will open.

- Welcome To Node.js Setup Wizard.

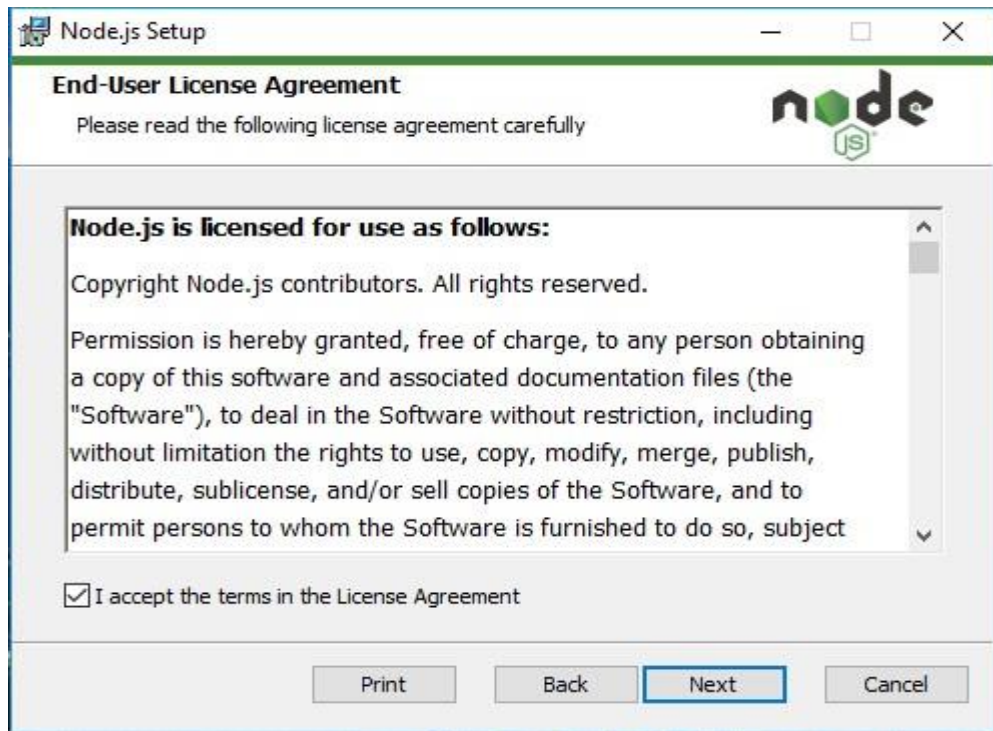
Select “Next”



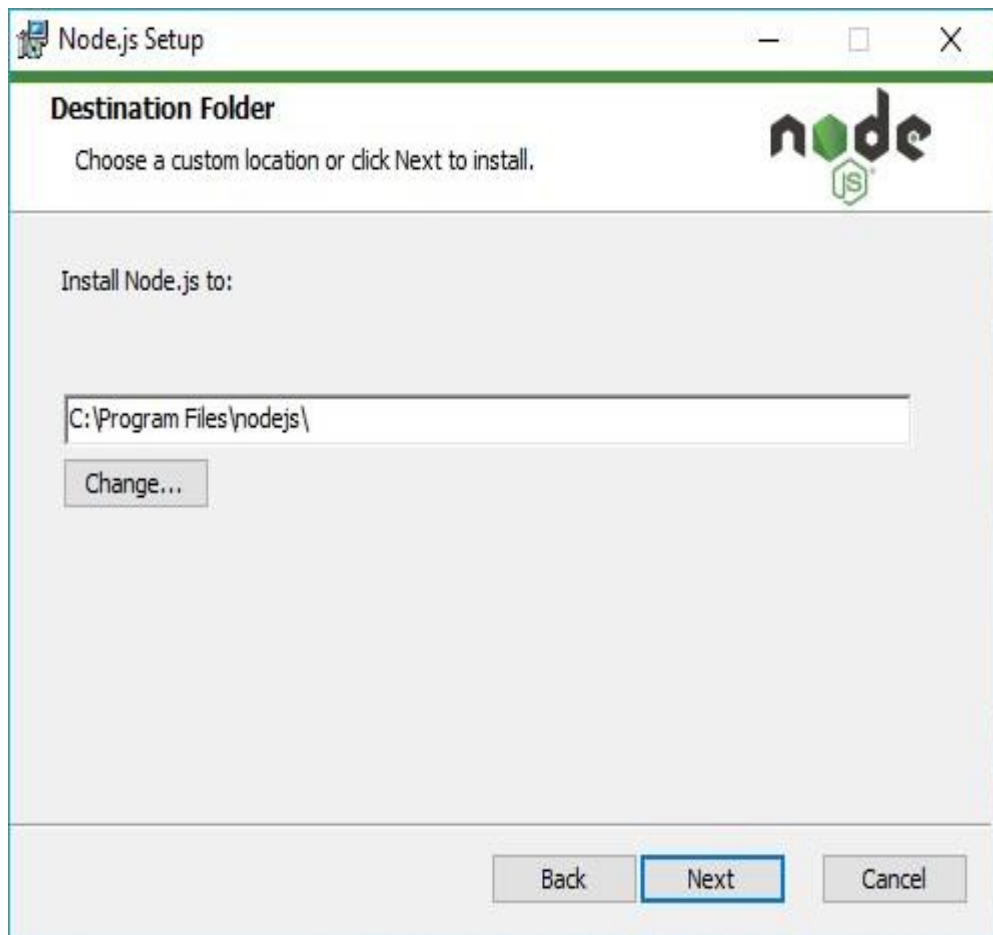
- After clicking “Next”, End-User License Agreement (EULA) will open.

Check “I accept the terms in the License Agreement”

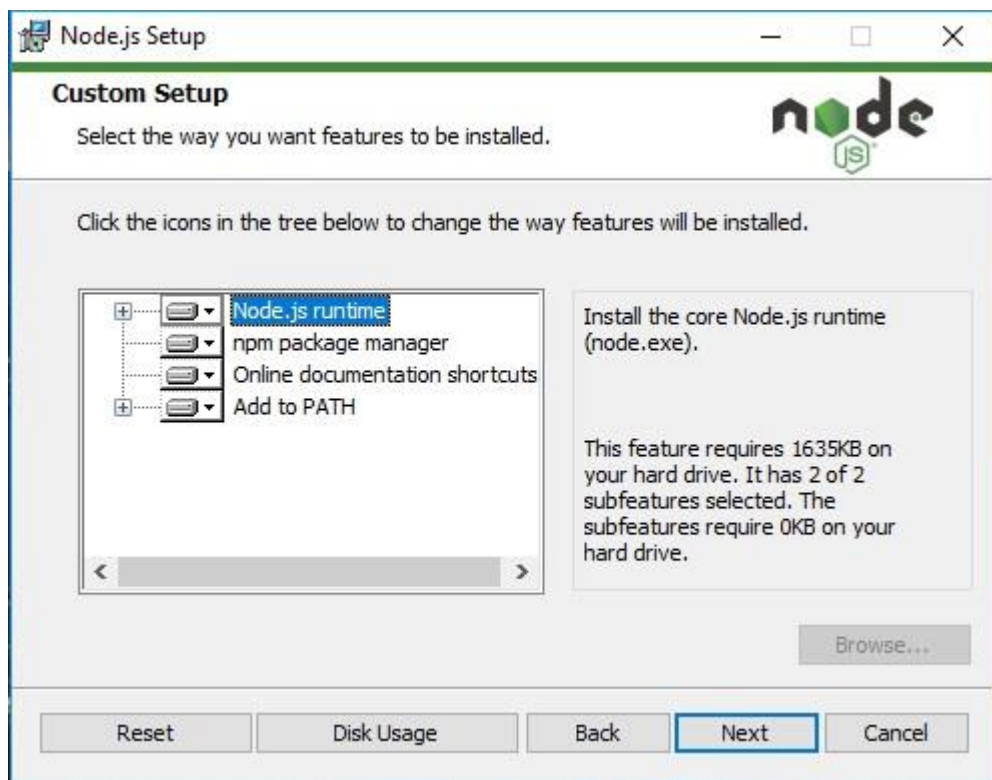
Select “Next”



Set the Destination Folder where you want to install Node.js & Select “Next”

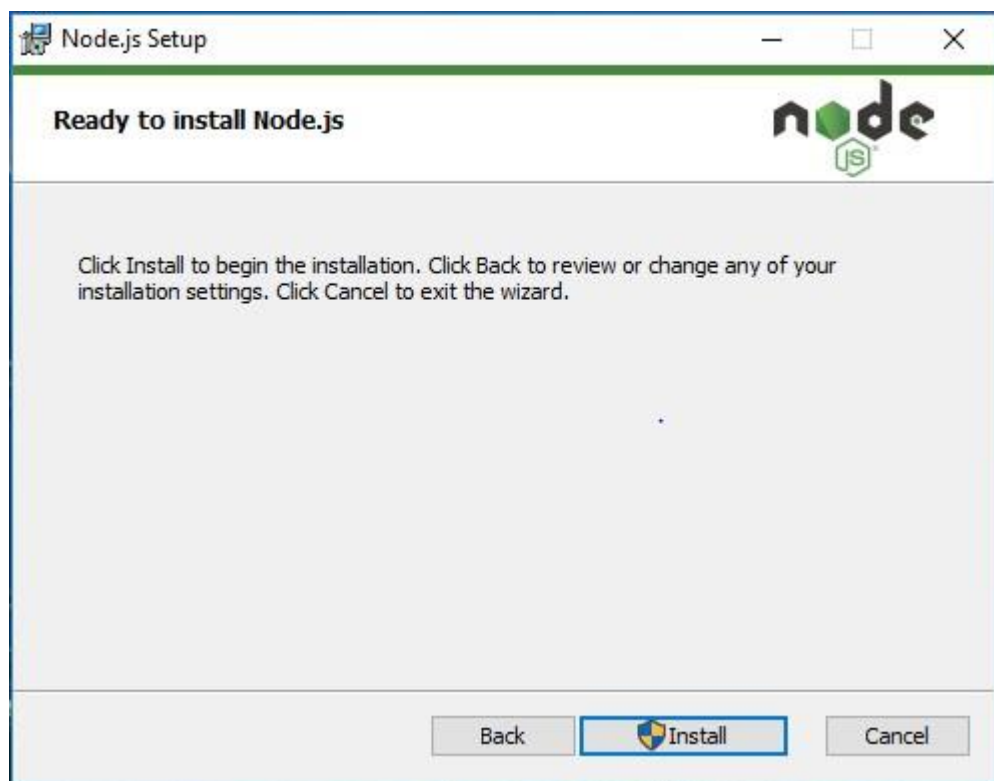


Select “Next”



The installer may prompt you to “install tools for native modules”.

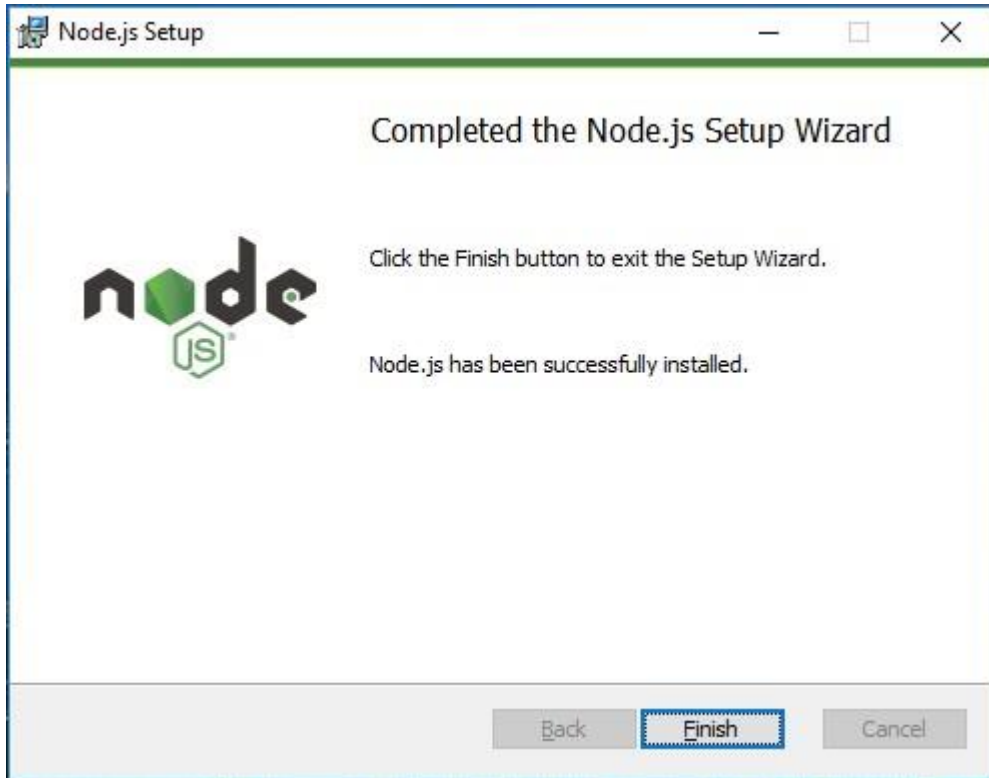
Select “Install”



Do not close or cancel the installer until the install is complete

- Complete the Node.js Setup Wizard.

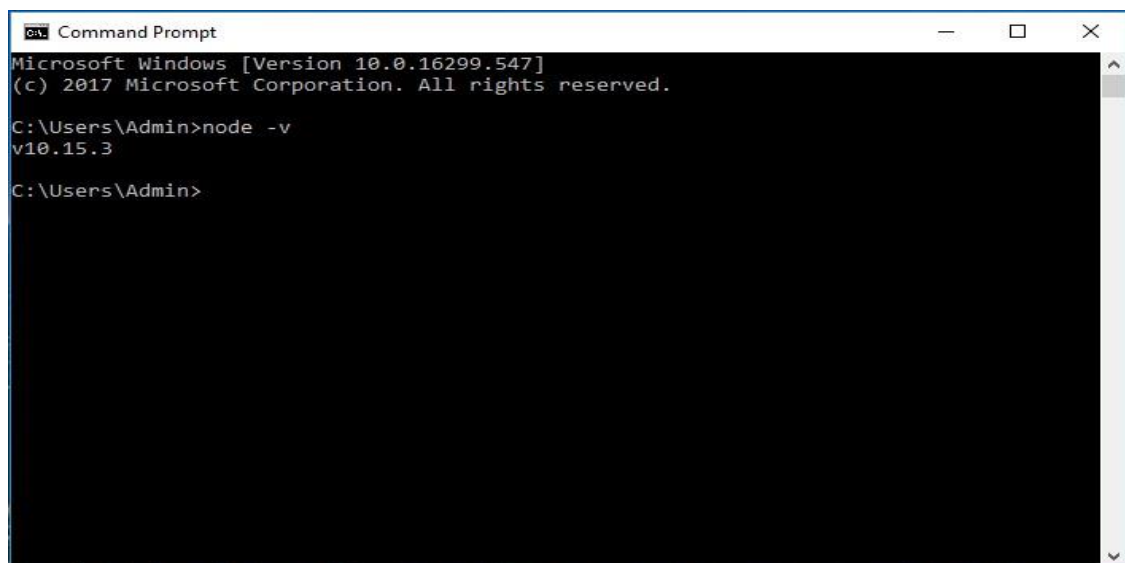
Click “Finish”



Step 3: Verify that Node.js was properly installed or not.

To check that node.js was completely installed on your system or not, you can run the following command in your command prompt or Windows Powershell and test it:-

C:\Users\Admin> node -v



If node.js was completely installed on your system, the command prompt will print the version of the node.js installed.

Express Installation:

Assuming you've already installed [Node.js](#), create a directory to hold your application, and make that your working directory.

```
$ mkdir myapp  
$ cd myapp
```

Use the `npm init` command to create a `package.json` file for your application. For more information on how `package.json` works, see [Specifics of npm's package.json handling](#).

```
$ npm init
```

This command prompts you for a number of things, such as the name and version of your application. For now, you can simply hit RETURN to accept the defaults for most of them, with the following exception:

```
entry point: (index.js)
```

Enter `app.js`, or whatever you want the name of the main file to be. If you want it to be `index.js`, hit RETURN to accept the suggested default file name.

Now install Express in the `myapp` directory and save it in the dependencies list. For example:

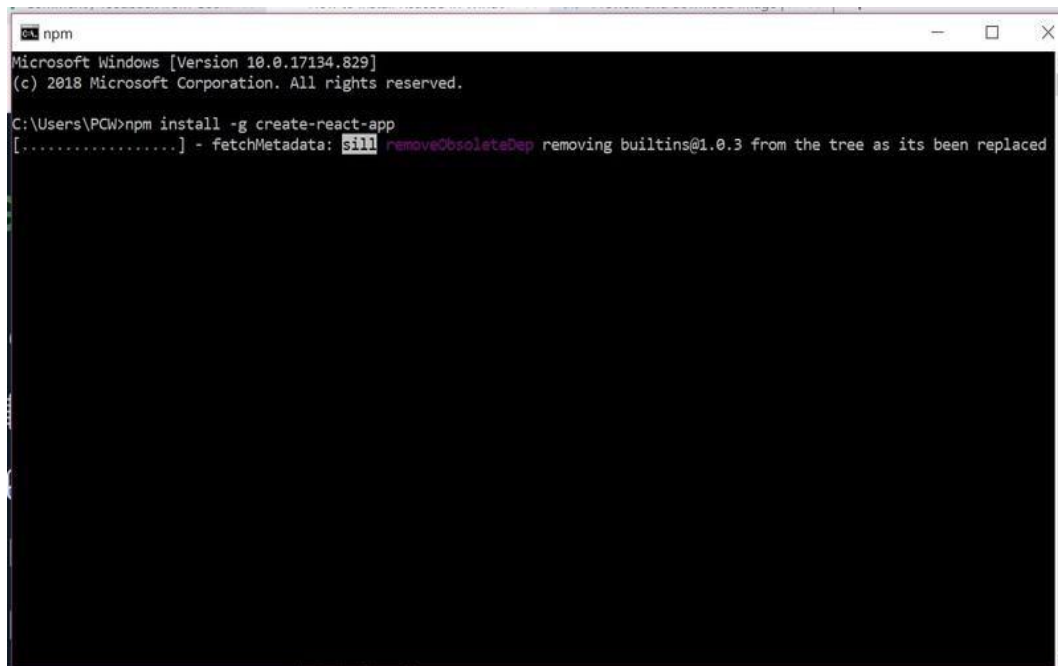
```
$ npm install express
```

To install Express temporarily and not add it to the dependencies list:

```
$ npm install express --no-save
```

By default with version npm 5.0+ `npm install` adds the module to the `dependencies` list in the `package.json` file; with earlier versions of npm, you must specify the `--save` option explicitly. Then, afterwards, running `npm install` in the `app` directory will automatically install modules in the dependencies list

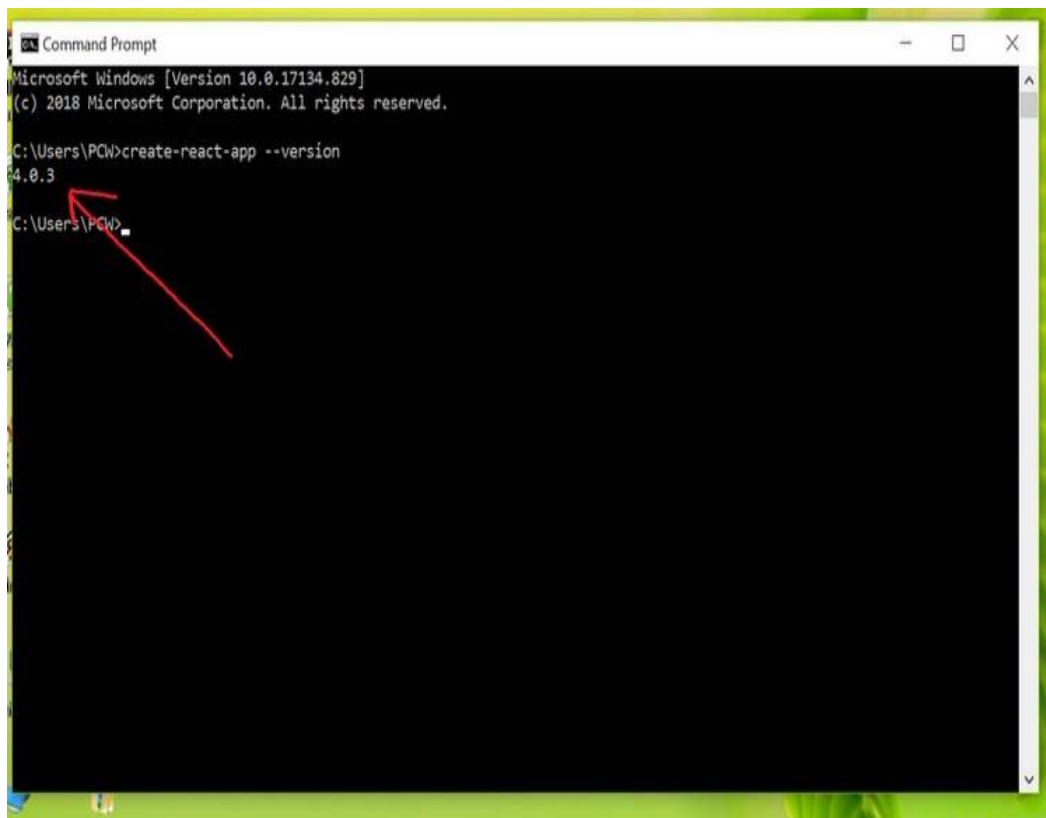
React Installation: `npm install -g create-react-app`



```
npm
Microsoft Windows [Version 10.0.17134.829]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\PCW>npm install -g create-react-app
[.....] - fetchMetadata: sill removeObsoleteDep removing builtins@1.0.3 from the tree as its been replaced
```

It will globally install react app for you. To check everything went well run the command `create-react-app --version`



```
Command Prompt
Microsoft Windows [Version 10.0.17134.829]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\PCW>create-react-app --version
4.0.3
C:\Users\PCW>
```

If everything went well it will give you the installed version of react app



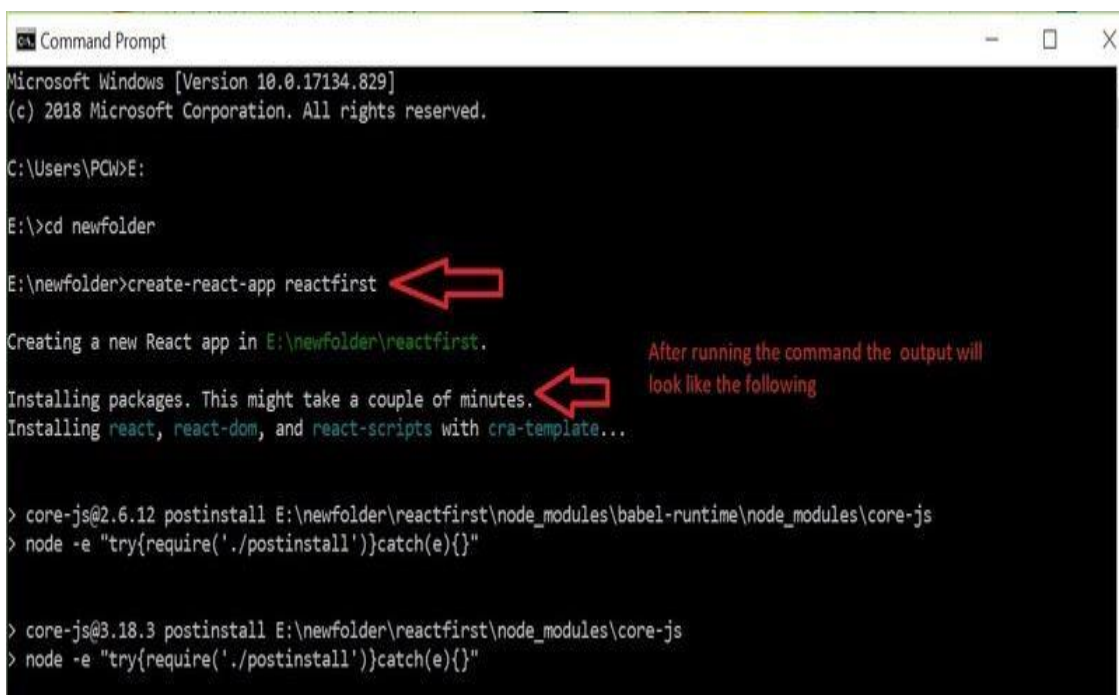
```
Microsoft Windows [Version 10.0.17134.829]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\PCN>mkdir newfolder
```

Step 4: Now Create a new folder where you want to make your react app using the below command: `mkdir newfolder`

Note: The *newfolder* in the above command is the name of the folder and can be anything.

Move inside the same folder using the below command : `cd newfolder` (your folder name)



```
Microsoft Windows [Version 10.0.17134.829]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\PCN>E:

E:\>cd newfolder

E:\newfolder>create-react-app reactfirst

Creating a new React app in E:\newfolder\reactfirst.

Installing packages. This might take a couple of minutes.
Installing react, react-dom, and react-scripts with cra-template...

> core-js@2.6.12 postinstall E:\newfolder\reactfirst\node_modules\babel-runtime\node_modules\core-js
> node -e "try{require('./postinstall')}catch(e){}"

> core-js@3.18.3 postinstall E:\newfolder\reactfirst\node_modules\core-js
> node -e "try{require('./postinstall')}catch(e){}"
```



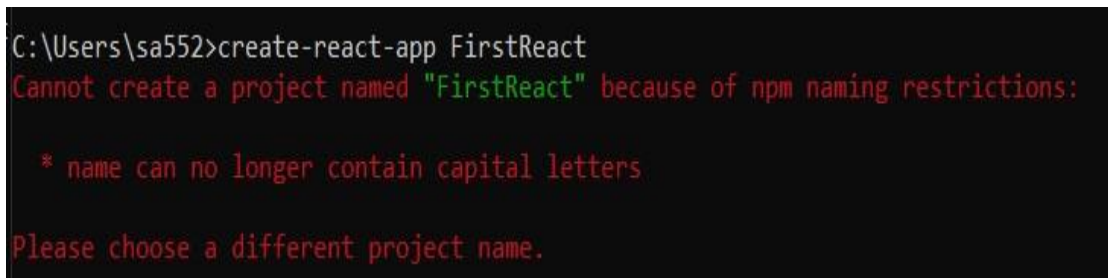

```
Microsoft Windows [Version 10.0.17134.829]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\PCW>E:
E:\>cd newfolder
E:\newfolder>
```

Command to move inside your folder

Now you are inside your folder

Step 5: Now inside this folder run the command → `create-react-app reactfirst YOUR_APP_NAME`



```
C:\Users\sa552>create-react-app FirstReact
Cannot create a project named "FirstReact" because of npm naming restrictions:

* name can no longer contain capital letters

Please choose a different project name.
```

It will take some time to install the required dependencies

NOTE: Due to npm naming restrictions, names can no longer contain capital letters, thus type your app's name in lowercase.

Step 6: Now open the IDE of your choice for eg. Visual studio code and open the folder where you have installed the react app newfolder (in the above example) inside the folder you will see your app's name reactapp (In our example). Use the terminal and move inside your app name folder.

Use command : `cd reactapp (your app name)`

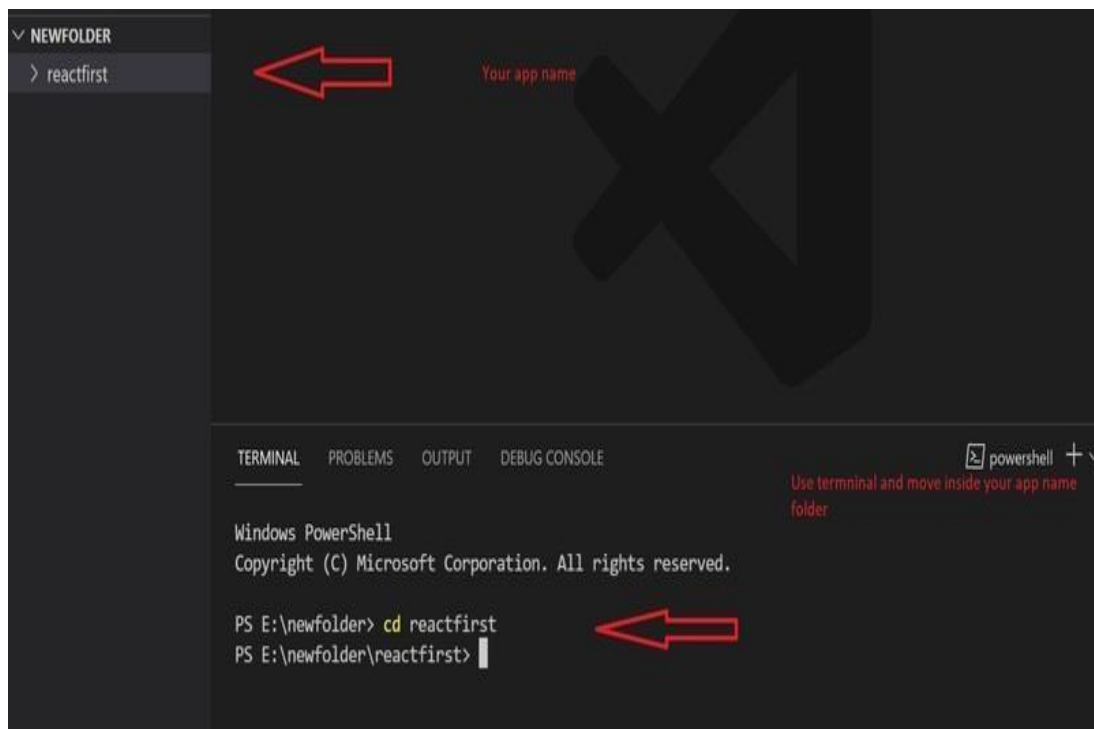
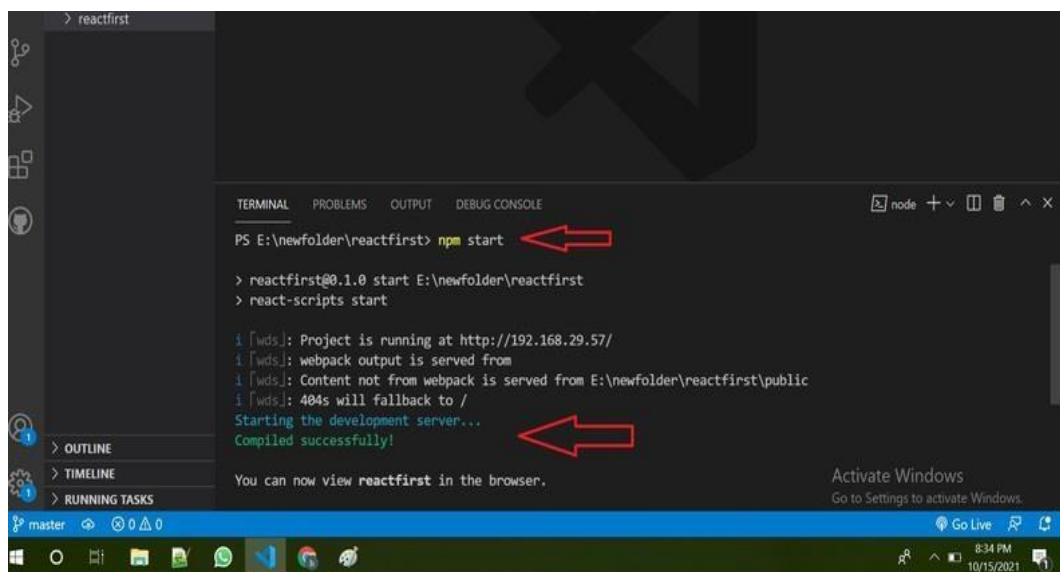


Fig 7.26

Step 7: To start your app run the below command : npm start



Once you run the above command a new tab will open in your browser showing React logo as shown below :



Congratulation you have successfully installed the react-app and are ready to build awesome websites and app.

7.2 ABOUT MERN:

It seems there might be a slight confusion. The MERN stack traditionally refers to MongoDB, Express.js, React, and Node.js, with MongoDB serving as the NoSQL database. If you are specifically using MySQL as your database, it's often referred to as the MEAN stack, where the "M" stands for MySQL.

MySQL is a widely-used relational database management system that supports the structured query language (SQL). It provides a robust and scalable solution for handling structured data, making it suitable for various applications. MySQL Workbench, a visual database design tool, is commonly used to interact with and manage MySQL databases. It offers features such as SQL development, database design, and administration tools in a unified environment.

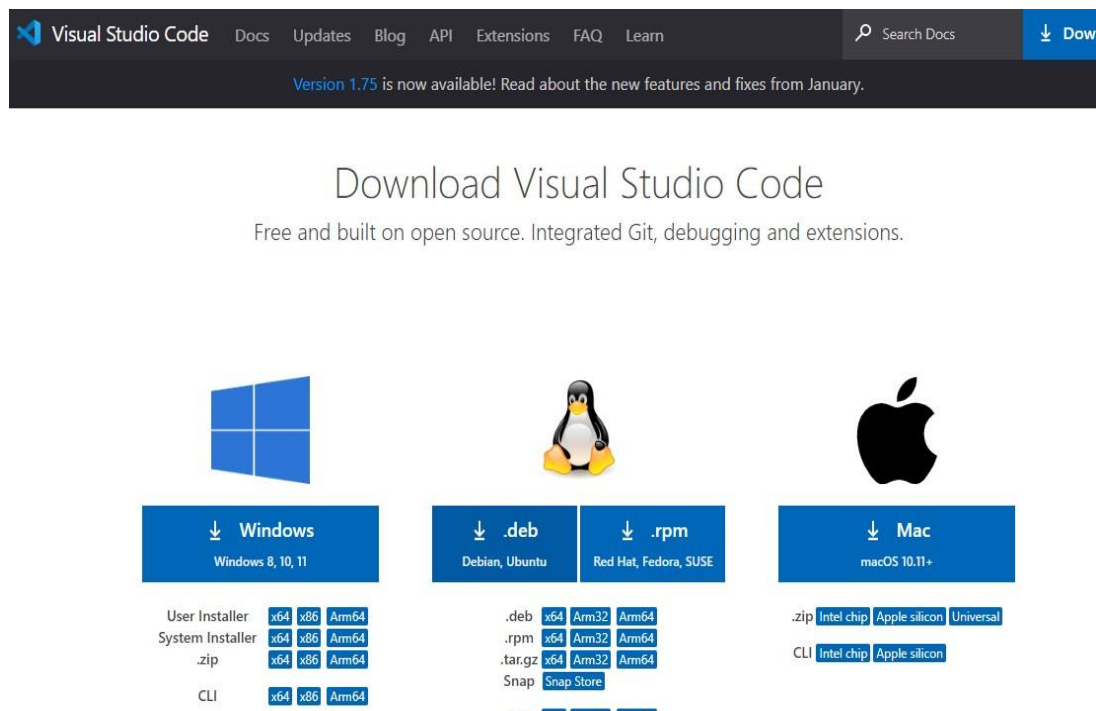
Integrating MySQL into your stack involves configuring the backend (Node.js and Express) to communicate with the MySQL database, while the frontend (React) interacts with the backend through APIs. This MEAN stack can provide a powerful and flexible foundation for building dynamic and data-driven web applications, leveraging the strengths of both MySQL and the JavaScript-based technologies.

Installing visual studio code

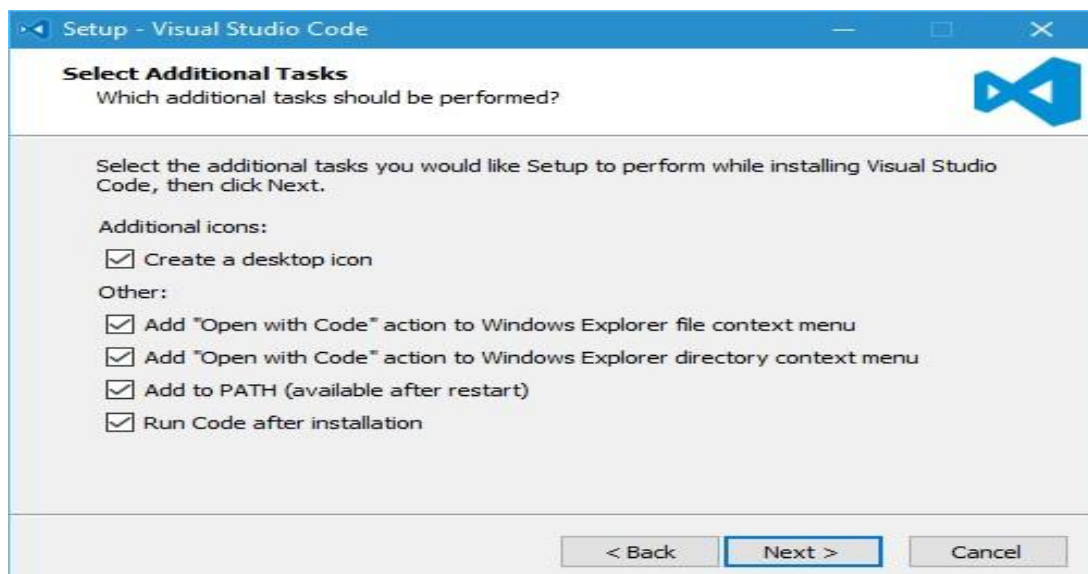
Steps to installing visual studio code:

Step 1: Head over to the website <https://code.visualstudio.com/download>

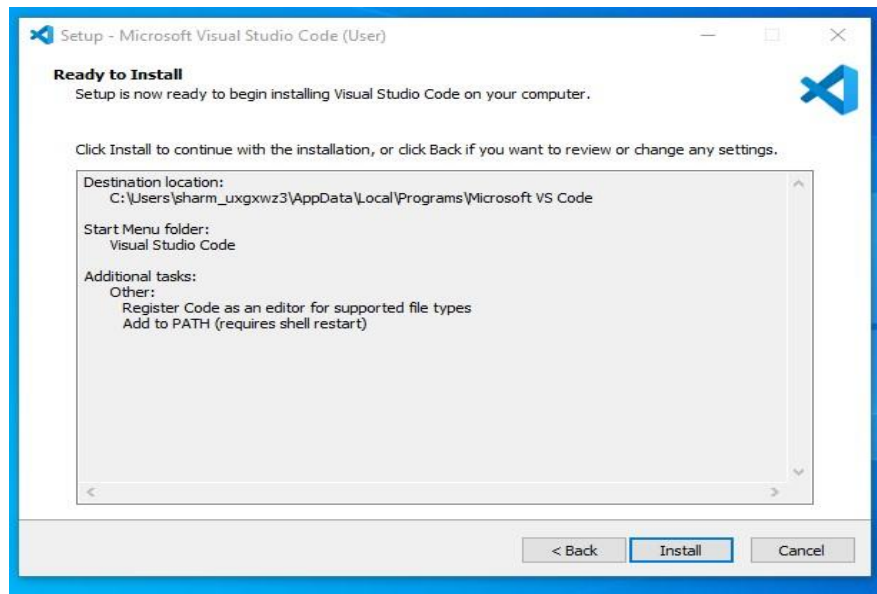
Step2:choose the option as per your choice.



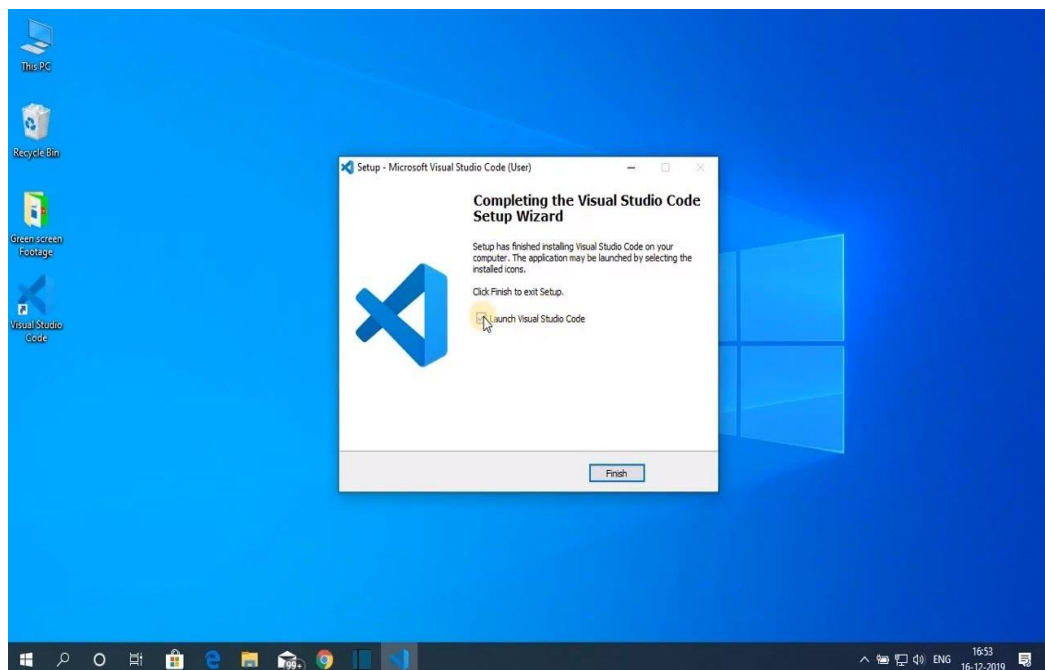
Step 3: Once download completed,open it and your screen will appear like this



Step 4: click next until you saw the below page



Step 5: After installation your screen will appear like this ,click finish and continue



CHAPTER 8

SYSTEM STUDY AND TESTING

8.1 Feasibility Study

The feasibility of the project is analyzed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

Three key considerations involved in the feasibility analysis are

- Economic feasibility
- Technical feasibility
- Social feasibility

Economic Feasibility

This study is carried out to check the economic impact that the system will have on the organization. The amount of fund that the company can pour into the research and development of the system is limited. The expenditures must be justified. Thus the developed system as well within the budget and this was achieved because most of the technologies used are freely available. Only the customized products had to be purchased.

Technical Feasibility

This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands on the available technical resources. This will lead to high demands being placed on the client. The developed system must have a modest requirement, as only minimal or null changes are required for implementing this system.

Social Feasibility

The aspect of study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system, instead must accept it as a necessity. The level of acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make him familiar with it. His level of confidence must be raised so that he is also able to make some constructive criticism, which is welcomed, as he is the final user of the system.

System Testing

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub-assemblies, assemblies and/or a finished product. It is the process of exercising software with the intent of ensuring that the

Software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses a specific testing requirement.

8.2 Types of Tests

8.2.1 Unit testing

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application. It is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

8.2.2 Integration testing

Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfactory, as shown by successful unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

Software integration testing is the incremental integration testing of two or more integrated software components on a single platform to produce failures caused by interface defects.

The task of the integration test is to check that components or software applications, e.g. components in a software system or – one step up – software applications at the company level – interact without error.

Test Results: All the test cases mentioned above passed successfully. No defects encountered.

8.2.3 Acceptance Testing

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

Test Results: All the test cases mentioned above passed successfully. No defects encountered.

8.2.4 Functional testing

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centred on the following items:

Valid Input : identified classes of valid input must be accepted.

Invalid Input : identified classes of invalid input must be rejected.
Functions : identified functions must be exercised.

Organization and preparation of functional tests is focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests is determined.

8.2.5 White Box Testing

White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is used to test areas that cannot be reached from a black box level.

8.2.6 Black Box Testing

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box .you cannot “see” into it. The test provides inputs and responds to outputs without considering how the software works.

Test objectives

- All field entries must work properly.
- Pages must be activated from the identified link.
- The entry screen, messages and responses must not be delayed.

Features to be tested

- Verify that the entries are of the correct format
- No duplicate entries should be allowed

- All links should take the user to correct page
- The links should be activated

FUTURE ENHANCEMENT

In the future, the Faculty Appraisal System could be enhanced by incorporating machine learning algorithms to dynamically adjust weights based on evolving academic standards. Integration with natural language processing could enable a more intuitive and interactive user experience for faculty members. Additionally, exploring block chain technology for secure data storage and authentication would further bolster the system's transparency and reliability, ensuring a cutting-edge and comprehensive approach to faculty performance assessment.

CONCLUSION

In conclusion, the Faculty Appraisal System represents a transformative shift from traditional paper-based assessments to a dynamic, technology-driven approach. By incorporating data analytics and a user-friendly web interface, the system streamlines the appraisal process, providing real-time feedback and visualizations. This innovative solution not only enhances efficiency but also offers a comprehensive and objective evaluation of faculty performance, contributing to the continuous improvement of academic institutions.

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Faculty Appraisal System

Ranjit Reddy Midde,^{a)} Sakiya Rabbani S M,^{b)} Gana Sree Akshaya Reddy P,^{c)} Sharanya M,^{d)} and Mehboob Arab Khan P^{e)}

computer science & engineering, Srinivasa Ramanujan Institute of Technology, Anantapur, Andhra Pradesh, India 515701.

^{a)}midderanjit@gmail.com

^{b)}204g1a0591@srit.ac.in

^{c)}204g1a05c7@srit.ac.in

^{d)}204g1a0593@srit.ac.in

^{e)}214g5a0508@srit.ac.in

Abstract: Faculty performance, appraisal predominantly relies on paper-based assessments and the manual calculation of points based on a range of factors. These factors encompass cognitive abilities, educational achievements, professional accomplishments, and other relevant attributes that contribute to an individual's intellectual prowess. This traditional approach is undergoing a transformation through the integration of technology, specifically utilizing data visualization techniques. Smart appraisal system revolutionizes the assessment of faculty by using data analytics and a dynamic web page. Faculty members log in to provide their achievements through a user-friendly form. The system assigns points to each accomplishment based on predefined weights, offering real-time feedback and visualizations on the final appraisal points.

Keywords: Faculty Appraisal Performance, Data Visualization, Faculty Appraisal System

INTRODUCTION

The Faculty Appraisal System aims to modernize and streamline the assessment process for academic professionals. By leveraging data analytics and a dynamic web interface, this system offers a user-friendly platform for faculty members to input their achievements. The automated point assignment, guided by predefined weights, ensures fairness and accuracy in the appraisal process. Real-time feedback and visualizations enhance transparency and contribute to a more efficient and effective faculty evaluation system.

Faculty performance appraisal predominantly relies on paper-based assessments and manual calculation of points based on a range of factors. Creating a Faculty appraisal system that assists academic institutions in making informed decisions about promotions, salary adjustments, and recognition necessitates aligning the outcomes with institutional goals and policies. Developing a report generation mechanism that translates accumulated points into clear appraisal insights and potential increments, promoting transparency and trust among faculty and stakeholders.

The Faculty Appraisal System aims to modernize traditional performance assessments through the integration of web technology. This system will provide a dynamic web-based platform where faculty members can log in and submit their achievements via a user-friendly form. The system will employ predefined weights to assign points to each accomplishment, offering real-time feedback and visualizations for a comprehensive and efficient appraisal process.

LITERATURE SURVEY

Researchers dedicated their efforts for enhancing the faculty appraisal system. [1], In this paper, the integration of data analytics in faculty performance appraisal systems. The researchers conducted a thorough literature review to assess the current landscape of faculty appraisal methods and identified the growing trend towards incorporating data analytics. The paper emphasizes the need for dynamic systems that go beyond traditional paper-based assessments, highlighting the potential benefits of real-time feedback and visualization in enhancing the appraisal process. The findings provide valuable insights into the transformative impact of data analytics on faculty evaluation.[2], In this study, they conducted a comprehensive survey of recent technological innovations in faculty appraisal systems. The paper reviews various approaches, including the use of dynamic web pages and userfriendly interfaces. The authors emphasize the importance of technology in revolutionizing traditional appraisal methods and discuss how these innovations contribute to a more efficient and transparent evaluation process. The study serves as a valuable resource for institutions seeking to adopt modern faculty appraisal paradigms.[3], In this study present a forward-looking perspective on faculty appraisal systems, with a focus on user-centric design principles. The study investigates the role of intelligent systems in providing a user-friendly experience for faculty members. By incorporating insights from human-computer interaction and design thinking, the authors argue that enhancing the user experience is crucial for the successful implementation of appraisal systems. The paper provides practical recommendations for developing appraisal systems that prioritize usability and engagement.[4], In this study the conduct a meta-analysis to evaluate the impact of technology-enabled faculty appraisal systems. The study synthesizes findings from existing literature to assess the effectiveness of these systems in improving the accuracy and fairness of evaluations. The researchers identify key success factors and challenges associated with the adoption of technology in faculty appraisal. The meta-analysis offers valuable insights for institutions considering the implementation of technology-driven appraisal solutions.[5], In this study the author delve into the current trends and challenges associated with data-driven approaches to faculty appraisal. The paper explores the evolving landscape of appraisal systems, emphasizing the role of data analytics in capturing and analyzing diverse faculty achievements. The authors discuss the potential benefits and address the challenges and ethical considerations associated with data-driven appraisal. The study contributes to the ongoing discourse on the transformative impact of data-driven approaches in shaping the future of faculty evaluation.

METHODOLOGY

Our Faculty Appraisal System used react software for the development of the web form and for the data visualization of the marks.

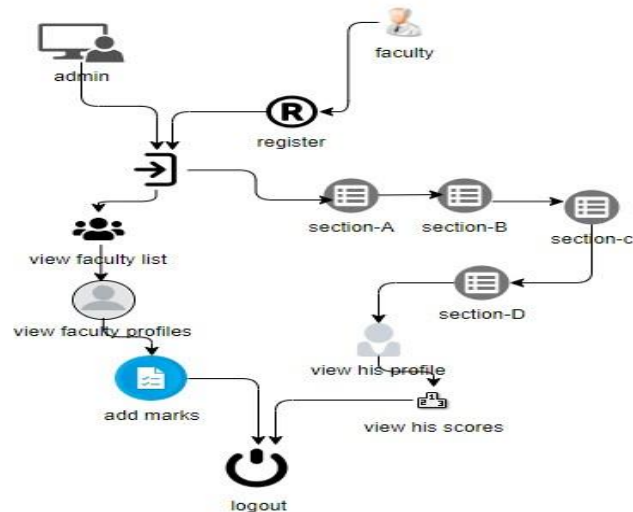


FIGURE 1: Faculty Appraisal Architecture

A. Workflow for admin

1. Login:

The admin starts by logging into the system using valid credentials.

2. View Faculty List:

After logging in, the admin has the ability to view a list of all registered faculty members.

3. View Faculty Profile:

The admin can access detailed profiles of individual faculty members, which may include personal information, qualifications, and teaching history.

4. Add Marks (Verify):

The admin has the authority to add and verify the marks of faculty members, ensuring accuracy and consistency in the assessment process.

5. Logout:

Once the necessary tasks are completed, the admin logs out of the system, ensuring the security of the admin account

B. Workflow for Faculty

1. Register:

Faculty members first register into the system by providing necessary information such as personal details, academic qualifications, and contact information.

2. Login:

Registered faculty members log in using their credentials to access the system.

3. Section A (Teaching and Learning Process):

Faculty members input information related to their teaching activities, including courses taught, class schedules, and teaching methodologies.

4. Section B (Professional Related Works):

In this section, faculty members record their professional development activities, workshops attended, conferences participated in, and any other professional achievements.

5. Section C (Research Activities):

Faculty members enter details about their research activities, including ongoing projects, publications, and collaborations with other researchers.

6. Section D (Feedback from Peers):

This section allows faculty members to receive and provide feedback from and to their peers. It fosters a collaborative environment and continuous improvement in teaching and research.

7. View Entire Profile:

Faculty members have the option to view their entire profile, consolidating all the information entered in different sections.

8. View Scores (Data Visualizations):

The system generates visualizations representing the faculty member's scores in various categories, providing a comprehensive overview of their performance.

9. Logout:

After completing the necessary entries and reviews, the faculty member securely logs out of the system.

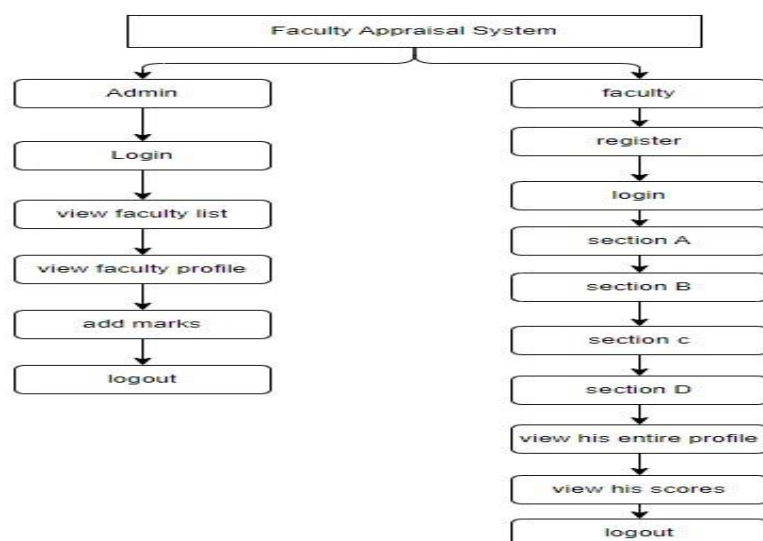


FIGURE 2: Faculty Appraisal System Workflow

C. FrontEnd

The Front end of the application consists of the web application which contains the faculty appraisal forms. A faculty member has to log into his/her account first to access these forms. After logging in, the user has to give input values for various fields. With the help of react, calculated values will be displayed accordingly which means that the user need not worry about calculations. The data generated after filling the forms is then stored in the MYSQL Server.

D. Backend

In this project, the backend, implemented with Express.js and Node.js, serves as the backbone for handling faculty inputs and performing crucial calculations. Utilizing a MySQL database for data storage, the backend efficiently processes information submitted through a form by faculty members. Express.js routes and middleware manage data validation and storage, ensuring the persistence of relevant details. The backend's key role lies in computing scores by leveraging the stored data, and it seamlessly communicates the results to the React frontend. This integration demonstrates the backend's pivotal function in managing data flow, executing essential calculations, and ultimately contributing to the project's overall efficiency and functionality.

E. Data visualization

Data visualization plays a pivotal role in enhancing the interpretability of faculty performance metrics. Through the integration of bar graphs, we present a visual representation of the marks obtained by faculty members in each distinct section, providing a comprehensive and accessible overview. This graphical approach facilitates a comparative analysis of performance across different categories, allowing stakeholders to quickly discern strengths and areas for improvement. The bar graphs serve as a user-friendly interface, aiding in the efficient interpretation of complex data. In our project, we leverage the power of data visualization to enhance user understanding and engagement. One key component driving this capability is the integration of ReactApexChart. This React wrapper for the Apex Charts library empowers us to effortlessly create dynamic and visually appealing charts, with the flexibility to choose from a variety of chart types. Through the ReactApexChart component, we seamlessly provide our users with insights through interactive and responsive bar charts, line charts, and more. This not only enhances the overall user experience but also contributes to a more effective communication of complex data trends and patterns. The ease of integration and customization offered by ReactApexChart aligns perfectly with our project's commitment to delivering a visually compelling and informative user interface.

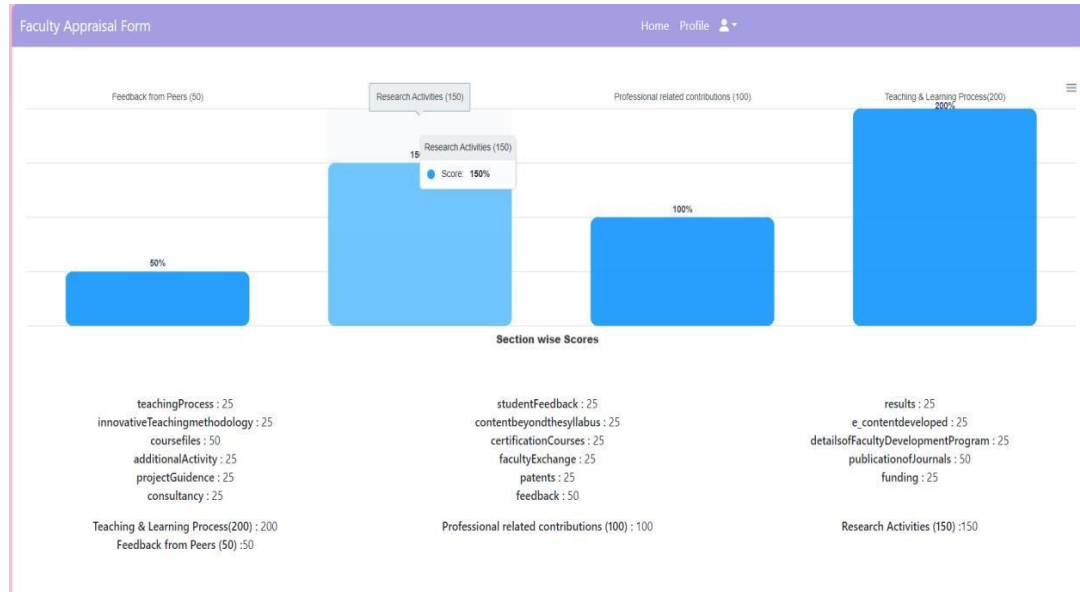


FIGURE 3: Data visualization of faculty marks

RESULTS & DISCUSSIONS

The application would help in evaluation of faculty performance and help the organization in collection and evaluation of data process. The access to view or edit the data that is collected from individual faculty is given to authorized admins. The data visualization is implemented and can be seen by user once the data is filled.

CONCLUSION

In conclusion, the Faculty Appraisal System represents a transformative shift from traditional paper-based assessments to a dynamic, technology-driven approach. By incorporating data analytics and a user-friendly web interface, the system streamlines the appraisal process, providing real-time feedback and visualizations. This innovative solution not only enhances efficiency but also offers a comprehensive and objective evaluation of faculty performance, contributing to the continuous improvement of academic institutions.

FUTURE WORK

Enhancing Machine learning

The Faculty Appraisal System could be enhanced by incorporating machine learning algorithms to dynamically adjust weights based on evolving academic standards. Integration with natural language processing could enable a more intuitive and interactive user experience for faculty members.

Exploring Block chain

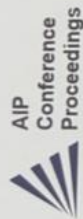
Exploring block chain technology for secure data storage and authentication would further bolster the system's transparency and reliability, ensuring a cutting-edge and comprehensive approach to faculty performance assessment.

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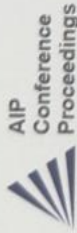
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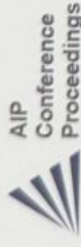
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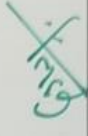
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