Web Technologies Assignment

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PESIUG21CS091

Section: B

AngularJS vs ReactJS vs NodeJS

AngularJS:

Launched in 2009 by Google, AngularJS is an open source client-side web framework. It assists AngularJS developers to resolve issues in single page web application containing a shell page with multiple views. It gels up well with all other libraries and thus helps in extending HTML vocabulary for web applications.

Features of Angular:

- In an angular application, we don't need to write separate code to perform the data binding functionality. By adding some snippets of code we can easily bind data from HTML control to application data. Any extra code is not written to bind with HTML control.
- An angular application is built using MVC architecture that stands for Model View and Controller. It separates the

application into three parts model part, view part and controller part as per the components of MVC architecture. Using this, architecture presentation part, logic part and application data part is split into the separate section which allows managing of application in a very fluent manner.

- View of angularJS, mix data from a model into HyperText Markup Language templates. Angular JS directives are used for the same purpose. It tells how to combine data into the HTML template. With the use of directive, we can provide extra functionality to our angular application. Angular provides a way to create custom directives too.

- When you are writing code using angular, it converts your template into a highly optimized code that gives you an advantage of handwritten code with the productivity of framework.
- The first view of your application on .net, PHP, node.js and other servers that is till now dependent on HTML CSS for their front end serve using angular.
- Its new component router loads angular app quickly. It provides the ability of automatic code splitting too.

Therefore only that code is loaded which is requested to render the view.

ReactJS:

React is a JavaScript Library created by Facebook for creating dynamic and interactive applications and building better UI/UX design for web and mobile applications. React is an open-source and component-based front-end library. React is responsible for the UI design. React makes code easier to debug by dividing them into components.

Features of React:

- React uses JSX, which is a combination of HTML and JavaScript. You can embed JavaScript objects inside the HTML elements. JSX is not supported by the browsers, as a result Babel compiler transcompile the code into JavaScript code. JSX makes codes easy and understandable. It is easy to learn if you know HTML and JavaScript.
- Usually, JavaScript Frameworks updates the whole DOM at once, which makes the web application slow. But react uses virtual DOM which is an exact copy of real DOM. Whenever

there is a modification in the web application, the whole virtual DOM is updated first and finds the difference between real DOM and Virtual DOM. Once it finds the difference, then DOM updates only the part that has changed recently and everything remains the same.

- The data in react flows only in one direction i.e. the data is transferred from top to bottom i.e. from parent components to child components. The properties(props) in the child component cannot return the data to its parent component but it can have communication with the parent components to modify the states according to the provided inputs. This is the working process of one-way data binding. This keeps everything modular and fast.
- React.js divides the web page into multiple components as it is component-based. Each component is a part of the UI design which has its own logic and design as shown in the below image. So the component logic which is written in JavaScript makes it easy and run faster and can be reusable

NodeJS:

Built on Chrome V8 JavaScript Engine, Node.JS is a JavaScript runtime that makes use of an event-driven, non-blocking I/O model thus making it lightweight and efficient. Node.JS package ecosystem is the largest ecosystem of open source libraries in the world.

Node.JS is an open source server framework that makes use of JavaScript on Server and runs on various platforms like Windows, Linux, Mac OS X and Unix etc.

Features of Node:

- The Node.js library's APIs are all asynchronous (non-blocking) in nature. A server built with Node.JS never waits for data from an API. After accessing an API, the server moves on to the next one. In order to receive and track responses of previous API requests, it uses a notification mechanism called Events.
- Node.js employs a single-threaded architecture with event looping, making it very scalable. In contrast to typical servers, which create limited threads to process requests, the event mechanism allows the node.js server to reply in a

non-blocking manner and makes it more scalable. When compared to traditional servers like Apache HTTP Server, Node.js uses a single-threaded program that can handle a considerably larger number of requests.

- Node.js makes use of the V8 JavaScript Runtime motor, which is also used by Google Chrome. Hub provides a wrapper for the JavaScript motor, which makes the runtime motor faster. As a result, the preparation of requests inside Node.js becomes faster as well.
- NodeJs can also handle concurrent requests efficiently. It has a cluster module that manages load balancing for all CPU cores that are active. The capability of NodeJs to partition applications horizontally is its most appealing feature. It achieves this through the use of child processes. This allows the organizations to provide distinct app versions to different target audiences, allowing them to cater to client preferences for customization.

VueJS

VueJS is an open source progressive JavaScript framework used to develop interactive web interfaces. It is one of the famous frameworks used to simplify web development. VueJS focusses on the view layer. It can be easily integrated into big projects for front-end development without any issues.

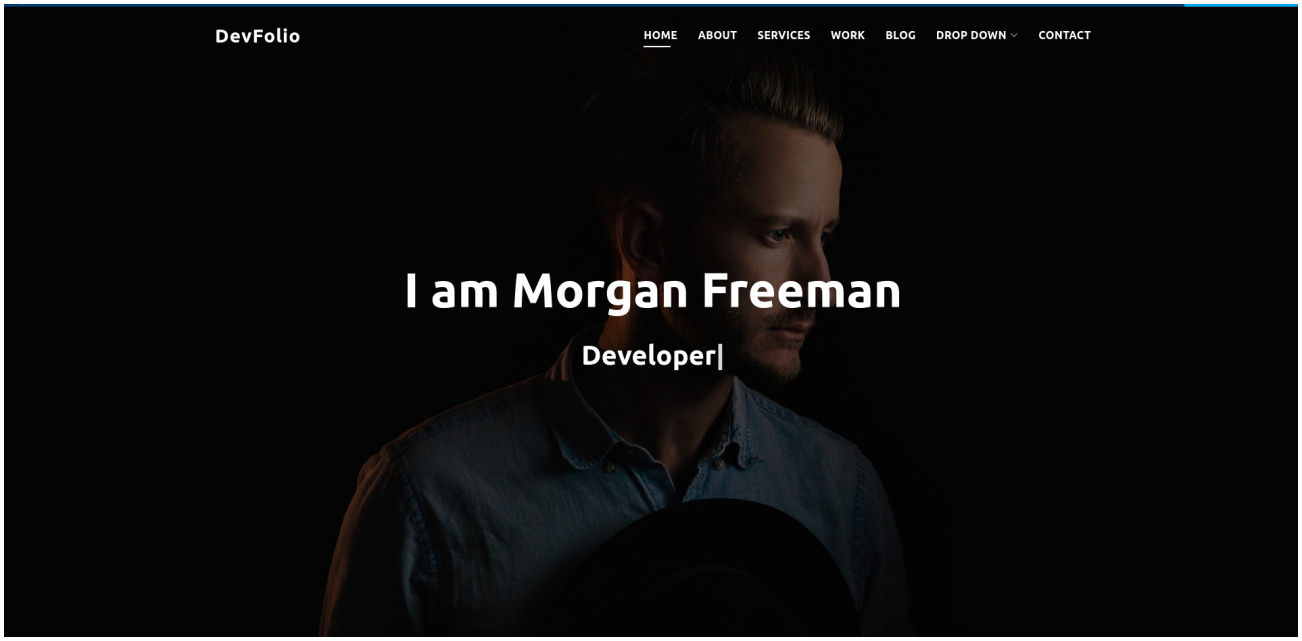
Features of VueJs:

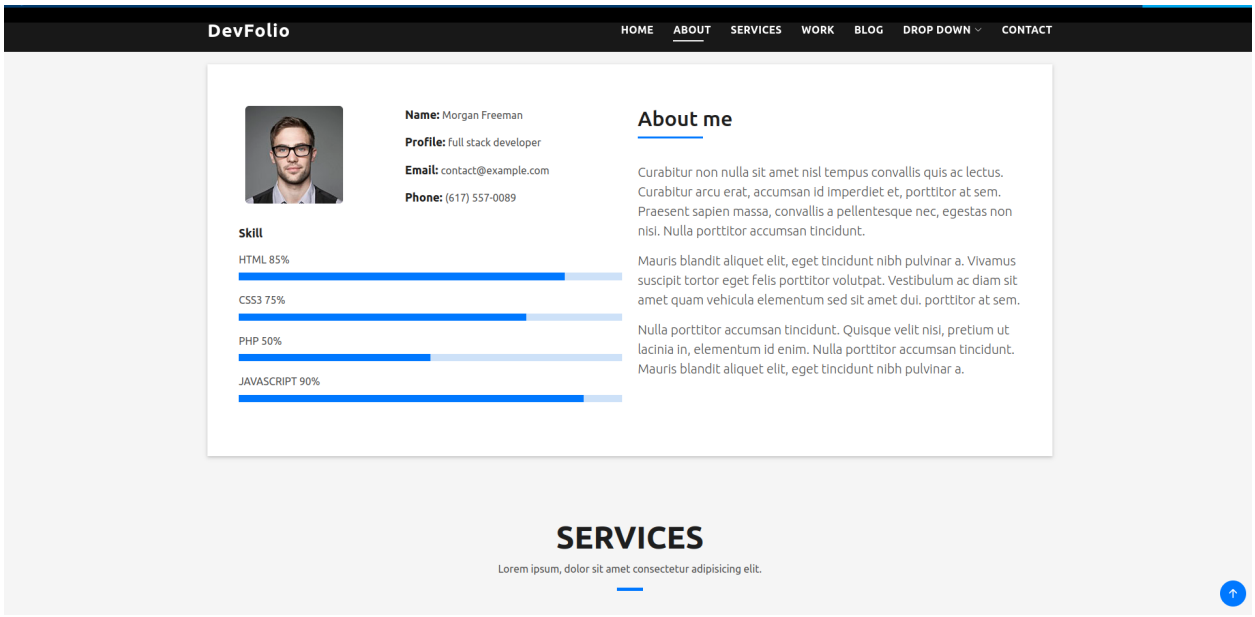
- VueJS makes the use of virtual DOM, which is also used by other frameworks such as React, Ember, etc. The changes are not made to the DOM, instead a replica of the DOM is created which is present in the form of JavaScript data structures.
- The data binding feature helps manipulate or assign values to HTML attributes, change the style, assign classes with the help of binding directive called **v-bind** available with VueJS.
- Event handling is very simple in Vue, **v-on** is the attribute added to the DOM elements to listen to the events in VueJS.

- VueJS uses html, js and css separately. It is very easy for a beginner to understand and adopt the VueJS style. The template based approach for VueJS is very easy.
- VueJS has built-in directives such as **v-if, v-else, v-show, v-on, v-bind, and v-model**, which are used to perform various actions on the frontend.
- Navigation between pages is performed with the help of **vue-router**.
- VueJS uses **vue-cli /CDN/npm** to set up the project with all the basic requirements.We can start with VueJS coding anywhere using the cdn library.
- VueJS comes with a Vue-router package that enables an API to update the application's URL, email password resets with email verification links and supports the back button. The Vue-router helps in mapping routes they belong to, indicating where children should render to the parent /root routes.

Bootstrap

Template Used:

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Name: Morgan Freeman
Profile: full stack developer
Email: contact@example.com
Phone: (617) 557-0089
Skill
HTML 85%
CSS3 75%
PHP 50%
JAVASCRIPT 90%
About me
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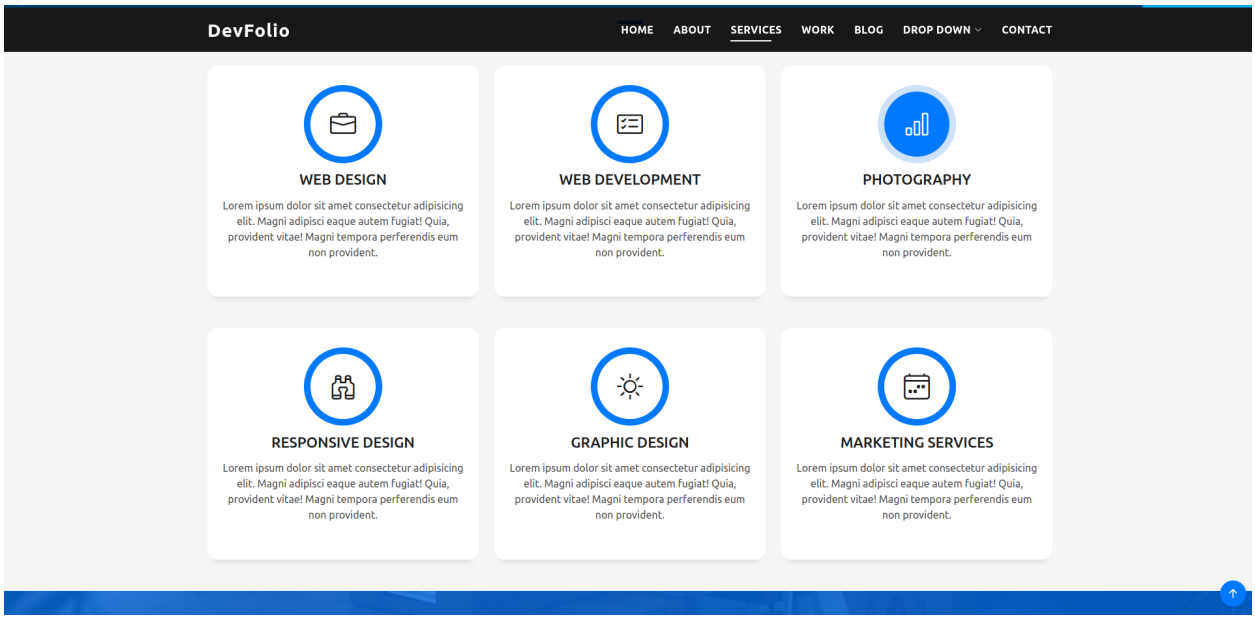
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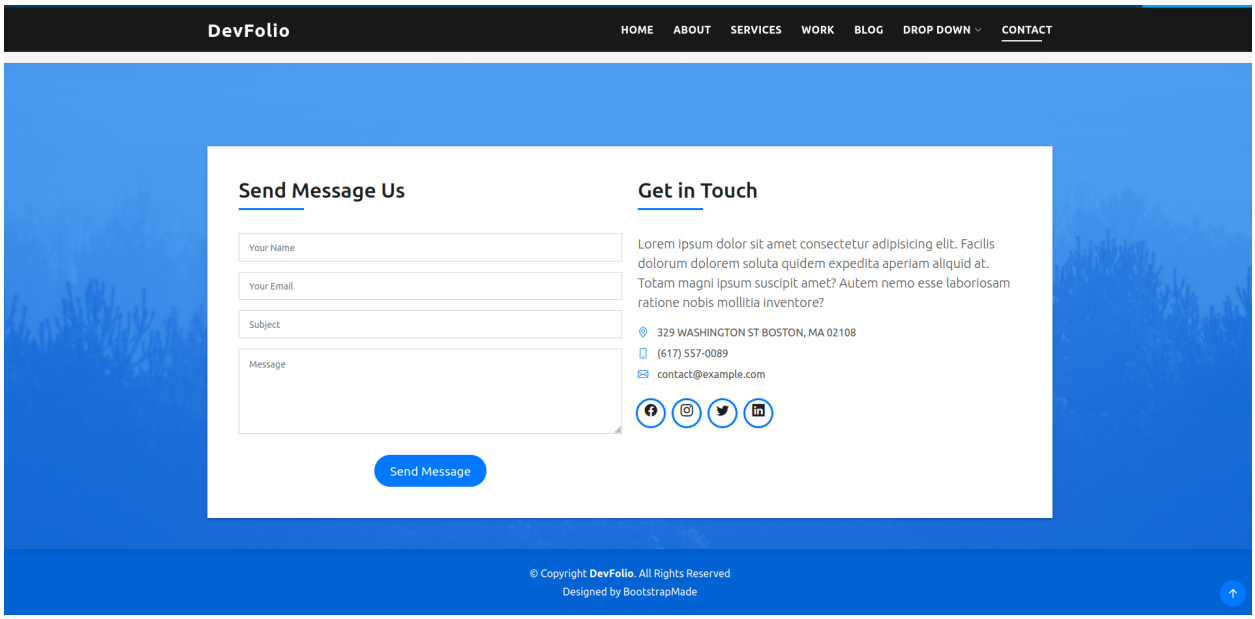
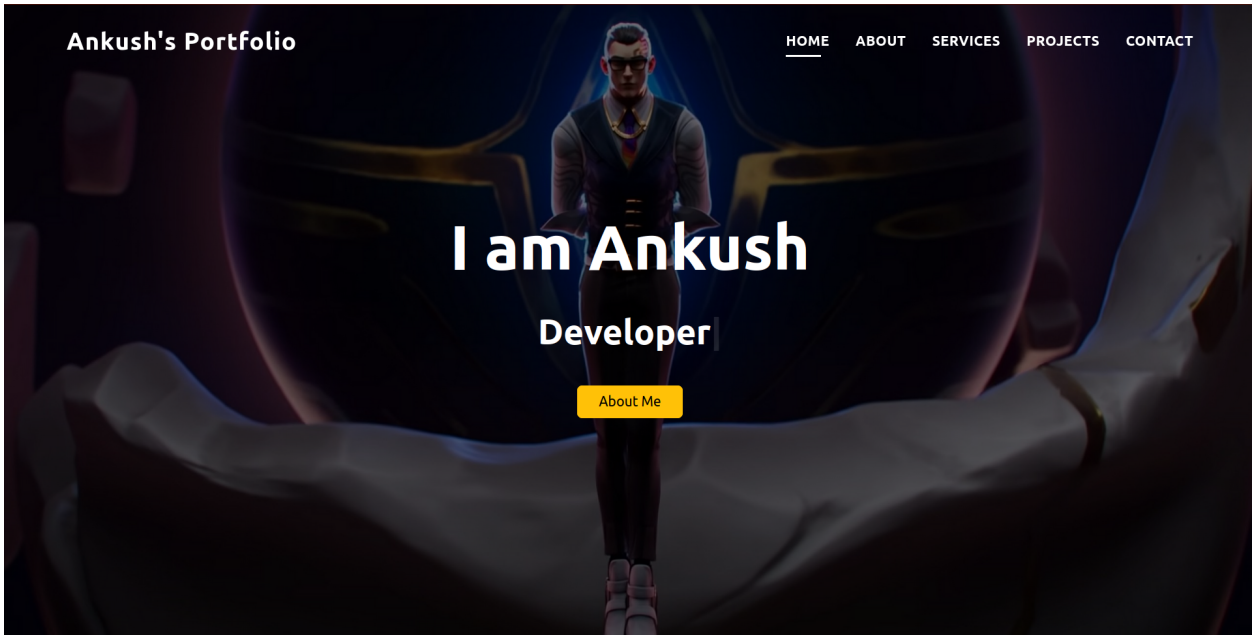


Changes made:

- Updated Titles
- Updated Navbar
- Added More Progress Bars
- Changed Progress Bar Styling
- Added Link in Projects section
- Changed Alignments in About me Section
- Changed Buttons Styling in Contact Us Section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I am Ankush
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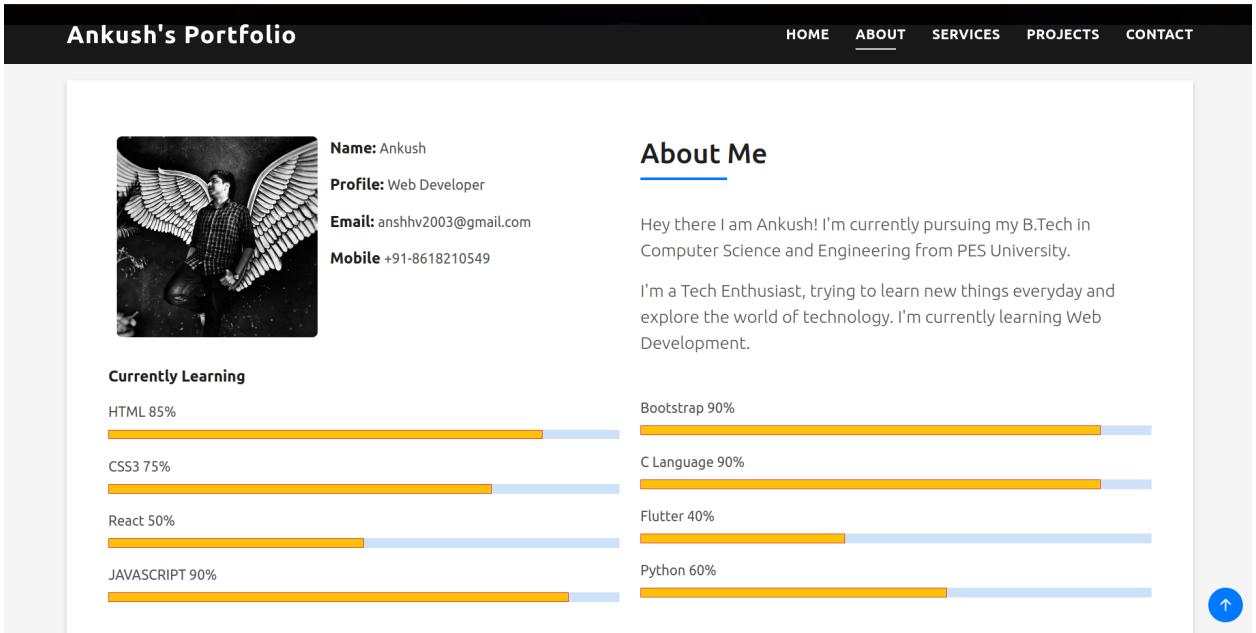
About Me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Name: Ankush
Profile: Web Developer
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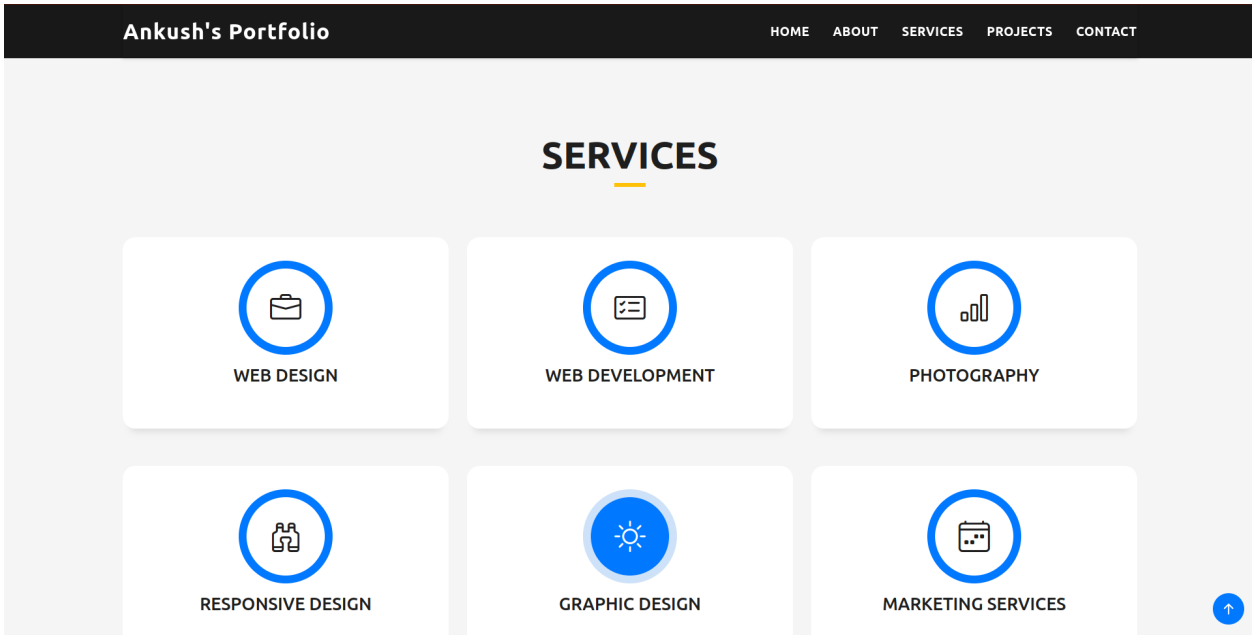
Mobile +91-8618210549
About Me
Hey there I am Ankush! I'm currently pursuing my B.Tech in Computer Science and Engineering from PES University.
I'm a Tech Enthusiast, trying to learn new things everyday and explore the world of technology. I'm currently learning Web Development.
Currently Learning
HTML 85%
CSS3 75%
React 50%
JAVASCRIPT 90%
Bootstrap 90%
C Language 90%
Flutter 40%
Python 60%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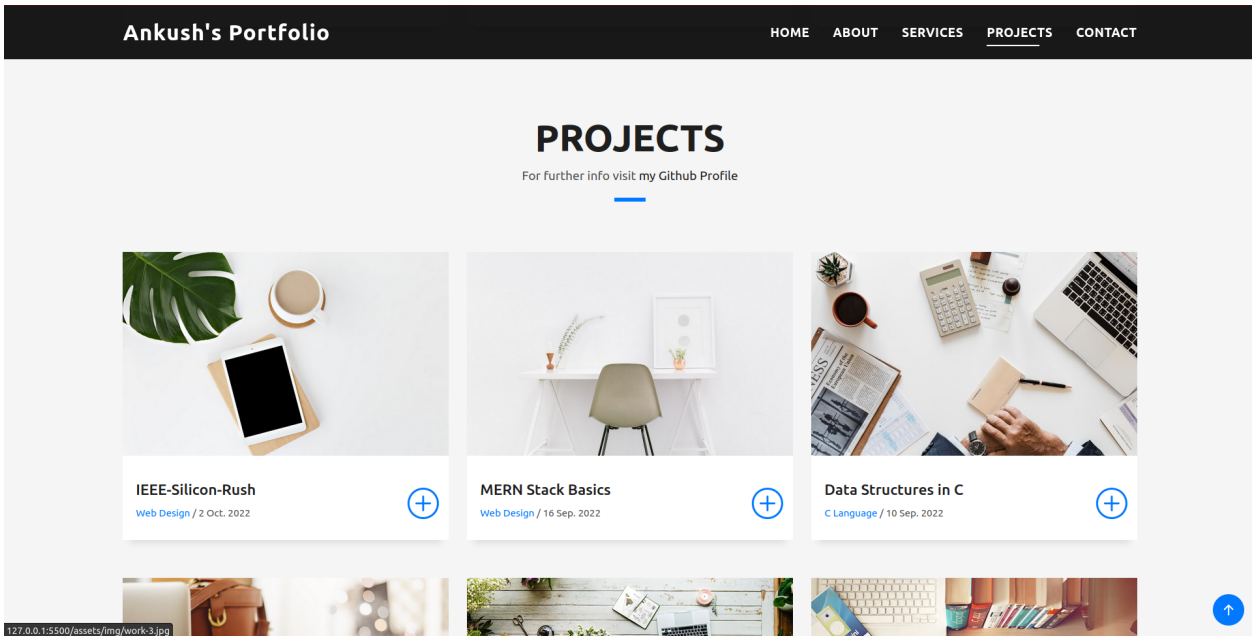
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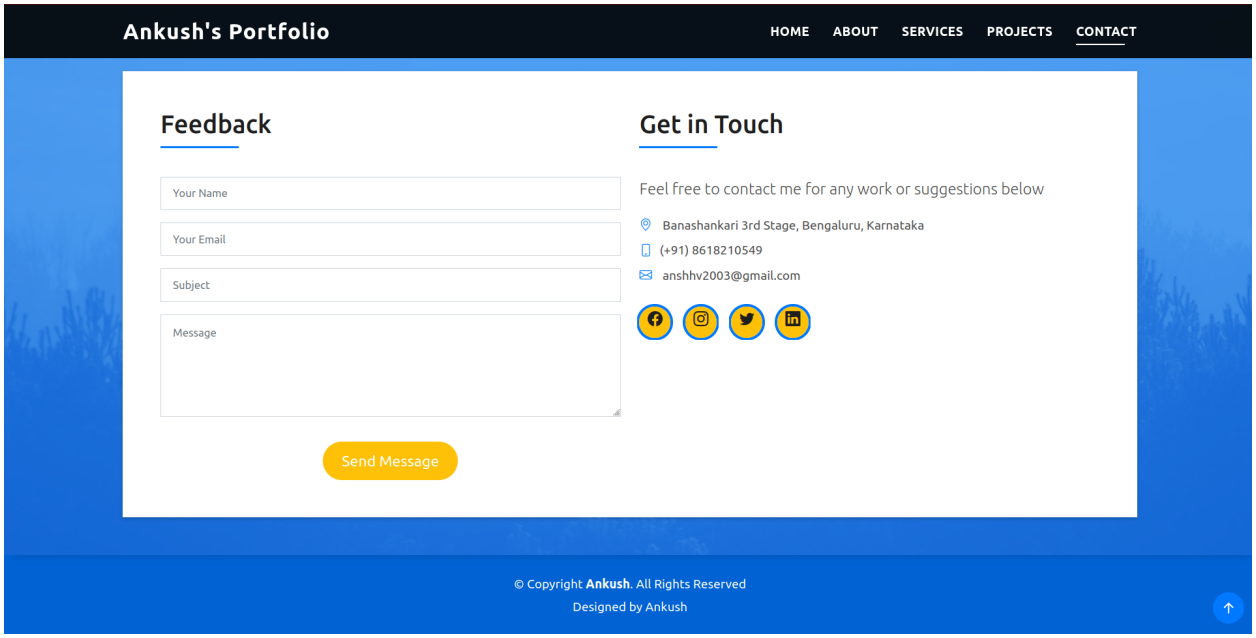
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