



African Impact Challenge

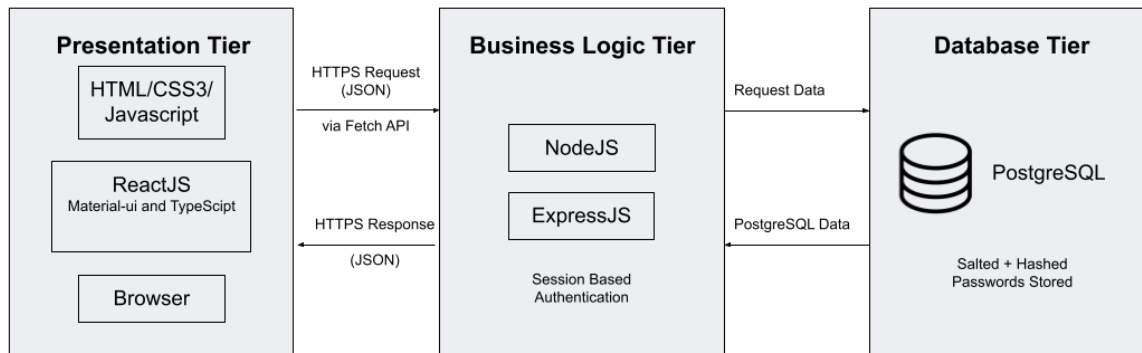
System Design

Tapas Rastogi
Patrick Kemzang
Haolong Zhang
Clement Tran
Aaron Tan
Brandon Jaipersaud
Ho Ki Yuen

Table of Contents

System Architecture Diagram (3-tier architecture)	3
CRC Cards	4
Frontend	4
Backend	9

System Architecture Diagram (3-tier architecture)



Note: See diagram above for technologies that will be utilized and how they interact.

The Presentation Tier is the front end layer – consists of the user interface

The Business Logic Tier contains functional business logic – capabilities of the web application

The Database Tier contains the database

Inspired by:

<https://levelup.gitconnected.com/a-complete-guide-build-a-scalable-3-tier-architecture-with-mern-stack-es6-ca129d7df805>

CRC Cards

Frontend

Class Name: Home	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none">• Serves as a general landing page that allows users to signup and login	Collaborators: <ul style="list-style-type: none">• SignUp• LogIn

Class Name: LogIn	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none">• Authenticates the user• Redirects said user to their personalized dashboard upon successful authentication	Collaborators: <ul style="list-style-type: none">• Home• SignUp

Class Name: SignUp	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none">• Allows the user to create an account	Collaborators: <ul style="list-style-type: none">• Home• LogIn

Class Name: Dashboard	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none"> • Provides the user with shortcuts to various sections of the application • Welcomes the user and gives them recommended actions to take 	Collaborators: <ul style="list-style-type: none"> • NavBar • AppBar

Class Name: VideoPage	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none"> • Enables users to post videos and other users to view the posted videos. 	Collaborators: <ul style="list-style-type: none"> • NavBar • AppBar

Class Name: ReadingsPage	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none"> • Enables teachers to post readings and other users to view the posted readings. 	Collaborators: <ul style="list-style-type: none"> • NavBar • AppBar

Class Name: AppBar	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none"> • Take user back to the dashboard • Give user the option to logout 	Collaborators: <ul style="list-style-type: none"> • Dashboard

Class Name: Profile	
Parent Class (if any): Subclasses (if any): <ul style="list-style-type: none"> • PartnerProfile • EntrepreneurProfile • InstructorProfile • CompanyProfile 	
Responsibilities: <ul style="list-style-type: none"> • Displays information about a user 	Collaborators: <ul style="list-style-type: none"> • NavBar

Class Name: EntrepreneurProfile	
Parent Class (if any): <ul style="list-style-type: none"> • Profile Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none"> • Displays information about an entrepreneur • Entrepreneur has the option to create a company profile 	Collaborators: <ul style="list-style-type: none"> • NavBar • CompanyProfile

Class Name: InstructorProfile	
Parent Class (if any): <ul style="list-style-type: none"> • Profile Subclasses (if any):	
Responsibilities:	Collaborators:

<ul style="list-style-type: none"> • Displays information about an instructor 	<ul style="list-style-type: none"> • NavBar
--	--

Class Name: PartnerProfile	
Parent Class (if any): <ul style="list-style-type: none"> • Profile Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none"> • Displays information about a partner 	Collaborators: <ul style="list-style-type: none"> • NavBar

Class Name: CompanyProfile	
Parent Class (if any): <ul style="list-style-type: none"> • Profile Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none"> • Displays information about a company 	Collaborators: <ul style="list-style-type: none"> • NavBar

Class Name: People	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none"> • Shows all users and entities registered for the website • Can visit user/company profile by clicking on an avatar representing the user/company 	Collaborators: <ul style="list-style-type: none"> • NavBar • Profile

Class Name: Assignments (Entrepreneur View?)	
Parent Class (if any): Subclasses (if any): <ul style="list-style-type: none"> TeacherAssignment 	
Responsibilities: <ul style="list-style-type: none"> Allows a user to see all created assignments 	Collaborators: <ul style="list-style-type: none"> NavBar

Class Name: TeacherAssignment	
Parent Class (if any): <ul style="list-style-type: none"> Assignment Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none"> Allows a teacher to post/view/grade assignments 	Collaborators: <ul style="list-style-type: none"> NavBar

Class Name: Discussions	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none"> Provides a user with the ability to create a post 	Collaborators: <ul style="list-style-type: none"> NavBar

Class Name: Messaging	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none"> Provides a user with the ability to message another user 	Collaborators: <ul style="list-style-type: none"> NavBar

Backend

Class Name: Routes/ProfileRoutes	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none">• Handles request related to user profiles – signup, sign in, sign out, update profile	Collaborators: <ul style="list-style-type: none">•

Class Name: Routes/CoursesRoutes	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none">• Handles requests related to uploading resources onto the server	Collaborators: <ul style="list-style-type: none">•

