SATHYABAMA
Centre for Professional and Career Advancement

in Association with

ProGrad

Diploma Program in Full Stack Developer Program

Objective

Why be a grad, when you can be a ProGrad?
Make learners ready-to-deploy Full stack Developers with expertise in in-demand skills

Program Details

52 Week program with 500+ hours of learning
100+ labs/projects and many more practical exercises
One-on-one course assistance with Teaching Mentors
Job Placement Assistance with Top Firms

Our Methodology

Whole Game Methodology

Our program is based on the Whole Game teaching methodology inspired from the work of David Perkins, a Harvard Professor with a PhD in Artificial intelligence.

We start by showing our students a complete working solution and then deconstruct it by gradually digging deeper and deeper.

Focus on work readiness

There is an elaborate focus on work readiness right from day 1.

Our leaners communicate mostly through Slack, plan their projects using Trello board, work seamlessly with GIT and many more such tools used at workplace.

Exposure to Business Context

All our labs/projects are deisgned to inculcate business thinking right from day 1.

This makes them fully aware of how they will have to collaborate with others to make some small parts of a larger website and also helps them think expansively on what is the business problem they are trying to solve.

Creative Thinking & Leadership

The students work on at least 4 projects of their own choice apart from tonnes of project where they are guided by us.

This helps them cement their understanding about how technology is used to solve business problems and also expands their creative thinking abilities.

ProGrad's Journey (Overview)

Week 0 — SPRINT 0

Pre-Work

Basics of HTML, CSS, JavaScript
Portfolio page, Snapchat clone, Chess game using JS

- Learnability

Week 1-5 — Week 6-8 — SPRINT 1

FrontEnd Development

HTML, CSS, JavaScript

Labs: CricPro, StoryTime, ProGrad Premier League, Chocolate Dispenser, Brrrgrrr etc.

Project: Super Wars

- Learnability
- Adaptability

Project Week

Students to choose a game of their choice & build it using HTML, CSS and ES6 JavaScript.

- Creativity
- Communication Skills
- Presentation Skills

Week 9-14 — Week 15-17 — Week 18-22 — Week 23-26 — SPRINT 2

BackEnd Development

Core Java - basic to advanced

Labs: Brain test, Flames, Astrozone, GoGoa, Bucket List, String Mania, etc.

Project: Blog Application

- Self Motivation
- Problem Solving Skills

Project Week

Students to choose a console based project of their choice & build it using Java concepts like Encapsulation, Abstract classes, interfaces & collections.

- Creativity
- Time Management

Oracle Database, JDBC

Labs: CRUD based applications

Project: Blog application using Database

- Professionalism
- Adaptability

Project Week

Students will build a console based CRUD application using JDBC.

Project: Expense Tracker

- Responsibility
- Work Ethic

Week 27-31 — Week 32-34 — SPRINT 3

Advanced Full Stack 1

Angular 7

Labs: Weather App, Shopping cart, To do list, Single page applications

Project: Super Wars Advanced

- Learnability
- Adaptability

Project Week

Students to choose an application built using Angular 7, HTML and CSS.

- Integrity
- Positive Attitude

Week 34-39 — Week 40-44 — Week 45-50 — SPRINT 4

Advanced Full Stack 2

JSP & Servlets

Labs: Password vault, College management system, Budget management system

Project: Online ticket booking system

- Flexibility
- Quality Assurance

Spring & hibernate

Labs: E-commerce application, inventory application, hotel reservation system

Project: Movie ticket booking system

- Integrity
- Work Pressure

Final Project Week

Create a full stack project which includes frontend and backend. Project selectio, requirement gathering & project scoping.

- Business understanding
- Motivation

Week 51-52 — SPRINT 5

Career Week

Career Week

Students would be trained to become interview ready and are provided with placement opportunities.

- Communication Skills
- Team Work
- Networking
- Problem Solving

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Sprint 1 (Front End)

Review criteria
1. Creative usage of HTML, CSS, JS
2. Code quality with a focus on coding ethics
3. Conformance to mandatory requirements

Week	Activity	Skills
Pre-Work	Pre-Work is a module designed to get the learners comfortable with basic concepts of HTML, CSS, and JavaScript along with the environment they are going to work on. Self-guided projects that they would on: 1. Portfolio page showcasing their skills 2. Snapchat clone - recreating the home page of snapchat.com 3. Understanding the chess game & determining the movements of queen using JavaScript	Basics of HTML, CSS, Javascript
Week 1	Learn with Labs/Projects - Using HTML, CSS, JS Labs: CricPro (a cricket scoreboard built using HTML, CSS), StoryTime (lab focused on decision making & conditional statements in JS), ProGrad Premier League (implementing JS functions with OOPS, ES6 compatible), Chocolate Dispenser (lab focused on Higher Order Functions, Arrays, Objects in JS), Monopoly (building the logic of two player Monopoly game using JS), Brrrgrrr (lab focused on DOM manipulation & event handling in JS). Project: Super Wars (a game designed using HTML, CSS and JS where Super Heroes compete with Super Villians).	HTML, CSS, Javascript CSS Selectors, Grids, Flexboxes Arrays, Objects, ES6 Understanding GIT Higher Order Functions Closures, Async & Callbacks DOM manipulation, APIs & Axios, CSS transistion & animation
Week 2	Project Week - Using HTML, CSS, JS Theme is game development. Students can choose to conceptualize and build a game of their choice. Students are encouraged to be creative during the ideation & development stages. They are also encouraged to explore design using Figma/Sketch and solve katas on CodeWars.	HTML, CSS, Javascript

Week 1

HTML, CSS, JavaScript

Labs: CricPro, StoryTime, ProGrad Premier League, Chocolate Dispenser, Brrrgrrr etc.

Project: Super Wars

- Learnability
- Adaptability

Week 2

Project Week

Students to choose a game of their choice & build it using HTML, CSS and ES6 JavaScript.

- Creativity
- Communication Skills
- Presentation Skills

SPRINT 1
FrontEnd Development

Sprint 2 (Back End)

Review criteria
1. Usage of OOPs
2. Functional testing using JUnit
3. Conformance to mandatory requirements

Week	Activity	Skills
Week 3	Learn with Labs/Projects - Using Java Labs: Brain Test (lab focused on Java to determine if a person is left/right brained), Astrozone (an application to know your horoscope based on your DOB, name and gender), GoGoa (an application for budgeting and planning your Goa vacation built using Inheritance, Polymorphism in Java), Bucket List (An application to create your travel bucket list using Collections), String Mania (a string based application that performs operations on given string)	Java - Basic to advanced Control structures, Date Time Regular Expressions OOPs concepts, Exception handling Collections, Multithreading
Week 4	Project Week - Using Java Theme is business. Students can choose to conceptualize and build an application of their choice. Students are encouraged to use CRUD operations, file saving using excel/word document, and collections using lambda expressions.	Java
Week 5	Learn with Labs/Projects - Oracle Database, JDBC Labs: CRUD based applications like Blog. Students build a blogging website with modules like login/sign up, blog post addition, deletion, updation, filter, search and report generation operations. Project: Gift Recommendation - Based on user detail, learners are expected create an application that recommends a gift.	Oracle Database, JDBC Test driven development File handling, Lambda expressions SQL Joins, ER Model, Business to Data Model
Week 6	Project Week - Using Oracle Database, JDBC Students can choose to conceptualize and build an application of their choice. They are encouraged to generate various reports of different forms (ODF, excel, Word) using Database. They are also encouraged to use filters and CRUD operations.	Oracle Database, JDBC

Week 3

Core Java - basic to advanced

Labs: Brain test, Flames, Astrozone, GoGoa, Bucket List, String Mania, etc.

Project: Blog Application

Self Motivation

Problem Solving Skills

Week 4

Project Week

Students to choose a console based project of their choice & build it using Java concepts like Encapsulation, Abstract classes, interfaces & collections.

Creativity

Time Management

Week 5

Oracle Database, JDBC

Labs: CRUD based applications

Project: Blog application using Database

Professionalism

Adaptability

Week 6

Project Week

Students will build a console based CRUD application using JDBC.

Project: Expense Tracker

Responsibility

Work Ethic

SPRINT 2

BackEnd Development

Sprint 3 (Full Stack)

Review criteria
1. Appropriate usage of Frontend & Backend technologies
2. Application testing using Selenium
3. Conformance to mandatory requirements

Week	Activity	Skills
Week 7	Learn with Labs/Projects - Using Angular 7 Labs: Weather App , Shopping cart, To do List, Single Page Application	Angular 7 Angular directives, components One way data binding, Two way data binding, Formatting data with pipes, Routing
Week 8	Project Week - Using Angular Students can choose to conceptualize and build an application of their choice. They are encouraged to build the application using Angular 7 only.	Angualar 7
Week 9	Learn with Labs/Projects - Using Hibernate Labs: Password vault, College management system, Budget management system	Hibernate Model View Control Approach (MVC), Database with Hibernate,
Week 10	Learn with Labs/Projects - Using Spring Labs: E-commerce application, inventory application, hotel reservation system Project: Movie ticket booking system	Spring Sping expression language, working with web flow, Wiring with annotations, Spring in VC
Week 11 - 12	Final Project Week Students build a complete Full Stack web application. They will work on project selection, requirements gathering, project implementation and presenation.	Full Stack

Week 7

Angular 7

Labs: Weather App, Shopping cart, To do list, Single page applications

Project: Super Wars Advanced

Learnability

Adaptability

Week 8

Project Week

Students to choose an application built using Angular JS7, HTML and CSS.

Integrity

Positive Attitude

Week 9

Hibernate

Labs: Password vault, College management system, Budget management system

Project: Online ticket booking system

Flexibility

Quality Assurance

Week 10

Spring, Hibernate

Labs: E-commerce application, inventory application, hotel reservation system

Project: Movie ticket booking system

Integrity

Work Pressure

Week 11 - 12

Final Project Week

Create a full stack project which includes front end and backend Project selection. Requirement gathering & Project scoping.

Business understanding

Motivation

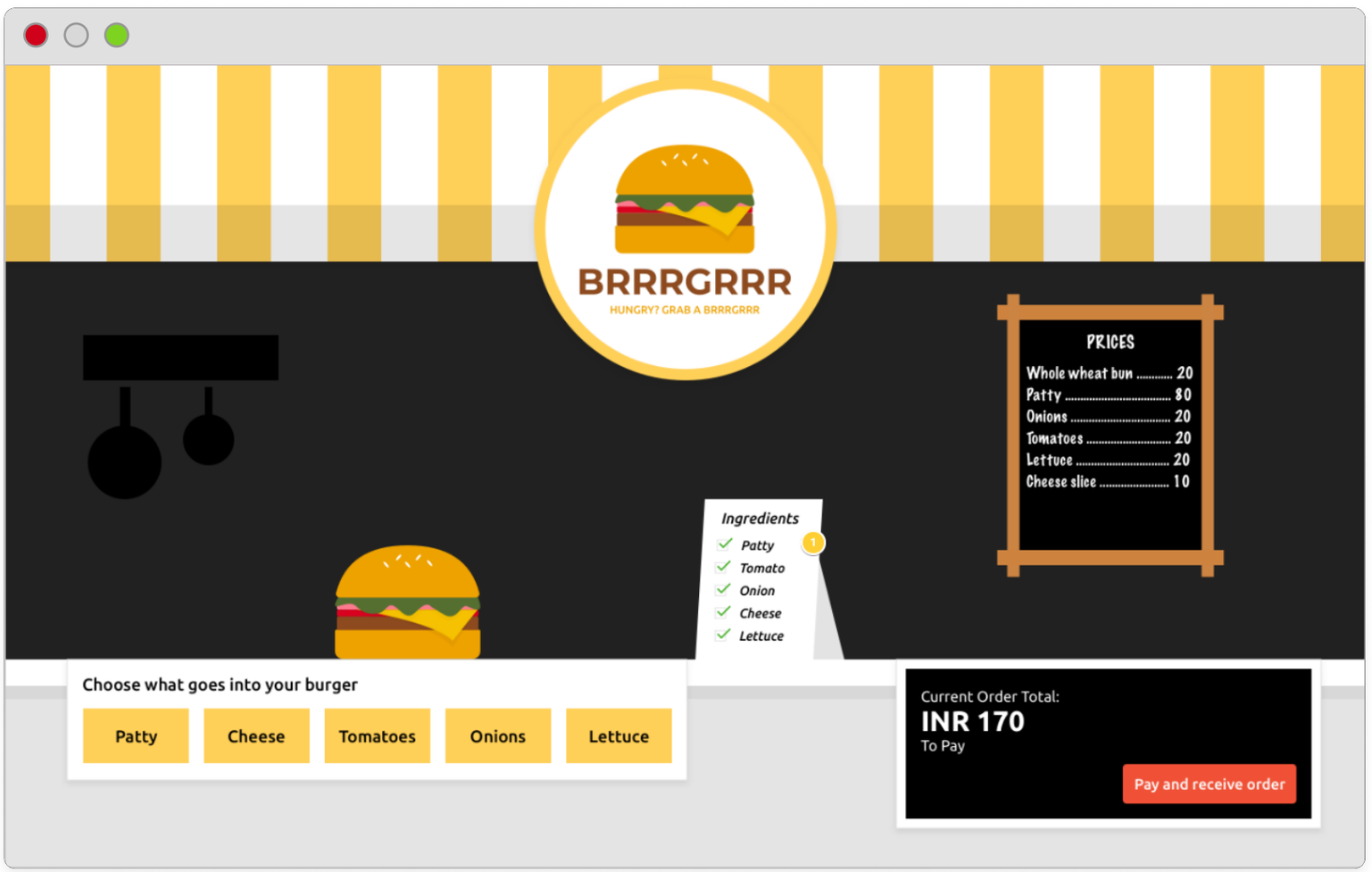
SPRINT 3
Full Stack

Glimpse of FrontEnd Lab/Project

> **Objective**
>
> Brrrgrrr - A online website that sells burgers. It suggests users to not only customize their burgers by adding or removing ingredients but also create their own burger from the ingredients in stock.

Mandatory things:

1. Arrays
2. DOM Manipulation
3. ES6 compatible
4. Higher Order Functions

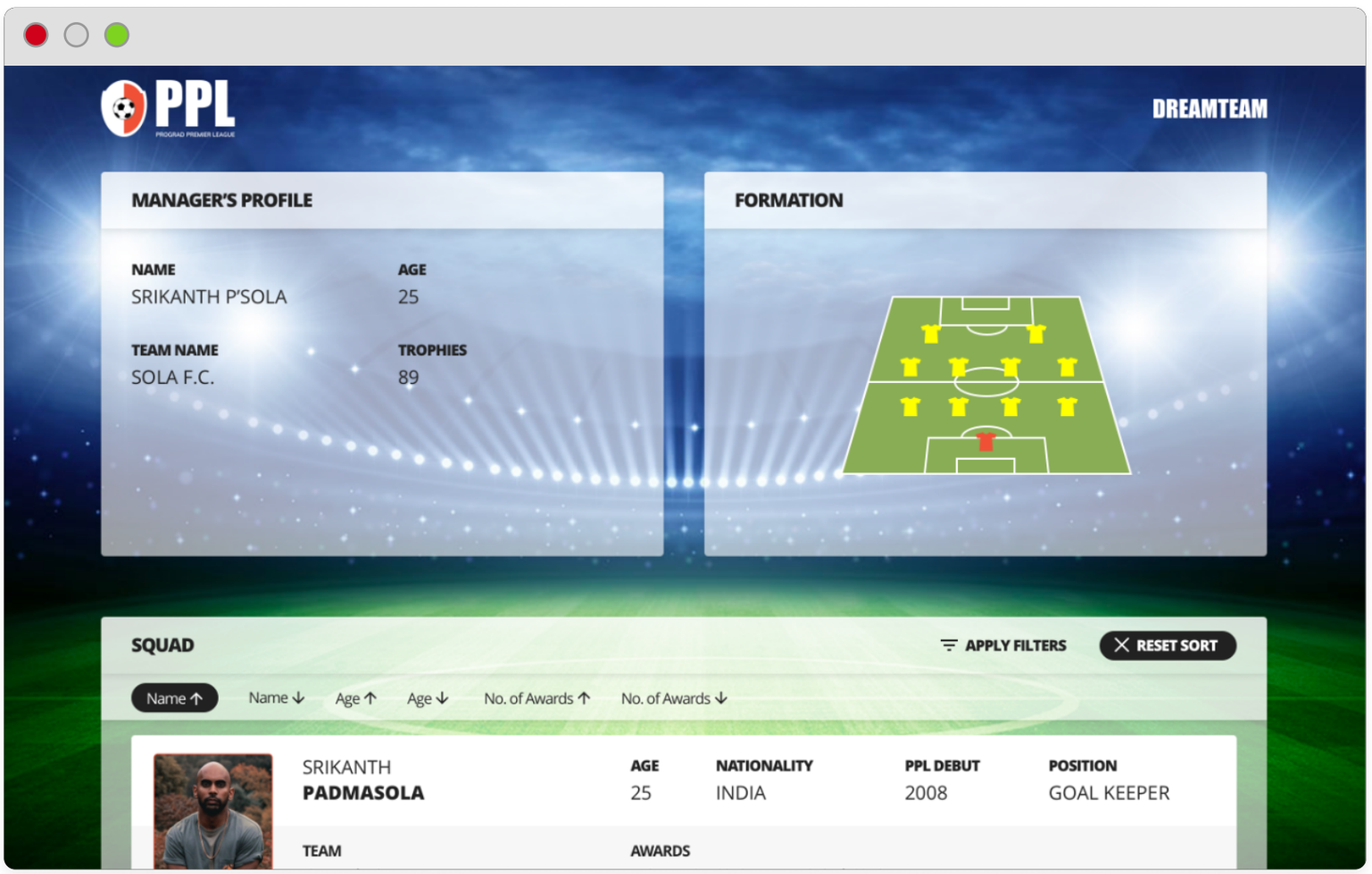


Glimpse of FrontEnd Lab/Project

> **Objective**
>
> Make arrangements to a collected data of Football players across various teams. Arranagements would help decide players for the upcoming matches.

Mandatory things:

1. Arrays
2. Objects
3. ES6 compatible
4. Functions in JS



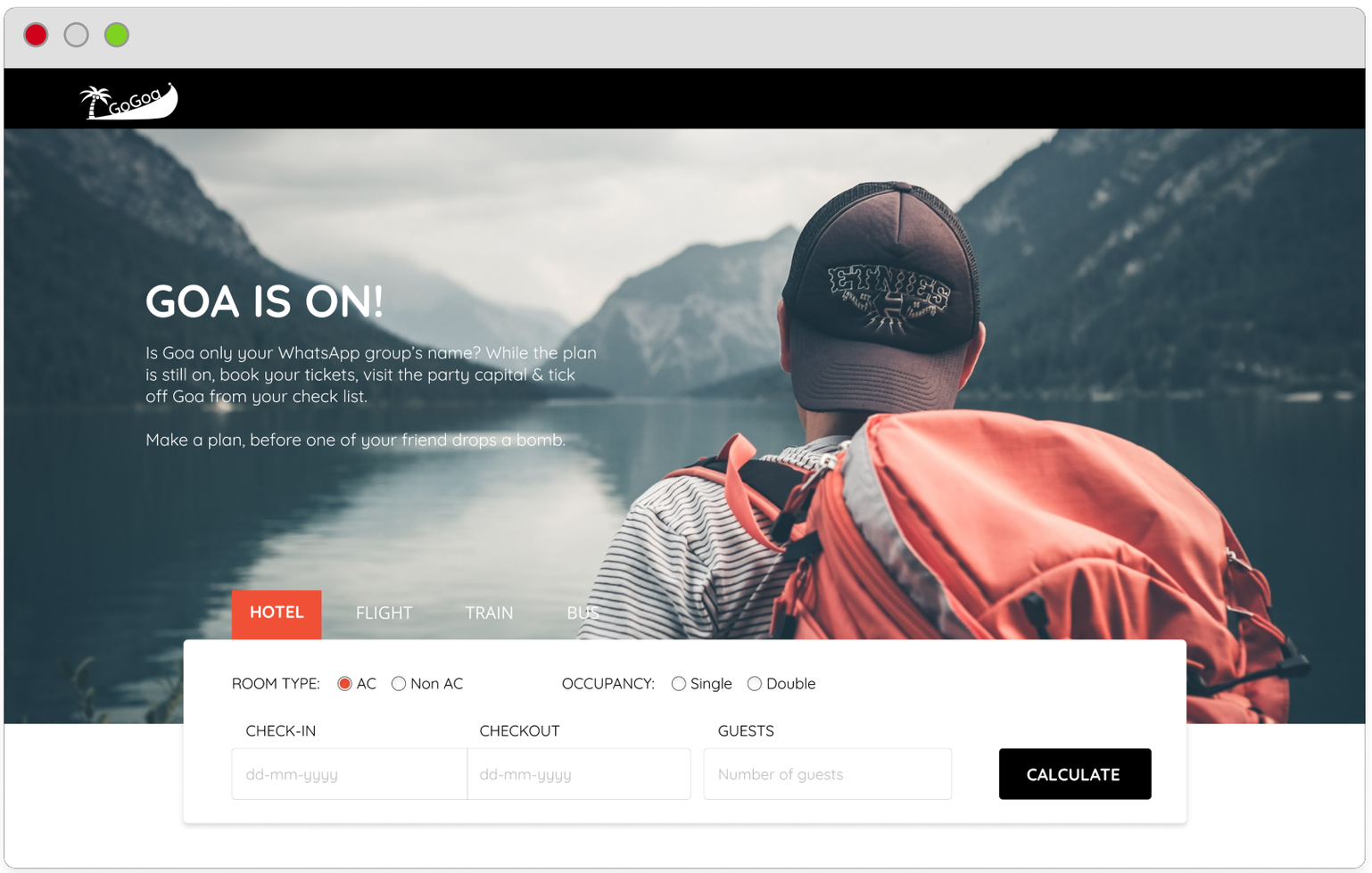
Glimpse of BackEnd Lab/Project

Objective

GoGoa - An application to budget & plan your next trip to Goa. Be it Hotel, Flight, Train or Bus - this application will help you calculate & plan your vacation in advance.

Mandatory things:

1. Classes & Objects
2. Inheritance & Polymorphism in Java

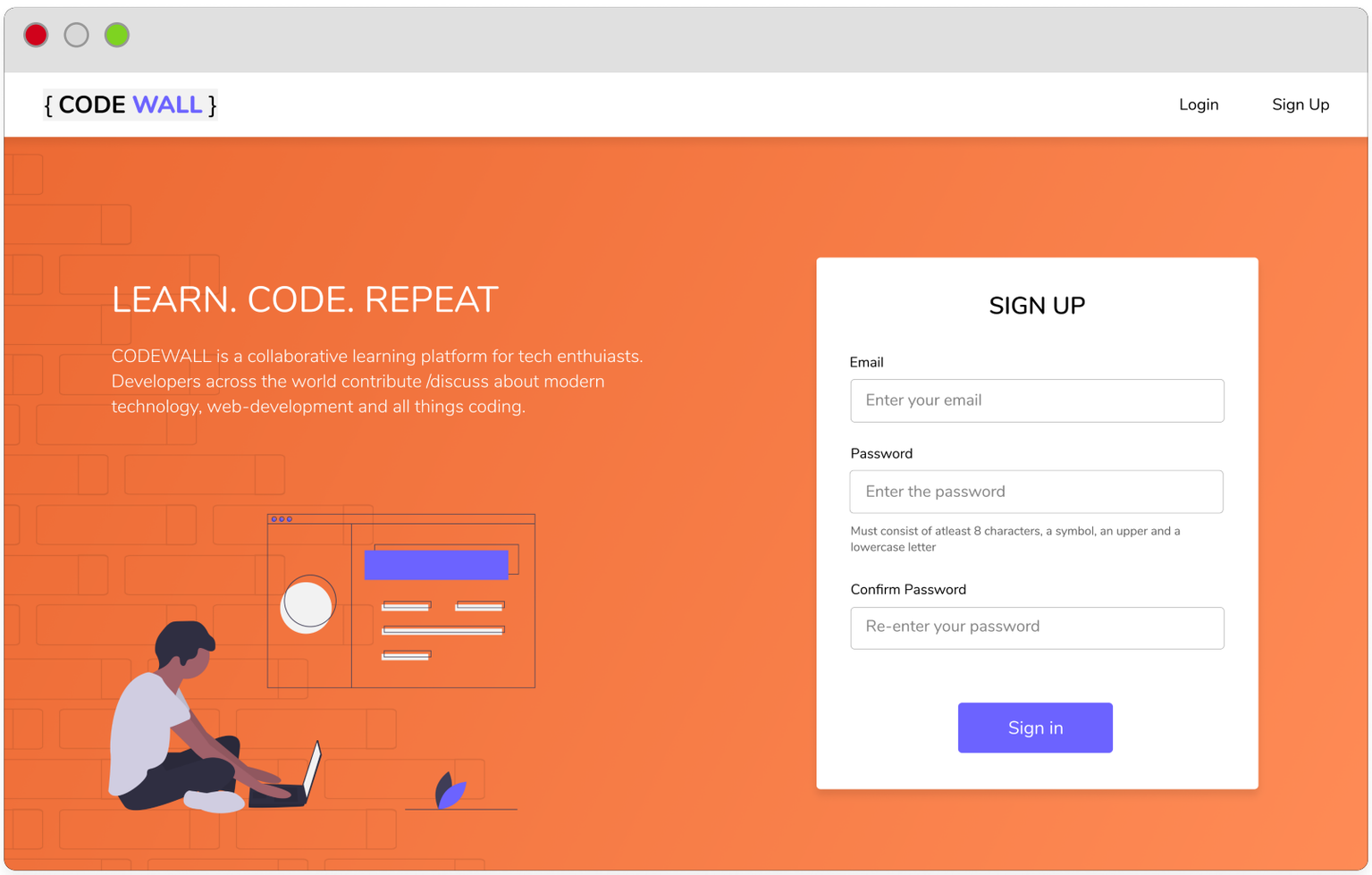


Glimpse of BackEnd Lab/Project

> **Objective**
>
> Blog Application - Build a blog application end to end with modules such as login, sign up, new post addition deletion updation, search etc.

Mandatory things:

1. CRUD operations
2. File saving using Excel/Word
3. OOPs concepts



Glimpse of BackEnd Lab/Project

Objective

Blog Application - Build a blog application end to end with modules such as login, sign up, new post addition deletion updation, search etc.

Mandatory things:

1. CRUD operations
2. File saving using Excel/Word
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