

RV COLLEGE OF ENGINEERING®

BENGALURU – 560059

(Autonomous Institution Affiliated to VTU, Belagavi)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



“KCET College and Course Predictor”

**PROJECT REPORT
SOFTWARE ENGINEERING LAB(18CS55)
V SEMESTER**

2020-2021

Submitted by

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CERTIFICATE

Certified that the Mini-Project work titled "**CET COLLEGE AND COURSE PREDICTOR**" has been carried out by **Shreyas P (1RV19CS153), Shubbhumi Yadav (1RV19CS157), Vaibhav Iramani (1RV19CS177)**, Bonafide students of RV College of Engineering, Bengaluru, have submitted in partial fulfilment for the **Assessment of Course: SOFTWARE ENGINEERING PROJECT (18CS55)** during the year 2020-2021. It is certified that all corrections/suggestions indicated for the internal assessment have been incorporated in the report.

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DECLARATION

We, **Shreyas(1RV19CS153),Shubhum(1RV19CS157),Vaibhav (1RV19CS177)** the students of 5th Semester B.E., Department of Computer Science and Engineering, R.V. College of Engineering, Bengaluru hereby declare that the mini-project titled "**CET COLLEGE AND COURSE PREDICTOR**" has been carried out by us and submitted in partial fulfilment for the **Assessment of Course: SOFTWARE ENGINEERING PROJECT (18CS55)** during the year 2020-2021.

Place: Bengaluru

- 1. Shreyas P**
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- 3. Vaibhav Iramani**

Date:

ACKNOWLEDGEMENT

Any achievement, be it scholastic or otherwise does not depend solely on the individual efforts but on the guidance, encouragement and cooperation of intellectuals, elders and friends. A number of personalities, in their own capacities have helped me in carrying out this project work. I would like to take this opportunity to thank them all.

I deeply express my sincere gratitude to my guide **Ass. Prof. Smriti Srivastav**, Department of CSE, RVCE, Bengaluru, for her able guidance, regular source of encouragement and assistance throughout this project

I would like to thank **Dr. Ramakanth Kumar P**, Head of Department, Computer Science & Engineering, R.V.C.E, Bengaluru, for his valuable suggestions and expert advice.

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I thank my Parents, and all the Faculty members of the Department of Computer Science & Engineering for their constant support and encouragement.

Last, but not the least, I would like to thank my peers and friends who provided me with valuable suggestions to improve my project.

Abstract

KCET is a state wide exam in which almost 2 lakh students compete every year for various engineering, agricultural and various other government funded college programs. All these students aspiring to join various colleges and courses have to take the exam to avail a rank which they further use to apply for various colleges and courses. This project aims to provide these students with the idea of which courses or colleges they may attain for their respective ranks or marks based on the data and trends of the previous years. Present existing system is able to predict the rank and shows the previous year's cut-off in a pdf format which students cannot understand easily. So this project helps students to know their ranks , cut-off marks , trending colleges in graphical view . So that students can easily guess their ranks and good colleges and courses for their higher education.

The front end of this project uses Django and the Python language is used as an object oriented language . SQL used to store the data in the database. Data inconsistency may occur due to addition or deletion of courses and re-allotment of seats over the passing years. Implement the system using at least a few renowned colleges in the database's commands for above queries/applications. Platform constraints.

This product aims to provide students clear and accurate information about the probability of getting seats in a certain college/course, further this project helps students to make educated decisions about their choices of colleges and courses by providing them with information about trending colleges and courses in a straightforward manner.

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Chapter 1

Software Requirements Specification

A software requirements specification (SRS) is a description of a software system to be developed. The software requirements specification lays out functional and non-functional requirements, and it may include a set of use cases that describe user interactions that the software must provide to the user for perfect interaction.

Software requirements specification establishes the basis for an agreement between customers and contractors or suppliers on how the software product should function (in a market-driven project, these roles may be played by the marketing and development divisions). Software requirements specification is a rigorous assessment of requirements before the more specific system design stages, and its goal is to reduce later redesign. It should also provide a realistic basis for estimating product costs, risks, and schedules.

2.1 Hardware Requirements

- Operating System : windows, macOS , linux .
- Processor : Intel ,Intel Pentium or later
- Memory : 2 GB minimum, 4 GB recommended.
- Application window size : 1024x680 or larger
- Screen resolution : 1280x1024 or larger
- Internet connection is Required.

2.2 Software Requirements

- Front End : Django
- Back End : Python
- Platform:- The application will run on any modern web browser like google chrome, microsoft edge, firefox etc.
- Database :- The application will use a MySQL database to record the data of results and extrapolate the data
- NoSQL :- The application will also use MongoDB as it is well integrated with python and can be used for faster access of relevant data.
- Operating System :- The application is independent of the operating system as it will run on a web browser.

2.3 Functional Requirements

The functional requirements of the project include:

2.3.1 Authentication

The admin can perform special functions by getting their credentials authenticated in the form of a username and password. The user has separate credentials for authentication. They are given the privilege of entering marks, rank, selecting colleges and courses. On invalid credentials, general user mode is applied.

2.3.2 Predict Rank

Students after their successful completion of login , can predict the rank by entering marks in the given fields. It shows the predictable rank based on the previous data stored. It asks students to enter the marks in the given fields and after which it shows the rank .

2.3.3 Predict Colleges and Courses

Once a student knows their rank they can predict whether their interest in colleges and courses will get or not using the web application. Students need to enter the rank and have to choose the college and course of their interest. It will predict whether his chosen college will get it or not based on the previous year data stored in the database.

2.3.4 Show Cut-off

The application will also show the cutoff rank of previous years. Students need to choose the year of cutoff, college , course and category then it shows the cutoff for the chosen options .

2.3.5 Know Trending Colleges and Courses

The developed application also displays the trending colleges and courses based on the previous data stored in the database . Students can easily get to know about the colleges and courses so that they can select good colleges and courses according to their ranks.

Chapter 2

Design Document

2.1 UML Diagrams

The UML stands for Unified modelling language, is a standardized general-purpose visual modelling language in the field of Software Engineering. It is used for specifying, visualizing, constructing, and documenting the primary artifacts of the software system. It helps in designing and characterizing, especially those software systems that incorporate the concept of Object orientation. It describes the working of both the software and hardware systems.

The Object Management Group (OMG) is an association of several companies that controls the open standard UML. The OMG was established to build an open standard that mainly supports the interoperability of object-oriented systems. It is not restricted within the boundaries, but it can also be utilized for modelling the non-software systems. The OMG is best recognized for the Common Object Request Broker Architecture (CORBA) standards.

2.1.1 Goals of UML

- Since it is a general-purpose modelling language, it can be utilized by all the modelers.
- UML came into existence after the introduction of object-oriented concepts to systemize and consolidate the object-oriented development, due to the absence of standard methods at that time.
- The UML diagrams are made for business users, developers, ordinary people, or anyone who is looking forward to understanding the system, such that the system can be software or non-software.
- Thus it can be concluded that the UML is a simple modeling approach that is used to model all the practical systems.

2.1.2 Characteristics of UML

- It is a generalized modeling language.
- It is distinct from other programming languages like C++, Python, etc.
- It is interrelated to object-oriented analysis and design.
- It is used to visualize the workflow of the system.
- It is a pictorial language, used to generate powerful modeling artifacts.

2.2 Data Flow Diagram

A data flow diagram (DFD) is a graphical representation of "flow" of data through an information system. Data flow models describe how data flows through a sequence of processing steps. DFD is composed of four elements, which are, data flow, external entity, and data store. With a data flow diagram, the users can easily visualize the operations within the system, what can be accomplished using the system and the implementation of the system.

2.2.1 DFD Level 0

The level 0 DFD describes the general operation of the system. The inputs to the system and the obtained outputs are described in this section.

As shown below in Fig-1 , DFD Level 0 there are two entities - Student and Admin. The data flows between the Student and the system and Admin and the system is shown in the below figure . The process CET College/Course Predictor through which data flows to the both entities

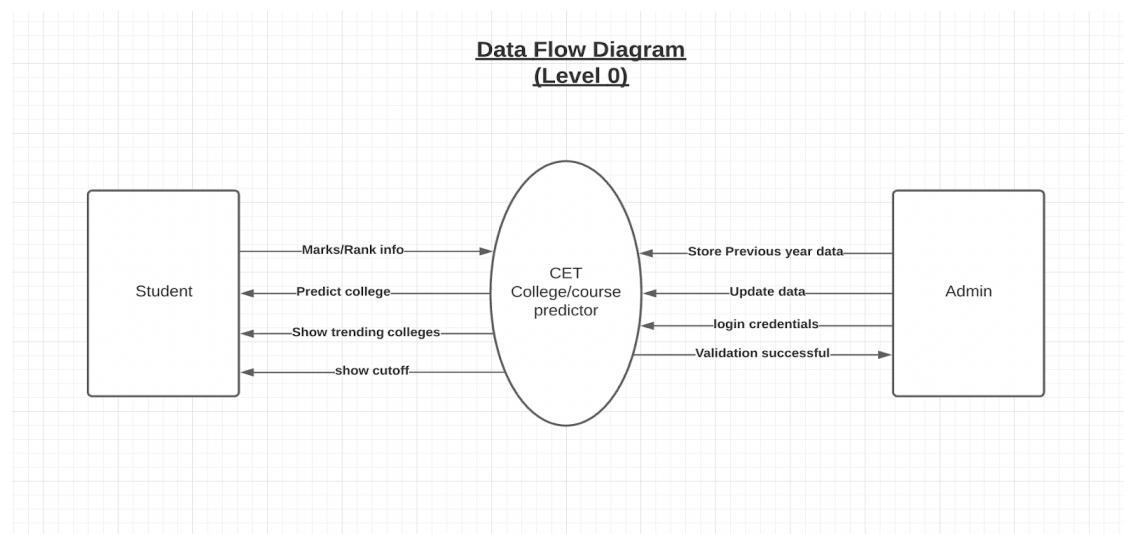


Fig -1 Data Flow Diagram - Level 0 (KCET College/Course Predictor)

2.2.2 DFD Level 1

The level 1 DFD describes in detail the modules of Level 0 DFD. This is as shown in the figure 2 below.

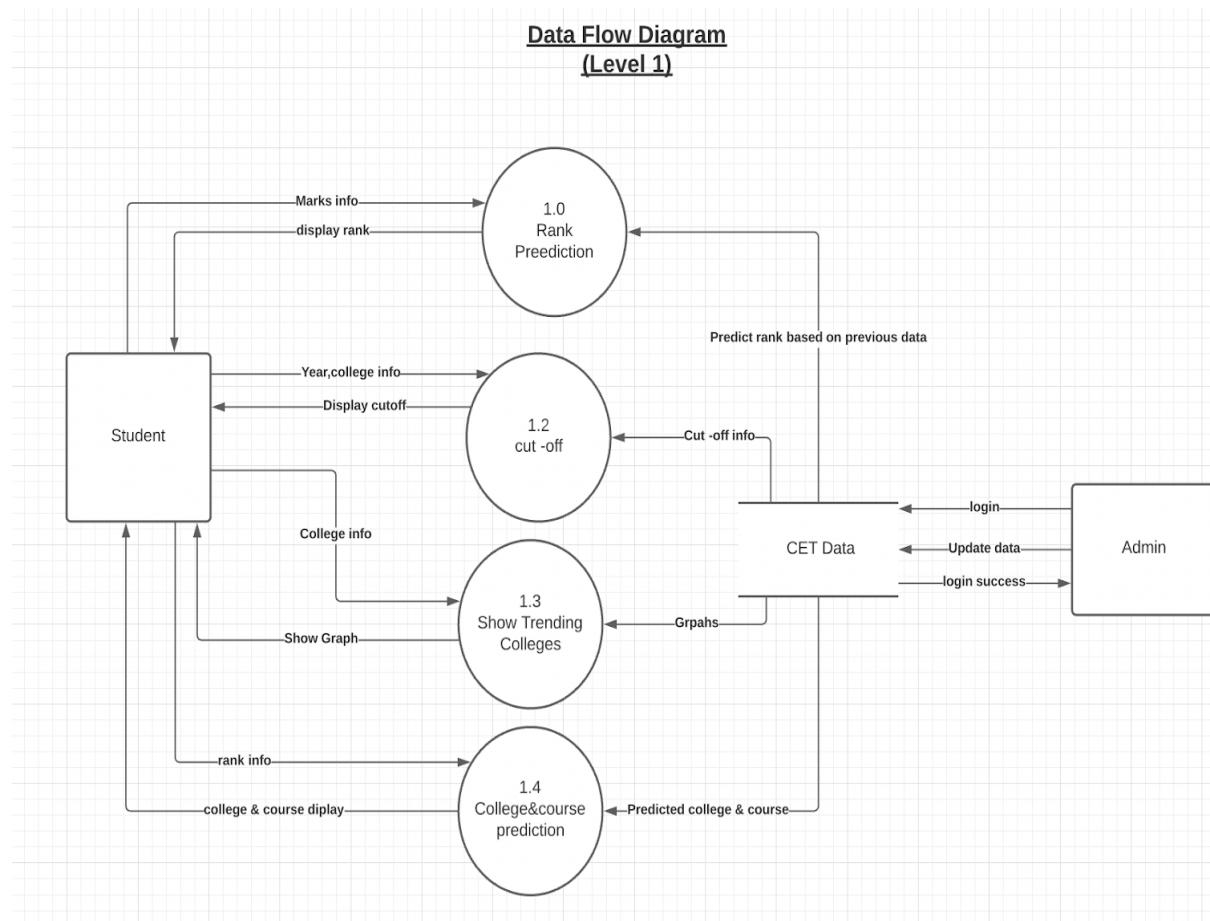


Fig - 2 Data Flow Diagram Level 2 (KCET College/Course Predictor)

In this level each of the processes performed by two main entities are discussed in detail. The various processes include Rank Prediction , Cut -off , Show trending colleges , College & course prediction . As shown in the fig - 3 above the inputs and outputs for each process from the entity each of the users can perform the functions entitled to them. This level gives a brief description of the flow of data between the various entities and the database. The database used here is the Previous year's CET data .

2.3 Class Diagram

The class diagram depicts a static view of an application. It represents the types of objects residing in the system and the relationships between them. A class consists of its objects, and also it may inherit from other classes. A class diagram is used to visualize, describe, document various different aspects of the system, and also construct executable software code.

It shows the attributes, classes, functions, and relationships to give an overview of the software system. It constitutes class names, attributes, and functions in a separate compartment that helps in software development. Since it is a collection of classes, interfaces, associations, collaborations, and constraints, it is termed as a structural diagram.

2.3.1 Purpose of Class Diagram

The main purpose of class diagrams is to build a static view of an application. It is the only diagram that is widely used for construction, and it can be mapped with object-oriented languages. It is one of the most popular UML diagrams. Following are the purpose of class diagrams given below:

1. It analyses and designs a static view of an application.
2. It describes the major responsibilities of a system.
3. It is a base for component and deployment diagrams.
4. It incorporates forward and reverse engineering.

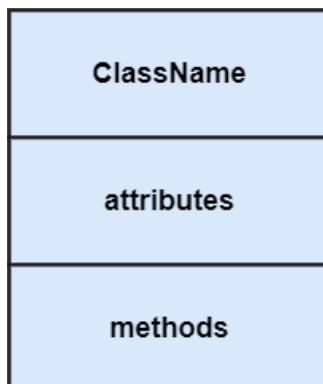
2.3.2 Benefits of Class Diagram

- It can represent the object model for complex systems.
- It reduces the maintenance time by providing an overview of how an application is structured before coding.
- It provides a general schematic of an application for better understanding.
- It represents a detailed chart by highlighting the desired code, which is to be programmed.
- It is helpful for the stakeholders and the developers.

2.3.3 Vital Components of Class Diagram

The class diagram is made up of three sections:

- **Upper Section:** The upper section encompasses the name of the class. A class is a representation of similar objects that share the same relationships, attributes, operations, and semantics. Some of the following rules that should be taken into account while representing a class are given below:
 1. Capitalize the initial letter of the class name.
 2. Place the class name in the centre of the upper section.
 3. A class name must be written in bold format.
 4. The name of the abstract class should be written in italics format.
- **Middle Section:** The middle section constitutes the attributes, which describe the quality of the class. The attributes have the following characteristics:
 1. The attributes are written along with its visibility factors, which are public (+), private (-), protected (#), and package (~).
 2. The accessibility of an attribute class is illustrated by the visibility factors.
 3. A meaningful name should be assigned to the attribute, which will explain its usage inside the class.
- **Lower Section:** The lower section contain methods or operations. The methods are represented in the form of a list, where each method is written in a single line. It demonstrates how a class interacts with data.



2.3.4 UML Class Diagram

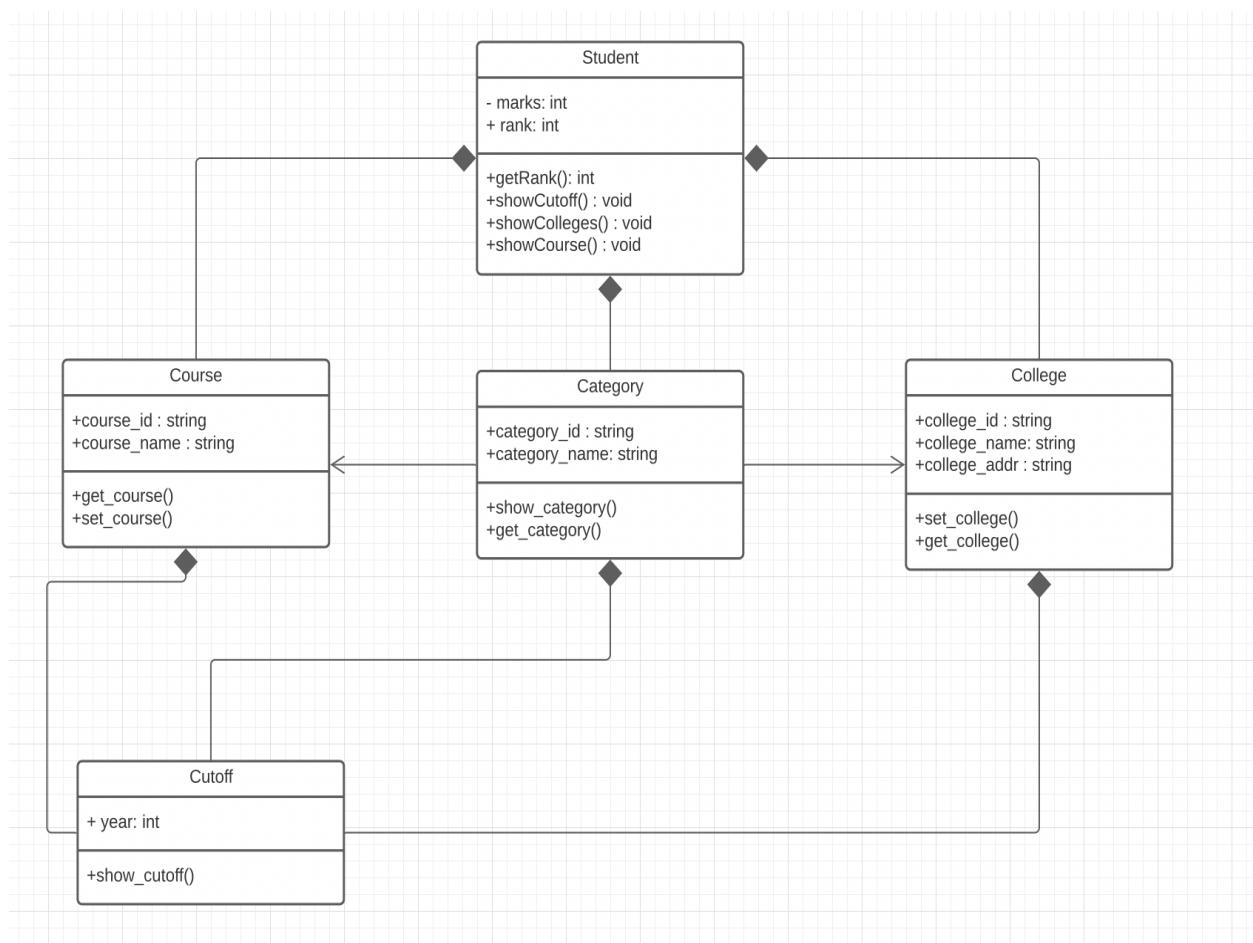


Fig -3 UML Class Diagram(KCET College/Course Predictor)

As shown above Fig-3, the relationships used among the classes are of Composition type.

Composition : The composition is a subset of aggregation. It portrays the dependency between the parent and its child, which means if one part is deleted, then the other part also gets discarded. It represents a whole-part relationship.

2.4 Sequence Diagram

The sequence diagram represents the flow of messages in the system and is also termed as an event diagram. It helps in envisioning several dynamic scenarios. It portrays the

communication between any two lifelines as a time-ordered sequence of events, such that these lifelines took part at the run time. In UML, the lifeline is represented by a vertical bar, whereas the message flow is represented by a vertical dotted line that extends across the bottom of the page. It incorporates the iterations as well as branching.

2.4.1 Purpose of Sequence Diagram

1. To model high-level interaction among active objects within a system.
2. To model interaction among objects inside a collaboration realizing a use case.
3. It either models generic interactions or some certain instances of interaction.

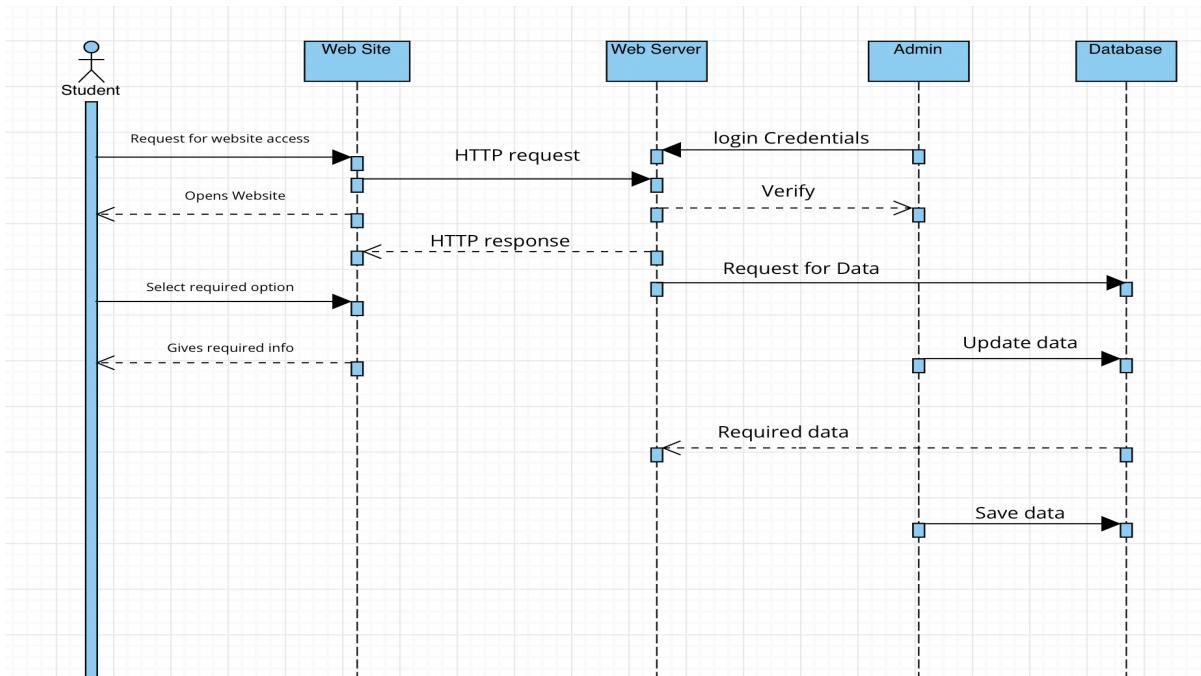


Fig -4 UML Sequence Diagram (KCET College/Course Predictor)

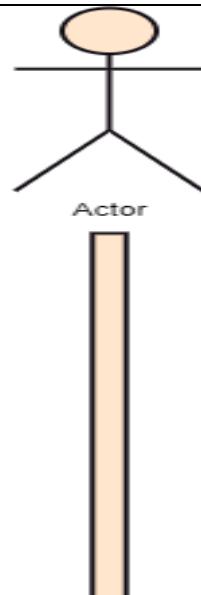
2.4.2 Notations of a Sequence Diagram

Life time :

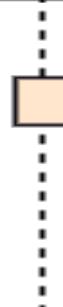
An individual participant in the sequence diagram is represented by a lifeline. It is positioned at the top of the diagram.

Lifeline**Actor :**

A role played by an entity that interacts with the subject is called as an actor. It is out of the scope of the system. It represents the role, which involves human users and external hardware or subjects. An actor may or may not represent a physical entity, but it purely depicts the role of an entity. Several distinct roles can be played by an actor or vice versa.

**Activation:**

It is represented by a thin rectangle on the lifeline. It describes that time period in which an operation is performed by an element, such that the top and the bottom of the rectangle is associated with the initiation and the completion time, each respectively.

Lifeline

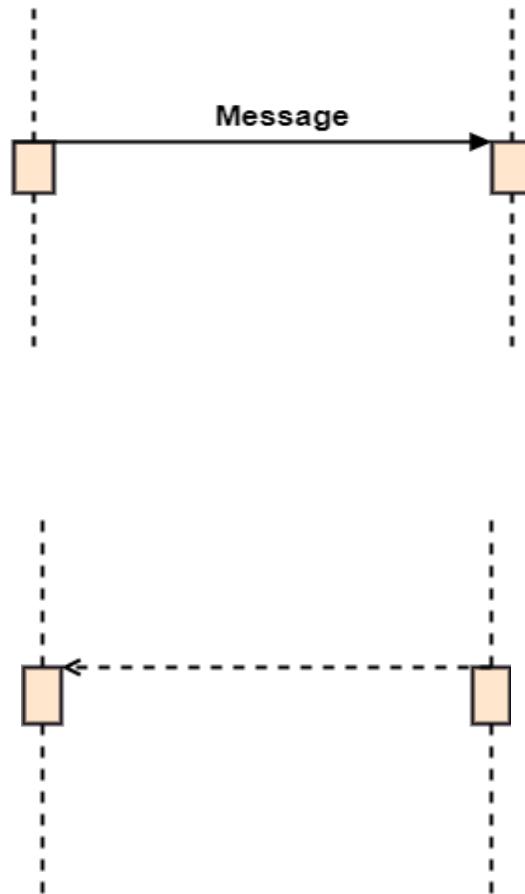
Messages :

The messages depict the interaction between the objects and are represented by arrows. They are in the sequential order on the lifeline. The core of the sequence diagram is formed by messages and lifelines.

Two types of messages are :

Call Message: It defines a particular communication between the lifelines of an interaction, which represents that the target lifeline has invoked an operation.

Return Message: It defines a particular communication between the lifelines of interaction that represent the flow of information from the receiver of the corresponding caller message.



2.4.4 Benefits of Sequence Diagram

1. It explores the real-time application.
2. It depicts the message flow between the different objects.
3. It has easy maintenance.
4. It is easy to generate.
5. Implement both forward and reverse engineering.
6. It can easily update as per the new change in the system

2.5 Activity Diagram

In UML, the activity diagram is used to demonstrate the flow of control within the system rather than the implementation. It models the concurrent and sequential activities.

The activity diagram helps in envisioning the workflow from one activity to another. It puts emphasis on the condition of flow and the order in which it occurs. The flow can be sequential, branched, or concurrent, and to deal with such kinds of flows, the activity diagram has come up with a fork, join, etc.

It is also termed as an object-oriented flowchart. It encompasses activities composed of a set of actions or operations that are applied to model the behavioural diagram.

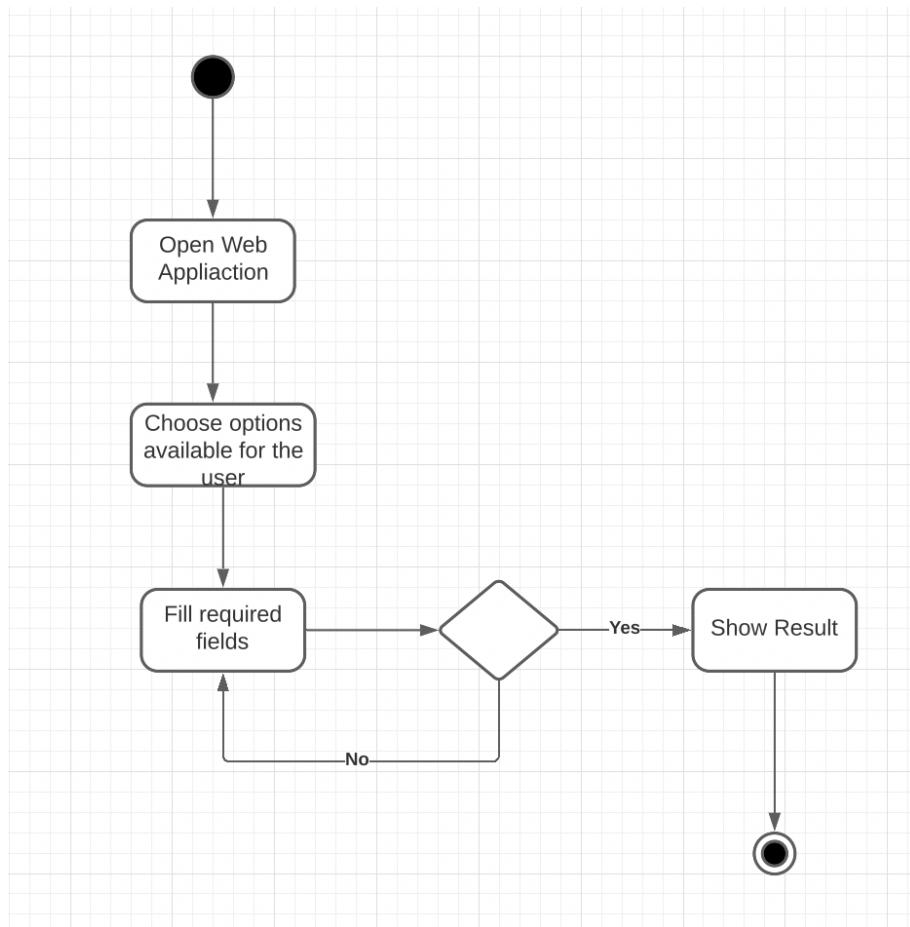


Fig – 5 UML Activity Diagram (KCET College/Course Predictor)

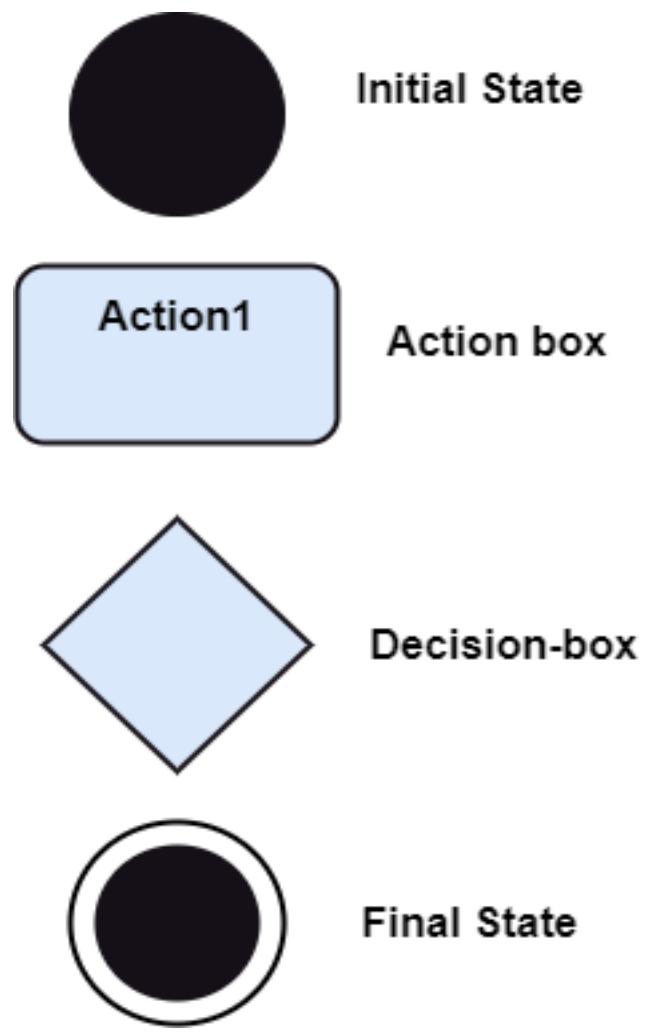
2.5.1 Notation of an Activity Diagram

Initial State : It depicts the initial stage or beginning of the set of actions.

Action Box: It represents the set of actions that are to be performed.

Decision Box: It makes sure that the control flow or object flow will follow only one path.

Final State: It is the stage where all the control flows and object flows end.



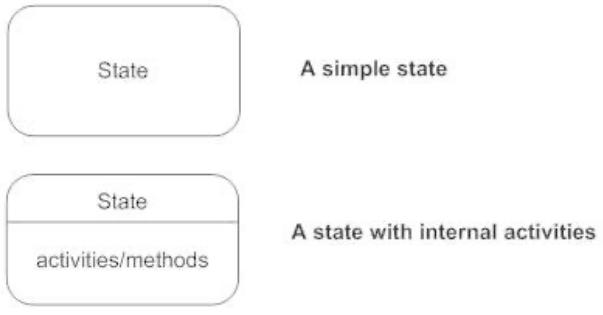
Activity diagram can be used for –

- Modelling workflow by using activities.
- Modelling business requirements.
- High level understanding of the system's functionalities.
- Investigating business requirements at a later stage.

2.6 State Chart Diagram

A state diagram shows the behaviour of classes in response to external stimuli. Specifically a state diagram describes the behaviour of a single object in response to a series of events in a system. Sometimes it's also known as a Hare state chart or a state machine diagram. This UML diagram models the dynamic flow of control from state to state of a particular object within a system.

2.6.1 State chart Diagram Notations and Symbols

States States represent situations during the life of an object. You can easily illustrate a state in Smart Draw by using a rectangle with rounded corners.	
Transition A solid arrow represents the path between different states of an object. Label the transition with the event that triggered it and the action that results from it. A state can have a transition that points back to itself.	

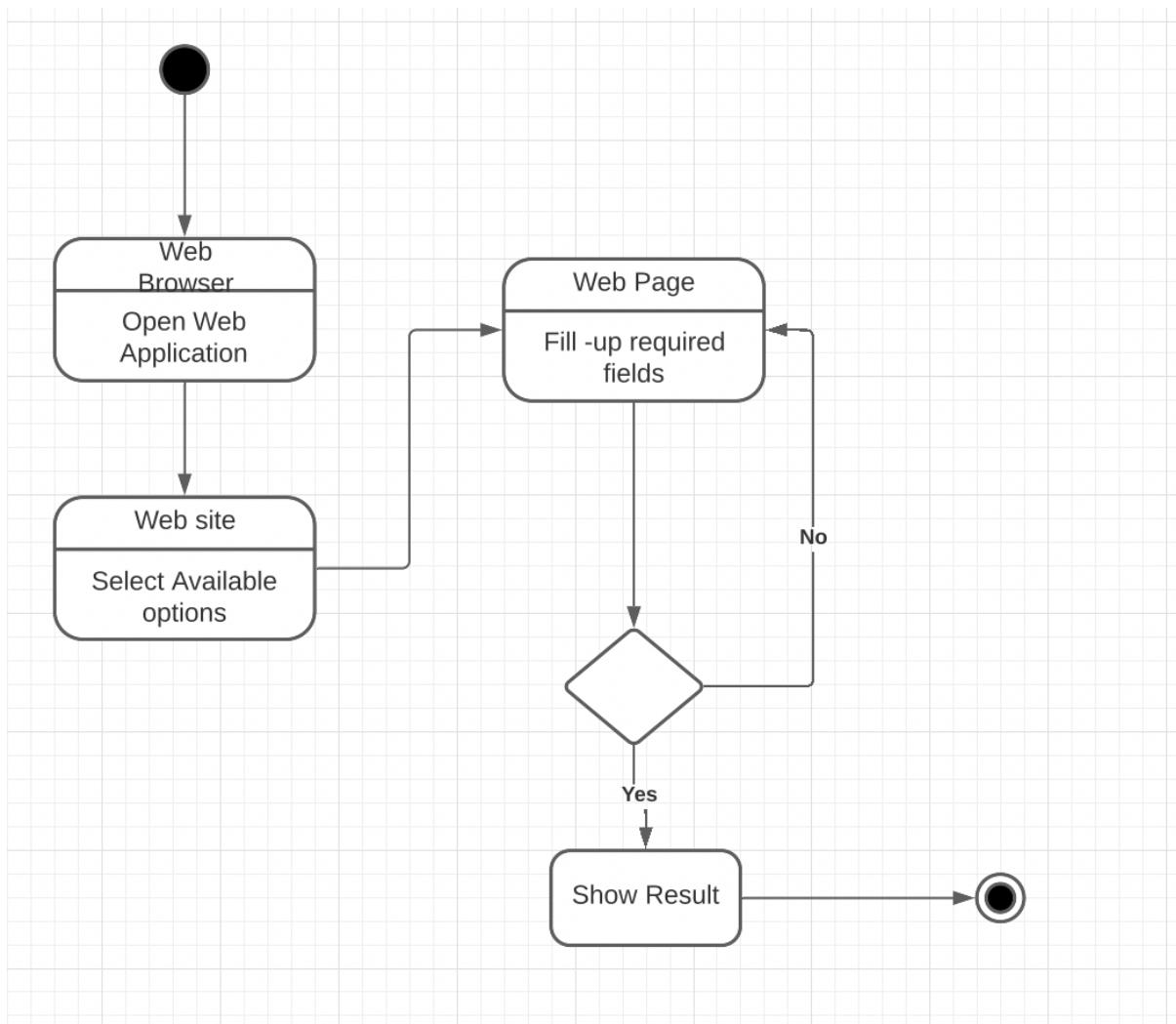


Fig -6 UML State Chart Diagram(KCET College/Course Predictor)

The main usage can be described as –

- To model the object states of a system.
- To model the reactive system. Reactive system consists of reactive objects.
- To identify the events responsible for state changes.
- Forward and reverse engineering.

Chapter 3

Project Implementation Plan

System Overview

The system which is being built here with this project is a web application for the benefit of the Karnataka state students . The proposed system here is a website which takes into consideration the trends of previous year data and results. This data can be used to calculate new trends, predict rank, predict colleges and courses. The proposed system takes marks scored by the user and calculates the most probable rank, this rank along with the data of previous year's results can be further used to predict the colleges/courses depending on the users preferences.

3.1 System Description with description

KCET is a state wide exam in which almost 2 lakh students compete every year for various engineering, agricultural and various other government funded college programs. All these students aspiring to join various colleges and courses have to take the exam to avail a rank which they further use to apply for various colleges and courses. This project aims to provide these students with the idea of which courses or colleges they may attain for their respective ranks or marks based on the data and trends of the previous years.

Present existing system is able to predict the rank and shows the previous year's cut-off in a pdf format which students cannot understand easily. So this project helps students to know their ranks , cut-off marks , trending colleges in graphical view . So that students can easily guess their ranks and good colleges and courses for their higher education.

This product aims to provide students clear and accurate information about the probability of getting seats in a certain college/course, further this project helps students to make educated decisions about their choices of colleges and courses by providing them with information about trending colleges and courses in a straightforward manner

3.2 Assumptions and constraints

The system will be dependent on the following:

- We assume that the data provided by the government website is homogenous and has no major inconsistencies.
- The system will also be dependent on the users to provide valid information for prediction of results

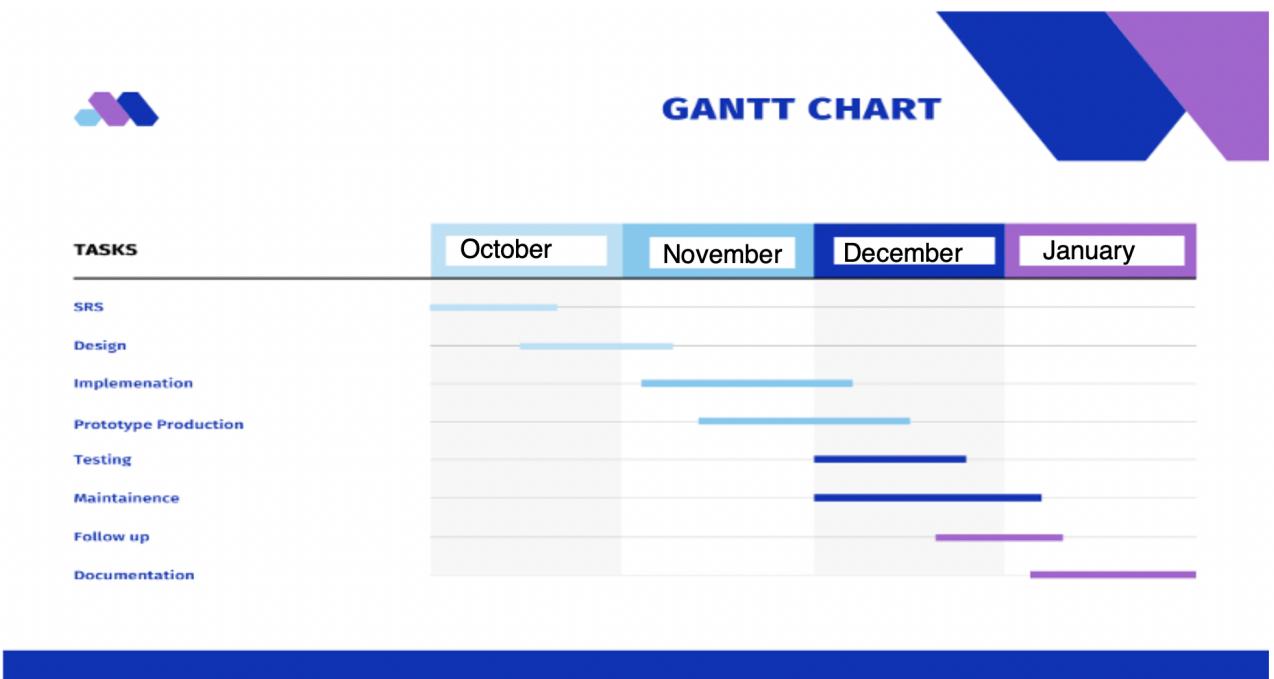
3.3 System Organization

Organization of a system is essential to consorting oneself in the dominance hierarchy. A self-sustaining system consists of entities from all walks of existence, managed by a dominant force of nature. This enables a compass towards being a sense of forward direction alongside thoughtful hindsight to the past. Guided by the beacon of a common value system, with the ever-lasting motive to conquer chaos, to restore tainted dignitaries, to recover what was lost and mend what was broken, can system organization be achieved.

System here is a web application for the students of Karnataka, who write CET exam to get admission in various colleges for their higher studies after their PUC. The system, which is a web application, helps students to know full details about the CET colleges, courses, cut-off, ranks in detail.

3.2 Implementation schedule (Gantt chart)

The figure 3.1 chart describes a schedule for implementing the project. The timespan is over a period of two months, with reasonable deadlines set for each task.



3.3 Language and platforms used

3.3.1 Language Used

1. *HTML*

- HTML and CSS is used to create frontend of the webpage,
- HTML is the standard markup language for creating Web pages.

2. *Server Query Language (MySQL)*:

- Server queries are carried out through a MySQL database for storing relevant data.
- Data of Airport Management is stored.

3. MongoDB:

- MongoDB is a source-available cross-platform document-oriented database program. Classified as a NoSQL database program, MongoDB uses JSON-like documents with optional schemas. MongoDB is developed by MongoDB Inc. and licensed under the Server-Side Public License

3.3.2 Platforms/IDE/Tools used:

1. Keynote:

- Keynote is a presentation software application developed as a part of the iWork productivity suite by Apple Inc. Version 10 of Keynote for Mac, the latest major update, was released in March 2020.

2. Gleek.io:

- Gleek.io diagram maker is freemium text-to-diagram tool for developers and software architects. It enables the visual design of database online, in the cloud and from any browser.

3. PowerPoint:

- PowerPoint is a popular presentation tool from Microsoft, used primarily in this project to implement the Gantt chart.

4. VS Code:

- Visual Studio Code is a source-code editor made by Microsoft for Windows, Linux and macOS. Features include support for debugging, syntax highlighting, intelligent code completion, snippets, code refactoring, and embedded Git.

3.4 Modules Implemented

There are five modules implemented in the developed system . The five modules are as follows –

- a. Login Open Page
- b. Predict Rank
- c. Predict College
- d. Predict Course
- e. Show Cut -off
- f. Show Trending Colleges

a. Predict Rank

Input – Users should enter marks in respective fields corresponding to different subjects

Output – Predict the rank

b. Predict College

Input – Rank, course, category

Output – Predict colleges for the given inputs

c. Predict Course

Input – Rank, college, category

Output – Predict various courses available.

d. Show Cut -off

Input – college, course, category

Output – show cut -off

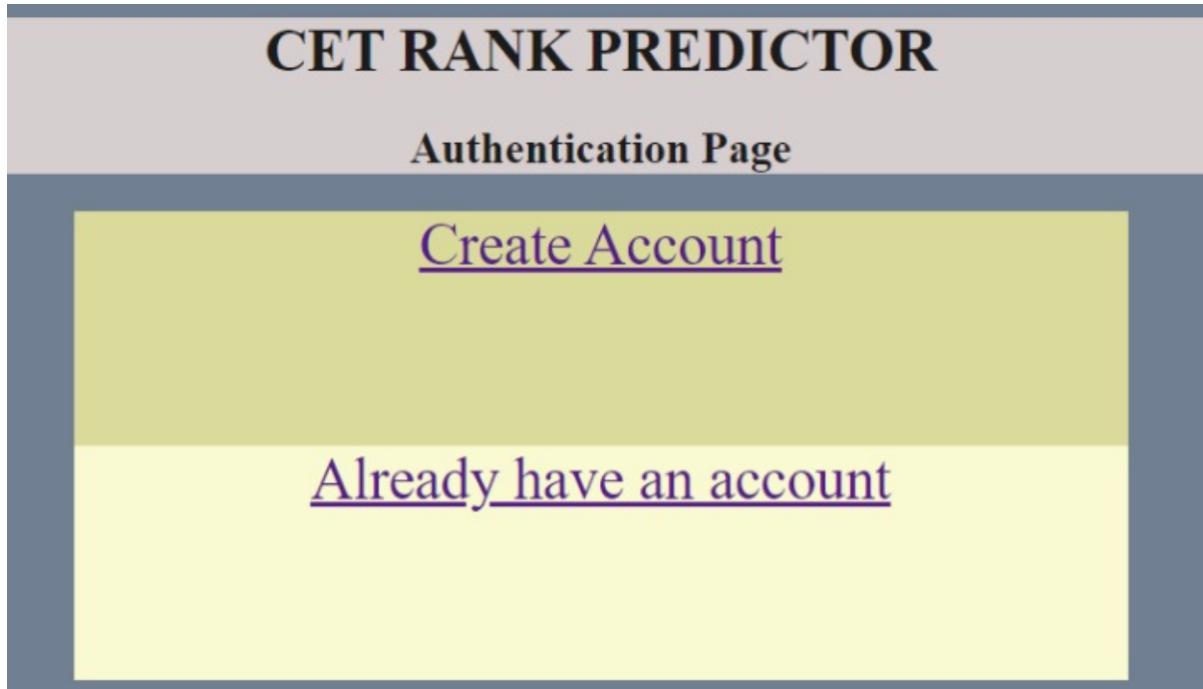
e. Show College Trends

Input – College, course, category

Output – Graph representation of trend

3.5 Snapshots and Executions

1. Login Page



2. Home Page



3.Predict Rank

ENTER MATHEMATICS MARKS	<input type="text" value="34"/>
ENTER PHYSICS MARKS	<input type="text" value="23"/>
ENTER CHEMISTRY MARKS	<input type="text" value="34 "/>

CET RANK PREDICTOR

PREDICT RANK

**The Predicted Rank based
on Marks Entered**

4100

[Predict College](#)
[Predict Course](#)

4. Predict College

CET RANK PREDICTOR

PREDICT COLLEGE

SELECT COURSE

ENTER CODE

SELECT CATEGORY

ENTER YOUR RANK

Student can get into this Colleges

- Islamia Institute of Technology Bangalore
- Ghousia Engineering College Ramanagara
- Dr.T.Thimmaiah Institute of Technology BANGARAPET -TQ kolar District
 - Kalpatharu Institute of Technology Tiptur
 - Tontadarya College of Engineering Gadag
 - Maratha Mandal Engineering College Belgaum
 - R.T.E Society's Rural Engineering College Hulkoti
- Sri Taralabalu Jagadguru Institute of Technology. Ranebennur
- Anjuman Engineering College Bhatkala, Uttar kannada Dist
 - Hira Sugar Institute of Technology Belagavi District,
 - Khaja Banda Nawaz University Kalburgi

5. Predict Course

CET RANK PREDICTOR

PREDICT COURSE

SELECT COLLEGE

R. V. College of Engineers ▾

ENTER CODE

6005

SELECT CATEGORY

IG ▾

ENTER YOUR RANK

6004

CET RANK PREDICTOR

PREDICT COLLEGES FOR SPECIFIED INFO

Student can get into this Courses in specified College

- Bio Technology
- Civil
- Chemical
- Electrical
- Elec. Inst. Engg
- Elec. Telecommn.
- Mechanical
- Aero Space Engg.

6. Know Cut -off

CET RANK PREDICTOR

SELECT COLLEGE

ENTER CODE

SELECT COURSE

ENTER CODE

SELECT CATEGORY

CET RANK PREDICTOR

KNOW CUTOFF

THE PREDICTED CUTOFF IS

(YEAR,CUTOFF)

(2020, 183)
(2019, 230)
(2018, 124)
(2017, 288)
(2016, 239)
(2015, 288)
(2014, 336)
(2013, 681)
(2012, 410)
(2011, 408)
(2010, 350)
(2009, 581)

7. Know College Trends

KNOW COLLEGE TRENDS

SELECT COLLEGE

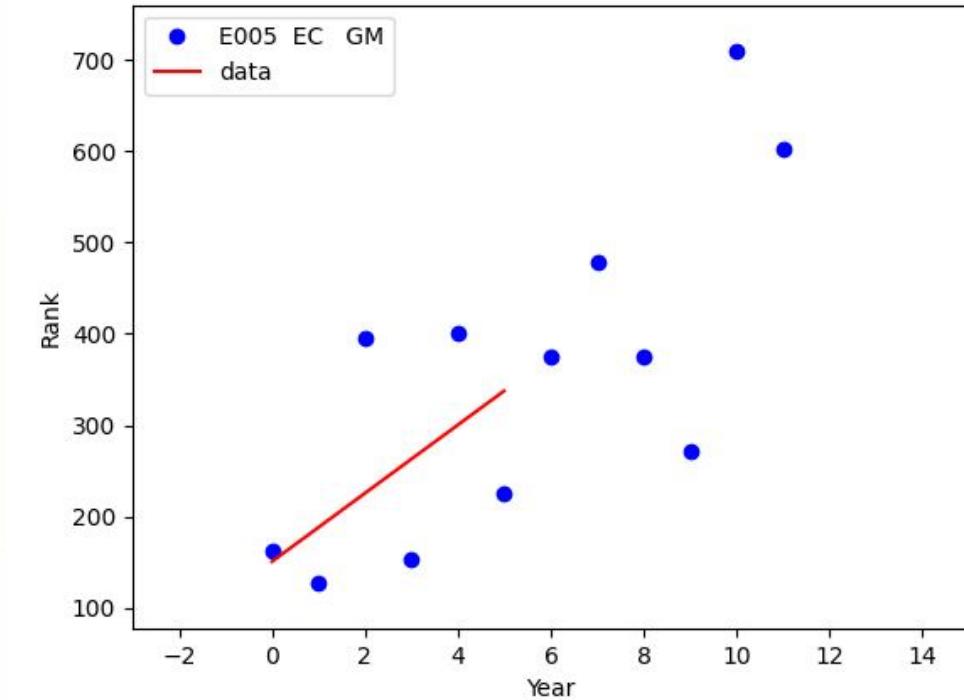
ENTER CODE

SELECT COURSE

ENTER CODE

SELECT CATEGORY

Figure 1



CET RANK PREDICTOR

PREDICT COLLEGES FOR SPECIFIED INFO

The Trend Of College is mapped to Graph and following conclusions are made

The predicted Cutoff is: 636
College or Course Trend is Steady

Chapter 4

Testing

4.1 Introduction

4.1.1 Purpose Of The Test Plan Document

The test plan document exists to formulate a comprehensive collection of testing methods, ensuring software that meets the expected quality output of the desired software. Testing is carried out as per the methodology charted out by the test plan document.

In this project, there are various views and screens; namely the login screen and register window, followed by the home screen with transaction view, search view and group view.

All these views have different functional elements, each of which have various decision paths that can be carried out by the user.

Decision paths can be egregious in consequences and introduce a crossroad point in a decision-making stream. I wandered and wandered, o where ye shall ponder for two score days on a road all alone: through alleys and twilight on a road with no turns.

The test plan must thus account for all these views and decision paths to obtain a comprehensive testing document

4.1.2 Functional Testing

Test planning is an invaluable asset to a database project. In this project, testing the functional requirements is essential to ensure that all the views are functioning as expected, while also ensuring that the expected functionality is delivered.

The project involves stock market analytics and implements three different screens, with decision paths within each screen such as buy/sell, search, text fields, change view, etc. These views must function effectively.

4.1.3 Non-Functional Testing

Non-functional requirements include testing a system's performance, reliability, scalability and usability. This project makes use of web scraping, which requires non-functional testing to ensure seamless functioning.

4.2 Test Suites

Test suite is a container with a set of tests to help testers execute and report the test status. It can take three states; namely Active, InProgress and completed.

A test case can be added to multiple test suites and test plans. After creating a test plan, test suites are created which in turn can have any number of tests.

Test suites are created based on the cycle or based on the scope. It can contain any type of tests, viz - functional or Non-Functional.

In this Project there are six main test suites with several test cases in each

1. Opening Page
2. Rank Prediction
3. College Prediction
4. Course Prediction
5. Cut-off Display
6. Trending Colleges Display

Test suite 1 : .Opening Functionality Page

Summary : This is when user access the website

Whenever user try to visit this website it should not give any error from the system implementation point of view.

Whenever many users trying to access the website at the same time it should work properly without any error.

Test suite 2 : Rank Prediction

Summary : User wants to predict his/ her rank based on their marks .

The rank predicted must be almost very near to the original rank. If we calculate rank and it should be comparable with the previous year ranks.

We have tested the predicted rank with the true rank and which is almost similar .

Test suite 3 : College Prediction

Summary : College prediction for the given rank for the user.

For the given rank , course , category it should show list probable colleges for the given rank he may get based on previous year cut – off.

We have tested the it predicted colleges with the true results and it is comparable with the predicted colleges.

Test suite 4 : Course Prediction

Summary : List of courses prediction for the given rank.

For the given rank , college , category , it shows the list of courses he may get in the selected college .

The courses shown are tested with true result.

Test suite 5 : Cut – off Display

Summary : Cut off display for the given input for the user.

For the user input and selected options , it will show the cut off of that particular year.

We have tested the cut – off with the previous year cut off and displayed cut off both are comparable and true.

Test suite 6 : Trending Colleges Display

Summary : Displaying trending colleges for the given course .

For the given course , it will show the trend of the college with graph so that user can guess the course and college and he can select based on it .

4.2 Test Cases

4.2.1 Get Rank

Test Case scenario ID	Get Rank		Test Case ID	UserReg-1B			
Test Case Description	Negative test case			Test Priority	High		
Pre-requisites	NA			Post Requisites	NA		
Test execution steps: -							
S.no	Action	Inputs	Expected output	Action output	Test medium	Test result	Test comment
1	Enter Marks out of 60	45	Predict Rank	Predict Rank	Chrome	Pass	Works as expected
2	Entered marks above 60	80	Enter the marks out of 60	Enter the mark out of 60	Chrome	Pass	Works as expected
3	Enter Invalid marks	jasdhja	Enter valid marks	Enter valid marks	Chrome	Pass	Works as expected
4	One filed unfilled	—	Fill required fields	Fill required fields	Chrome	Pass	Works as expected

4.2.3 Know Cut – off

Test Case scenario ID	Know Cut - off		Test Case ID	UserReg-1B			
Test Case Description	Negative test case		Test Priority	High			
Pre-requisites	NA		Post Requisites	NA			
Test execution steps: -							
S.no	Action	Inputs	Expected output	Action output	Test medium	Test result	Test comment
1	Enter valid year	2021	Show Cut off	Show Cut off	Chrome	Pass	Works as expected
2	Enter Invalid year	2023	Enter valid year	Enter valid year	Chrome	Pass	Works as expected
3	Enter Invalid year	jasdhja	Enter valid year	Enter valid year	Chrome	Pass	Works as expected
4	One filed unfilled	—	Fill required fields	Fill required fields	Chrome	Pass	Works as expected

4.2.4 Predict College

Test Case scenario ID		Predict College		Test Case ID		UserReg-1B	
Test Case Description		Negative test case		Test Priority		High	
Pre-requisites		NA		Post Requisites		NA	
Test execution steps: -							
S.no	Action	Inputs	Expected output	Action output	Test medium	Test result	Test comment
1	Enter valid rank	75	Predict College	Predict College	Chrome	Pass	Works as expected
2	Enter Invalid rank	skjjhkuh	Enter valid rank	Enter valid rank	Chrome	Pass	Works as expected
3	Enter Invalid course id	jasdhja	Enter valid course id	Enter valid course id	Chrome	Pass	Works as expected
4	One filed unfilled	—	Fill required fields	Fill required fields	Chrome	Pass	Works as expected

4.2.5 Predict Course

Test Case scenario ID	Predict Course		Test Case ID	UserReg-1B			
Test Case Description	Negative test case			Test Priority	High		
Pre-requisites	NA			Post Requisites	NA		
Test execution steps: -							
S.no	Action	Inputs	Expected output	Action output	Test medium	Test result	Test comment
1	Enter valid rank	125	Predict Course	Predict Course	Chrome	Pass	Works as expected
2	Enter Invalid rank	lhgjad	Enter valid rank	Enter valid rank	Chrome	Pass	Works as expected
3	Enter Invalid college code	jasdhja	Enter valid college id	Enter valid college id	Chrome	Pass	Works as expected
4	One filed unfilled	—	Fill required fields	Fill required fields	Chrome	Pass	Works as expected

4.2.6 Know College Trends

Test Case scenario ID	Know College Trends		Test Case ID	UserReg-1B			
Test Case Description	Negative test case			Test Priority	High		
Pre-requisites	NA			Post Requisites	NA		
Test execution steps: -							
S.no	Action	Inputs	Expected output	Action output	Test medium	Test result	Test comment
1	Enter valid college , course	CS	Display Trending Colleges	Display Trending Colleges	Chrome	Pass	Works as expected
2	Enter Invalid course id	lhgjad	Enter valid course id	Enter valid course id	Chrome	Pass	Works as expected
3	Enter Invalid college code	jasdhja	Enter valid college id	Enter valid college id	Chrome	Pass	Works as expected
4	One filed unfilled	—	Fill required fields	Fill required fields	Chrome	Pass	Works as expected

Chapter 5

Conclusion

Successful integration of all modules in a singular front-end interface was achieved in the KCET College/Course Predictor. Four key components, namely the relational database MySQL, NoSQL database (MongoDB), Node.js and front-end (HTML, CSS) were seamlessly integrated as one coherent system.

Software engineering methodologies were used to bring the project together. A literature survey facilitated in developing the problem statement. From there, software engineering tools were used to draw diagrams such as block diagrams, architecture diagrams, etc. to establish the static and dynamic elements of the platform. A prototype was developed in accordance with the plan, which underwent rigorous testing prior to the final release.