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PROJECT SYNOPSIS (CS321)

ScholarsApp- College Forum Website and Application

A report submitted in partial fulfillment of the requirement for the award of

The degree of

BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND ENGINEERING

Submitted to:

Dr. Neeraj Kumar Pandey

Designation: Assistant Professor

Submitted by:

Mayank Singh: 190102270

Hemant Neupane: 190102269

Aryan Goel: 190102271

Gurmeet Kaur: 190102272

SCHOOL OF COMPUTING

DIT UNIVERSITY, DEHRADUN

(State Private University through State Legislature Act No. 10 of 2013 of Uttarakhand and approved by UGC)

Mussoorie Diversion Road, Dehradun, Uttarakhand - 248009, India

CANDIDATES DECLARATION

In this regard I affirm that the work presented in the Project Report, entitled **ScholarsApp**, submitted to the DIT University in the partial Fulfilment of the requirement for the award of the Degree of Bachelor of Technology, is an authentic record of our work carried out from 20 August,2021 to 19 April,2022 under the direction of Dr. Neeraj Kumar Pandey.

ACKNOWLEDGEMENT

We would like to express our gratitude to everyone who has contributed to the success of this project. We are thankful to all the individuals who believed in the project and motivated us to work hard. The entire group is pleased for coordinating and supporting each other all through. Everybody did everything they can for gain ground in the undertaking.

We are grateful to Dr. Neeraj Kumar Pandey, our project guide, for his guidance and support in moving our project forward. We are grateful to him for devoting his valuable time and attention to us, as well as for providing us with a methodical approach to completing the project on time.

Mayank Singh: 190102270

Hemant Neupane: 190102269

Aryan Goel: 190102271

Gurmeet Kaur: 190102272

ABSTRACT

This synopsis report contains all of the details and concepts for our project, ScholarsApp – College Students Forum Website and Application. We attempted to present our idea and topic more clearly in this report. This report describes all of the essentials of our project, such as features, system requirements, and methodology. In today's world, website and application development is critical. Our lives are inextricably linked to and reliant on applications and websites such as WordPress, Quora, WhatsApp, and Zomato. Blogs have grown in popularity as a type of website. They are gaining popularity and are used in a variety of ways, including personal/professional blogs, multi-author blogs, and microblogging. Our project was motivated primarily by their popularity and widespread use.

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Chapter 1
Introduction

We live in a technological and communication-driven era. In today's world, the Internet serves as a global hub for not only information and knowledge, but also for ideas, thoughts, and beliefs expressed through websites and web pages. As a result, websites have become indispensable. Forums are the most well-known and rapidly growing of these sites.

A forum is a place where users share ideas, ideas, or help with texting. Forums are different in conversation because they are almost never live and can be read at any time. Frequently updated website or webpage used for personal or professional reasons. The forum typically includes information on a wide range of topics, including technology, news, education, science, business, sports, community, entertainment, and events. In today's world, these forums play an important role, but they are also required to share ideas and thoughts that have previously been expressed by a diverse group of people from various walks of life.

OBJECTIVE

The primary goal of our project is to develop a website that makes the process of creating a forum simple and easy. For our project, we are creating a responsive online forum website and chatting application that will allow users to easily create and share ideas while also making them available to a large audience. Using the most up-to-date technologies, our project will incorporate the concepts of web development, application development, and machine learning.

1. Web Development

Web packages, additionally called net development, are the advent of effective net packages. Examples of net packages are social networking web sites which includes Facebook or trade web sites like Amazon.

The true information is that getting to know net improvement isn't that difficult. In fact, maximum argue is a first-rate manner to put in writing code for novices to learn. Easy to set up, get immediately outcomes and has lots of on-line schooling available.

Many human beings are getting to know to go into internet codes due to the fact they need to create a Facebook following or get a activity withinside the industry. But it's also an awesome preference in case you simply need lots of coding entry, due to the fact it's far very clean to get started. It does not be counted in case you are searching out a activity or simply need to discover ways to code, discover ways to enhance the internet for yourself. It is one of the wisest choices you've got ever made.

Web Development Overview

There are huge classes of net development - pre-cease development (additionally referred to as consumer facet development) and back-cease development (additionally referred to as server facet development).

Previous improvement refers back to the buildings that a person sees after they down load an internet application - content, layout and the way you have interaction with it. This is finished with the assist of 3 codes - HTML, CSS and JavaScript.

HTML, quick for Hyper Text Markup, is a unique code for ‘marking ’textual content to transform it into an internet web page. Every website at the internet is written in HTML, and may be the spine of any internet application. CSS, quick for Cas-cading Style Sheets, is a code putting fashion for internet web page pages appearance. CSS handles the internet cosmetics side. Finally, JavaScript is a broadly used language script to feature capability and hyperlinks to internet pages.

Back-quit improvement controls what occurs at the back of internet utility scenes. The again quit normally makes use of the database to generate the front quit.

2. Flutter

By and large, making a portable application is a troublesome and testing task. There are numerous systems accessible for building a portable application. Android offers a Java-based traditional structure and iOS offers an Objective-C/Swift language-based conventional system.

Nonetheless, to construct a framework that upholds both OS, we want to encode two unique dialects utilizing two distinct systems. Assisting with conquering this has been truly challenging, there are portable structures that help both OS. These systems depend on a straightforward HTML-based half and half application (which utilizes Human User HTML and JavaScript ideas) in unambiguous language structure (making it challenging to make an interpretation of code into customary code).

Whether straightforward or perplexing, these designs generally have numerous downsides, perhaps the greatest impediment being their sluggish activity.

Flut For this situation, Flutter - a straightforward independent capacity with superior execution in view of Dart language, gives elite execution by furnishing the UI straightforwardly with the application screen and not in the standard structure.

Ripple likewise gives numerous adjustable gadgets (UI) to make an advanced application. These gadgets are intended for a versatile climate and planning an application utilizing gadgets is basically as simple as HTML planning.

In particular, the Flutter application itself is a gadget. Shudder gadgets additionally support animation and body development. Application idea depends on working frameworks. The gadget can be molded. By altering the condition of the gadget, Flutter will automatically look at the situation with the gadget (old and new) and give the gadget just the important changes rather than re-delivering the whole gadget.

Flutter Features

The Flutter framework provides the following features for developers -

- Framework A modern and functional framework.
- It uses Dart program language and is very easy to read.
- Development Rapid development.
- Good communication and water points.
- Uses the same UI for most platforms.
- Application for high performance.

Chapter 2
Project Description

2.1. Special features

- **Wall**

Wall is the first profile area where ScholarApp user content is displayed. Allows the sending of text messages, short or temporary notes, so that the user can see them while displaying the time and date the message was written. The User Wall is apparent to anybody with the capacity to see their full profile, and Wall's presents on companions and associates show up in the User News Feed. Researcher ScholarsApp permits clients to present connections on the Wall.

- **Comments**

Nice comment! They say your readers read and share your content. You will need a comment system that allows you to manage and protect your spam posts. You will be able to engage your readers and help answer any additional questions they have after reading your post without worrying that your post will be blocked by spam or derogatory comments.

- **Dynamic Timetable**

A plan is an expert reference report that plainly shows how school re-sources, like educators and homerooms, collaborate with understudy timetables and school plans, as well as the times of the week. The reason for school programs and vital arranging is done in numerous ways. To start with, plans give understudies, teachers, guardians, and managers an unmistakable image of what's going on in the homeroom at some random time. Second, schedules assist with expanding school assets like homeroom participation, educator accessibility, and asset conveyance.

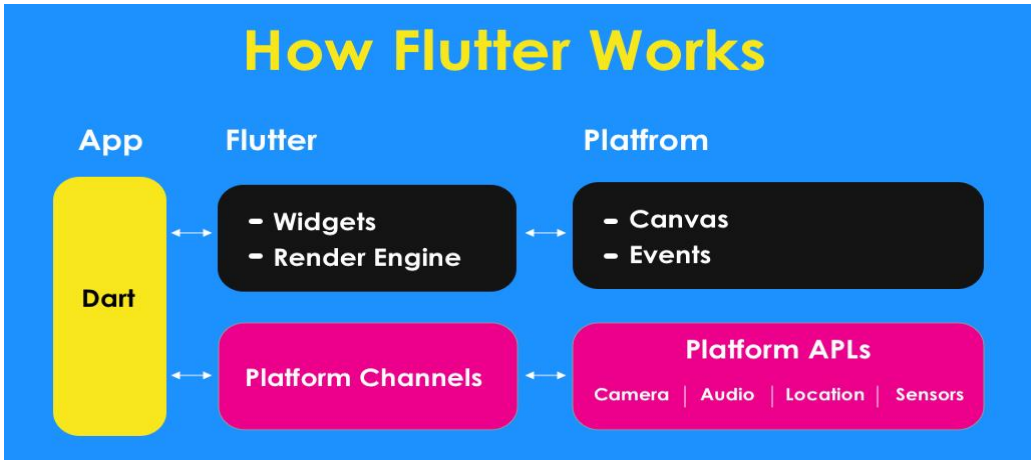
Third, plans add design to the educational system to put forth composing objectives.

- **Groups**

Groups are used for collaboration and allow for discussions, events, and other mathematical activities. They are a way to allow more people to come together online to share information and discuss specific topics. They are increasingly being used by clubs, companies and community-based organizations to engage with stakeholders, be they community members, employees, members, service users, shareholders or customers.

- **Texting**

ScholarsApp also allow you to send personal and direct messages. In these chats you can send photos, posts, stickers and voice messages.



2.1 Overall system block diagram

Initial step is to develop application with the help of flutter which will help to link the following steps in it.

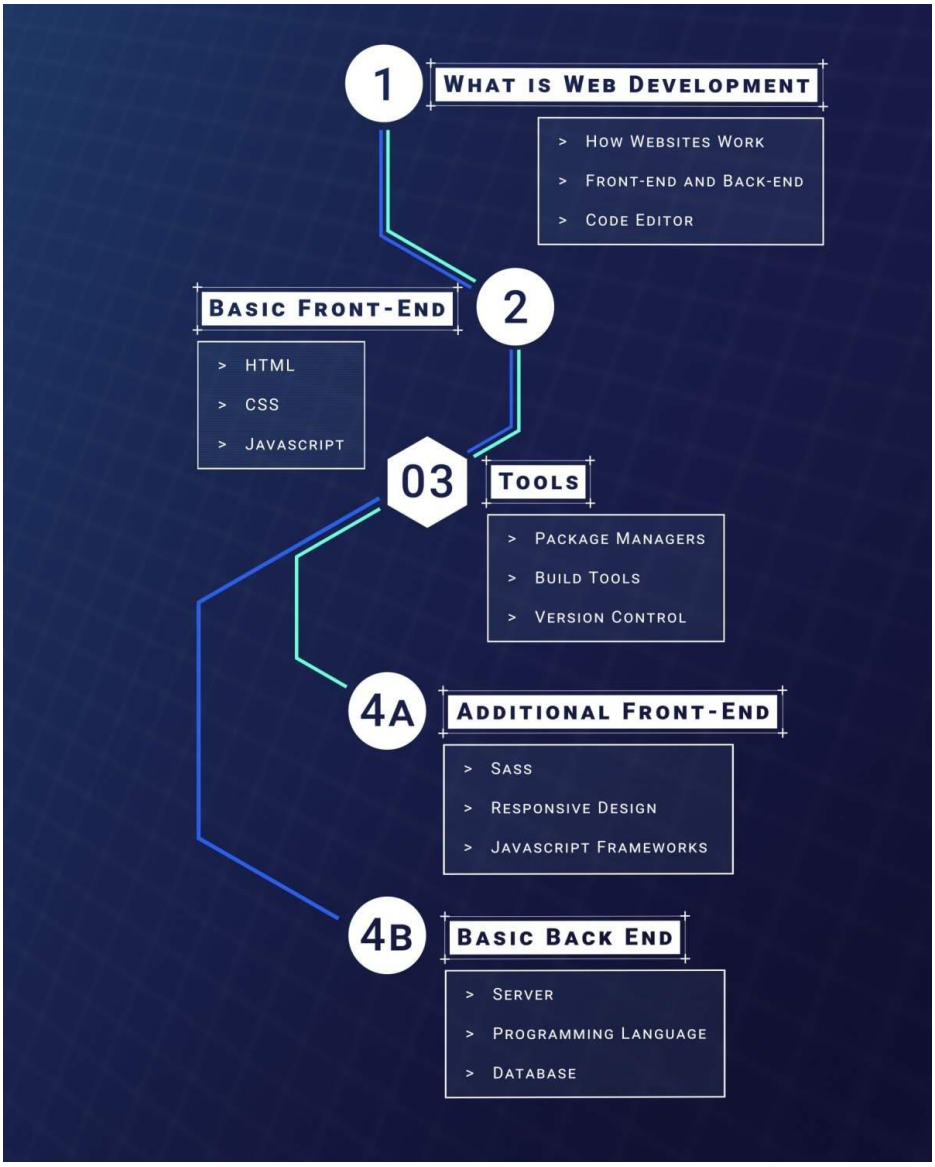


Fig.2.2 Basic diagram of web development

Methodology

The principle highlights of this framework are, Dynamic Timetable , which can be altered by instructors at whenever and updates will be shipped off the understudies of that class, An Inter-dynamic divider , every client can post their ventures and other intelligent stuff, Spam Detection in Comments to sift through harmful remarks and posts, Groups , that can be made by educators or understudies for classes or undertakings according to their requirements, Instant Messaging highlight, to cooperate with instructors and schoolmates. To improve client experience, a proposal framework for Machine Learning is carried out. The accompanying elements will be executed as Website and an android application. Website and android will be incorporated for client similarity.

For frontend	HTML5, CSS2.1, JavaScript, Angular framework
For Backend	Java based framework
For Database	Firebase, SQL
For App development(IOS,Andriod)	Flutter

Table 2.1

Our project initiates by creating user interface using HTML, CSS, JavaScript and linking them appropriately. Tools will be added to edit, create and update posts created by user; we will bind using Angular framework. For backend we use Java based framework to develop API’s that will fetch data from database and serve response to user interface. We store data using Firebase DB. Various functionalities will be

added using tools and checklists will be done to create an efficient and user-friendly website. We will perform Functionality Tests, Performance tests and various other tests in the process and identify bugs. We will integrate features with the App and make it mobile compatible. App will be created using Android studio and functionalities will be added based on Website.

CONTRIBUTION OF EACH TEAM MEMBER

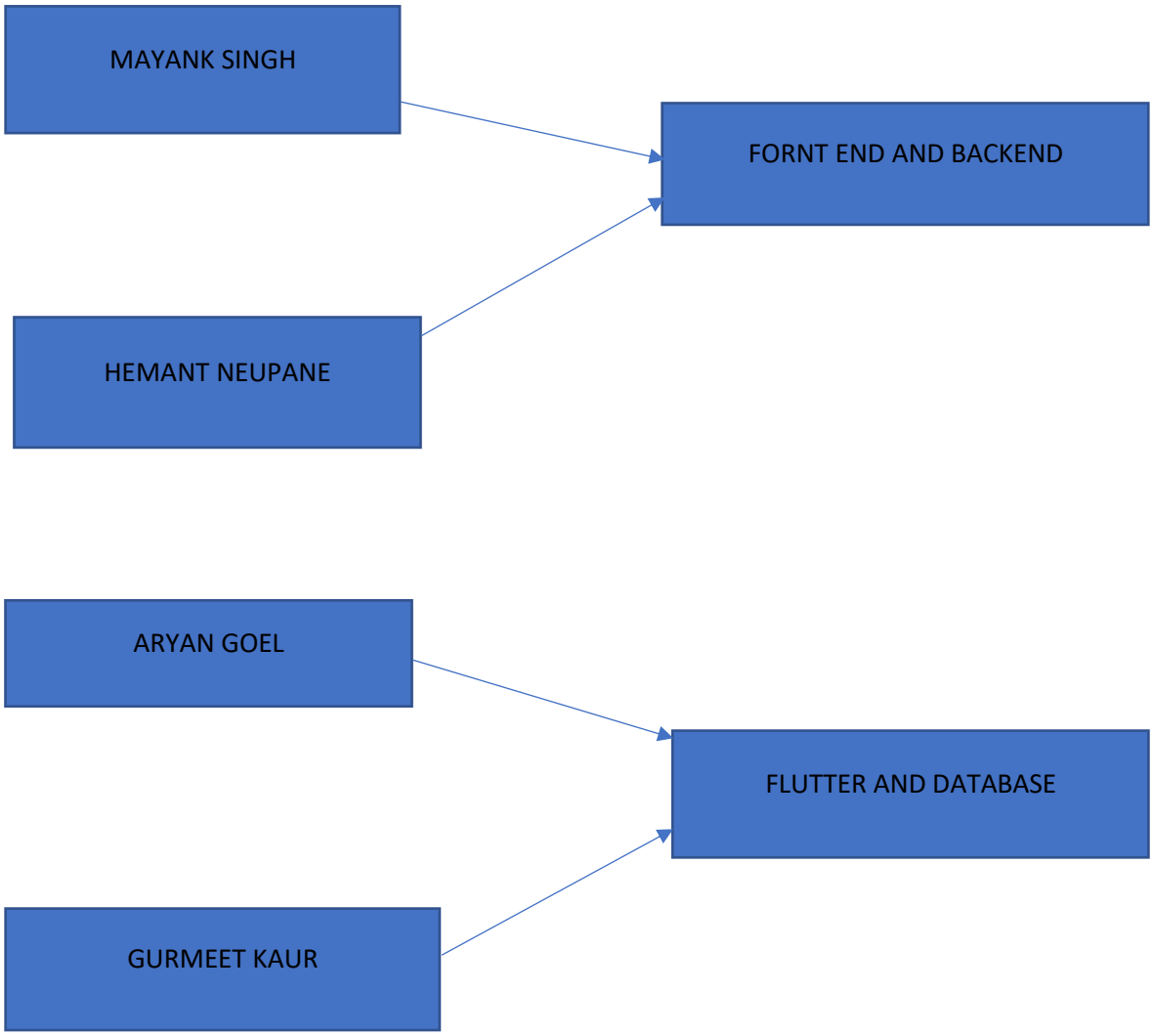


Fig.2.3 Role Involvement

Chapter 3

Requirements for Development

System Requirements for development of Project

Hardware Requirements

• Microsoft Windows 7/8/10

• 64-bit environment and high-er versions, including master branch. You can integrate older types into 32-bit systems. The same applies to iOS Development.

• At least 250GB of free disk space for scanning and an additional 150 GB to build. If you are doing a lot of building, you need more space.

• At least 4 GB of available RAM is required, but Google recommends 16 GB.

• 1280x800 screen resolution.

Software Requirements

- Android OS and iOS app
- Website
- Material structure
- 1 GB of Android SDK.
- For Android 8.1 (API level 27) and advanced system images, the touch web camera must have 720p frames.
- Java Development Kit (JDK)7.
- Stable net connection.

Chapter 4 - Implementation Modules and Screen Shots

FLUTTER

Flutter is a UI shortcut toolbar designed to allow code usage on all apps such as iOS and Android, while allowing apps to interact directly with sub-platform services. The goal is to allow developers to deliver the most efficient applications that feel natural on different platforms, the difference between the emails where they exist while sharing as much code as possible.

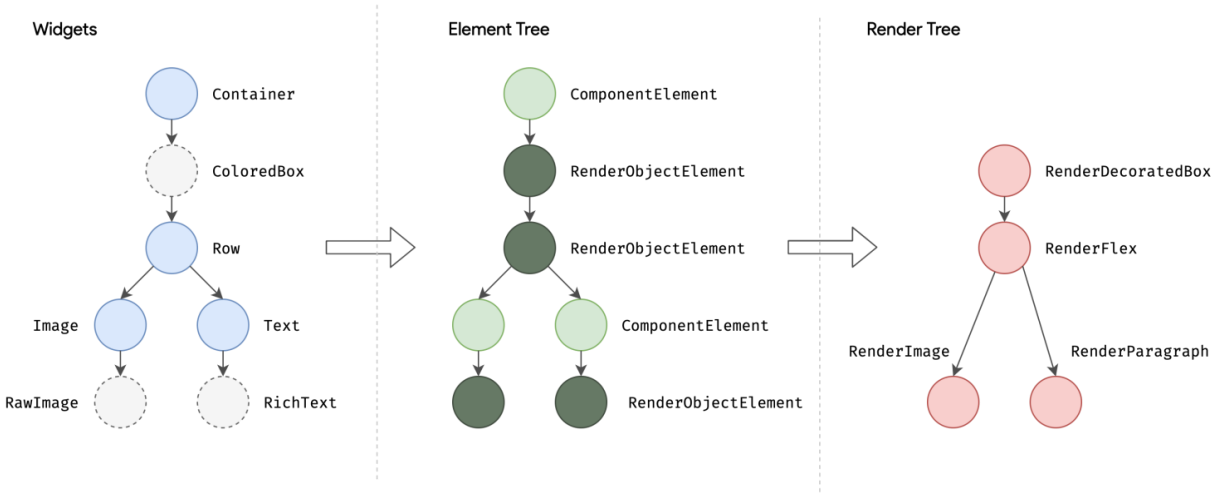


Fig 4.1 Flutter architectural overview

HTML

HTML is a common language for Web pages. With HTML you can customize your Website.

```
<! DOCTYPE html>

<html>

<head>

<title> Page Title </title>

</head>

<body>

<h1> This Article </h1>

<p> This is the category. </p>

</body>

</html>
```

Result

This is a Heading

This is a paragraph.

Fig 4.2

CSS

CSS is the language we use to create HTML document style.CSS defines how HTML objects should be displayed.

```
body {
  background-color: lightblue;
}

h1 {
  color: white;
  text-align: center;
}

p {
  font-family: verdana;
  font-size: 20px;
}
```

Result

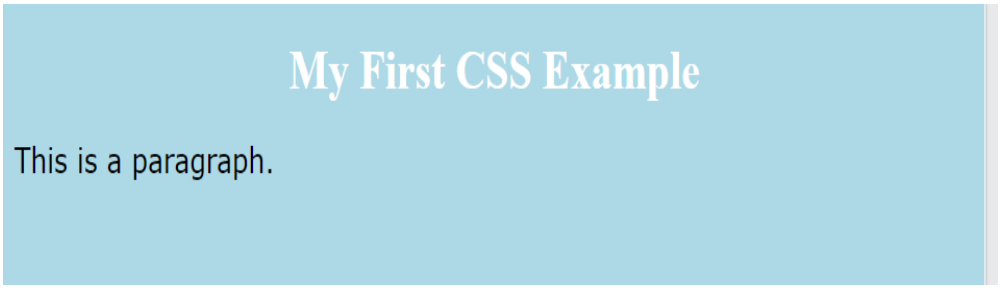


Fig 4.3

Progress done so far

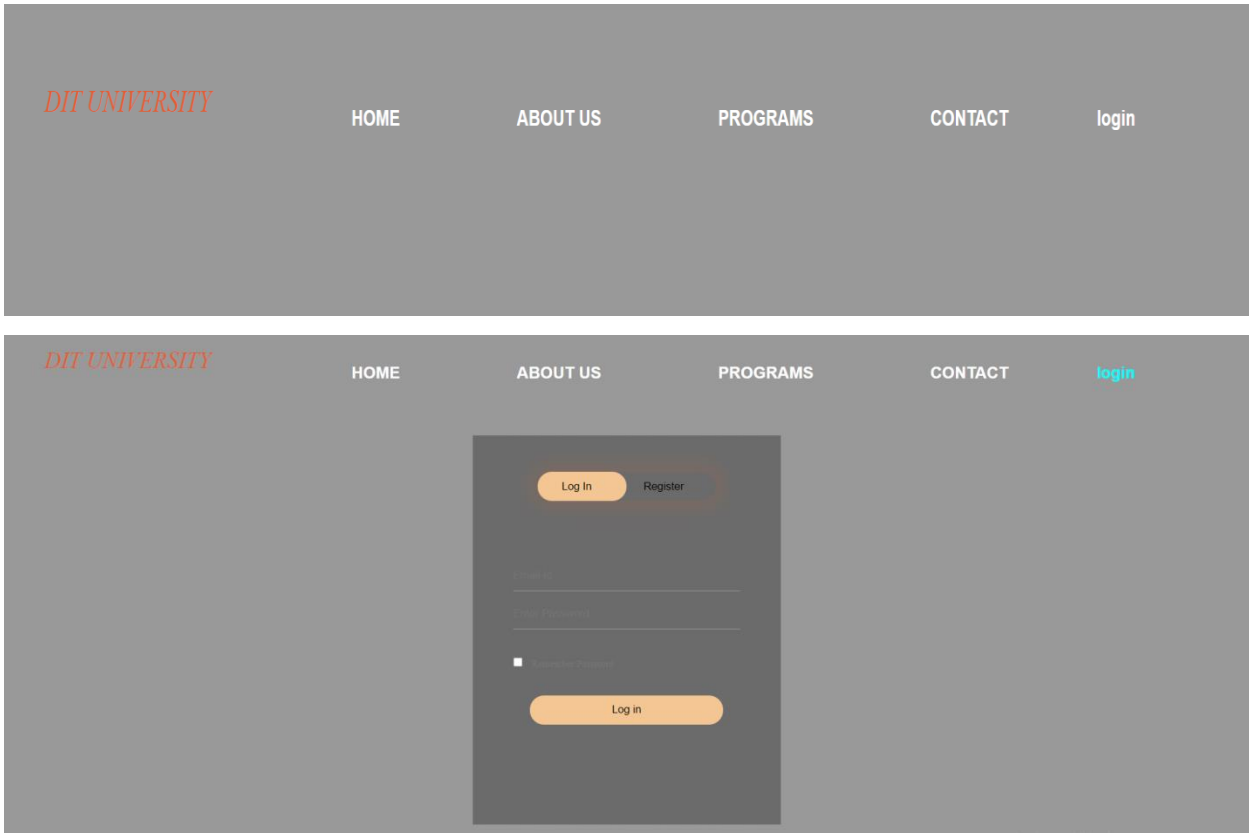


Fig 4.4 Front end

Chapter 5

Adopted Technology

REACT HOOKS

Hooks are a new functionality introduced in React 16.8. It empowers you to utilize state and other React highlights without composing a class. Hooks are capacities that permit work parts to guide into React state and lifecycle capacities. It doesn't work in class.

Hooks is in reverse viable, and that implies it contains no breaking changes. Besides, it doesn't supplant how you might interpret React ideas.

WHEN SHOULD YOU USE A HOOKS?

I am writing a practical aspect and i need to feature some nation to it, first I do it through changing it to a category. but you can now do this using hook inside existing functional additives.

HOOKS RULES

Hooks are like JavaScript capacities; however, you should adhere to these two guidelines while utilizing them. Snares decide guarantees that all of a part's stateful sound judgment is apparent in its stock code. The guidelines are as follows:

1. **Only use Hooks at the highest level**

   Hooks are not called in loops, conditions, or nested functions. Hooks should be used at the top level of React functions. This rule ensures that every time the component is rendered, the hooks are called in the same order.

2. **Only use Hooks in React functions**

You cannot call hooks from regular JavaScript functions. Instead, you can call hooks from functional React components. Hooks can also be called from custom hooks.

REACT HOOKS PRE-REQUISITES

- Node version 6 or higher
- NPM version 5.2 or higher
- The create-react-app tool, which is used to run the React App.

HOOKS EFFECT

impact hooks permit useful additives to perform aspect results (moves). It does now not use bean lifecycle strategies available in elegance beans. In other words, impact hooks are equal to componentDidMount() , componentDidUpdate() , and componentWillUnmount() lifecycle methods.

facet consequences have common features which the maximum web packages need to in step with-form, such as:

- Maintaining the DOM,
- Obtaining and using data from a server API,
- Creating a subscription, etc.

REACT CONTEXT API

The React Context API permits you to effectively create international variables that your React software can bypass in. that is an alternative to "drilling props" or moving props from grandparent to baby, discern, and so forth. Contexts also are touted as a less complicated and lighter approach to handling kingdom the use of Redux.

Context API is a (kind of) new function delivered in version sixteen.three of React that lets in one to proportion country across the entire app (or part of it) lightly and simply.

React Context API: How it works?

React.createContext() is all you want. It returns a purchaser and a provider. Provider is a part that as it's names shows affords the nation to its youngsters. it's going to preserve the "keep" and be the determine of all of the additives that might need that save. customer as it so happens is a component that consumes and uses the country. more facts can be discovered on React's documentation page.

REDUX PATTERN

Redux is a pattern and library for managing and updating application state, using events called "actions". - Redux Documentation

Redux is wonderful for not only describing events, but also for guiding the flow of events using predictable event tracking.

What Redux Pattern is not

Flux patterns or Flux architectures are not to be confused with Redux and Redux patterns. The concept of "one source source" is the primary difference between these two models.

Stores is the main solid wellspring of data about application wellbeing. In Flux, stockpiling can be shared and characterized across numerous areas in an application. Involving theRedux as a solitary, believed source combines state and occasions in a single spot to more readily keep up with and work on your applications. This single

area to control your application is one of the key contemplations while planning your application's design and adaptability.

When do we use the Redux Pattern?

In a perfect world, Redux pattern to be utilized for parts of the application that offer state. The following are a couple of different interesting points while choosing to utilize the Redux pattern:

- Application Scalability
- Frequency of State Changes
- Complexity of State Changes and Logic

BASIC CONCEPT OF FLEXBOX

The Flexible Box module, ordinarily alluded to as the flexbox, was created as an uneven structure model and is a method for spreading the space among visual and visual parts and give strong arrangement abilities. This article supportive of vides an outline of the primary elements of flexbox, which we will investigate in more detail all through the review.

At the point when we characterize a flexbox as one-layered, we are alluding to the way that the flexbox handles the development of each side in turn, either in lines or segments. This can measure up to a two-sided CSS lattice structure model, which controls sections and lines all the while.

Two Flexbox Axes

While working with flexbox, you want to contemplate two hub: the primary pivot and the contrary hub. The fundamental pivot is characterized as a flex direction property and the operation posited hub runs straight. All that you do with flexbox alludes to these tomahawks, so it's great to comprehend how it functions all along.

Main Axes

The main axis is defined by a flex-direction, which has four possible values:

- Row
- Row-Reverse
- Column
- Column-Reverse

When you select Row or Rotate Line, the main axis runs along the line next to the line.

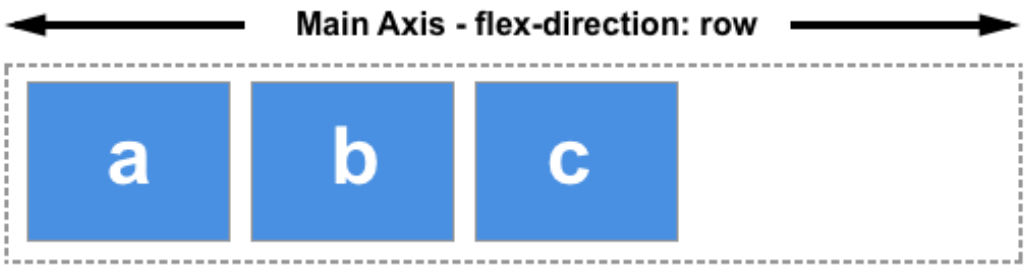


Fig 5.1 Flex-row

Select a column or column-reverse and your main axis will work from the top of the page to the bottom - on the side of the block.

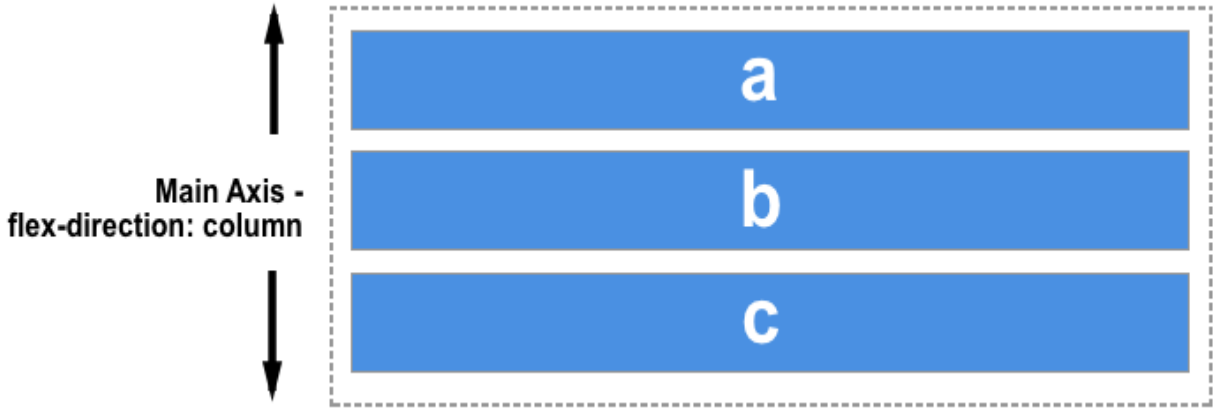


Fig 5.2 Flex-column

Start And End Lines

Another important point to understand is that flexbox does not think about document writing mode. In the past, CSS focused on horizontal writing and writing from left to right. Modern structural methods include different writing styles, so it is no longer possible to assume that the text lines will start in the top left corner of the document and go to the right, and that new lines will appear below other lines.

You can learn more about the relationship between flexbox and specification of writing mode in the next article. However, the following definition helps explain why we do not speak left and right, up and down when describing a direction moving object.

The headstock line is on the left and the far right end.

Fig 5.3 Flex start and end lines

Over time, it will become natural to think in terms of start and end rather than left and right, and it will help when working with other layout methods like CSS Grid Layout that follow the same pattern. Start and End Lines

FIREBASE'S FIRESTORE REALTIME DB

- **Use Cloud Firestore with Firebase Realtime Database**

You can utilize both the Firebase Realtime Database and Cloud Firestore in your application, and utilize every site arrangement relying upon your requirements. For example, you can use the Real-Time Database Support as described in Creating Availability in Cloud Firestore.

- **Firestore vs. Realtime Database**

A data storage website is an essential condition for improving all applications such as desktop, mobile, and web applications. You require data storage that can both store and manage data so that all applications can access the same information. Firebase offers two services: Firestore and Firebase Realtime Database. These databases are cloud-based web-based solutions that enable real-time data synchronization for customers. d Fire Department.

- **Cloud Firestore**

Firestore is a contemporary database for mobile app development. In terms of features, query performance, and scalability, Cloud Firestore is superior to Realtime Database. Cloud Firestore is a scalable and adaptable NoSQL cloud database. Data is stored and synced for client and server development. On Google Cloud Platform and Firebase, it is used to create mobile, web, and server applications.

- **Realtime Database**

This is the very first Firebase location. This solution works best for mobile applications that require low latency and real-time customer synchronization. Firebase Realtime Database is a cloud-based database that stores data in the JSON format. Each connected client receives real-time data sync. Let's look at how Firestore differs from the Realtime website.

Let's look at the distinctions between Firestore and Realtime databases.

Fig 5.4

Cloud Firestore is a website that many developers recommend when starting a new project. Cloud Firestore adds new features, functionality, and robustness to its infrastructure, which is designed to support the most powerful features in future releases.

The factors that make the two database solutions comparable are:

Fig 5.5 Factors

FIREBASE HOSTING

Web apps, static and adaptable content, and microservices may all be hosted on Firebase in a quick and secure manner. Firebase Hosting is web hosting content development engineer. With one command, you can quickly feed web applications and deliver static and dynamic content to a global content delivery network (CDN). You can also integrate Firebase Hosting with Cloud Operations or Cloud Run to create and host microservices in Firebase.

How does it work?

Hosting Firebase is designed for modern web developers. Websites and applications are powerful forever. Assuming you are sending a straightforward page visit page or a complicated moderate Web application (PWA), facilitating gives framework, highlights, and instruments for arrangement and the board sites and applications.

Firebase CLI utilizes Local Directory on a PC to appropriate documents on a host server. As well as giving static substance, you can utilize Firebase cloud usefulness

or utilize the cloud to store dynamic substance and put more modest assets on your site. Everything content is given by means of a SSL association from the closest servers on a worldwide CDN.

You can likewise survey and check for changes prior to distributing. The Firebase group of neighborhood emulators permits you to imitate your application and server assets from privately facilitated URLs. You can likewise share changes from the transitory pre-view URL and set up GitHub joining to make it simpler to copy during up-grades.

Firebase facilitating offers basic setup choices to make complex PWAs. You can undoubtedly modify client-side URLs, set your points, and give nearby satisfied.

To serve your substance, Firebase offers a few space and subdomain choices.

• Of course, all Firebase projects have free subdomains in the web.app and fire-baseapp.com spaces. These two locales give a similar dispersed content and arrange-ment.

• Assuming you have related locales and applications that serve different substance yet utilize a similar Firebase project assets (e.g., you have a blog, administrator board, and public application), you can make numerous destinations.

• You can interface your own area name to your Firebase Hosting account.

Firebase will naturally produce SSL authentications for your areas as a whole, guar-anteeing that all of your substance is served safely.

FIREBASE GOOGLE AUTHENTICATION

The client ID is expected by most of applications. With client ID information, the app can securely store user data in the cloud and provide the same custom feeling to all user devices.

Firebase Verification provides back-up service, SDKS EasyToSE SDK, and ReadI-made UI libraries for authorizing users in the app. Supports passwords, phone numbers, and reputable personal vendors as well as certificates like Google, Facebook and Twitter.

Because Firebase authentication is tightly integrated with other Firebase services and makes use of industry standards like OAuth 2.0 and OpenID connections, you can quickly integrate it from custom backdrops.

How does this work?

In order to register a user with your application, you first receive verification details from the user. The user's email address and password, as well as the integrated ID provider's OAuth token, can be used as credentials. Then, using the Firebase Authentication SDK, send that information. Background service then verifies that information and returns feedback to the client.

Fig 5.6 Firebase

When you log in successfully, you can access basic user profile information and control user access to data stored on other Firebase products. You can also use the verification token provided to verify user identity on your background service. Look By default, authorized users can read and write data to and from a real-time Firebase and Cloud Storage website. You can control the access of these users by setting up a Real-Time Firebase Web site and cloud storage rules.

Chapter 6

Conclusion

The purpose and objective of our project is to make a scholar app which will help students to access most of the facility of university virtually like getting admission, knowing attendance, viewing results and so on. We strive to achieve our goal, making it possible to provide online information at all college-organized events with their student details and the name of the college. Allows the user to manage large amounts of data in a friendly, error-free environment. It will make it easier to operate.

Refrences :-

1-W3 school

2- encyclopedia

3- You-Tube

4- Javapoint

Project and Candidates Details

The purpose and objective of our project is to make a scholar app which will help students to access most of the facility of university virtually like getting admission

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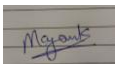
Semester and Section	5th Semester, B.Tech. CSE-B
Project Title and ID	ScholarsApp – College Forum Website and Application
Project Guide	Dr. Neeraj Kumar Pandey

,knowing attendance, viewing results and so on.

Team Member Names with Signature (Maximum 4)-

Mayank Singh  Hemant Neupane 

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