



African Impact Challenge

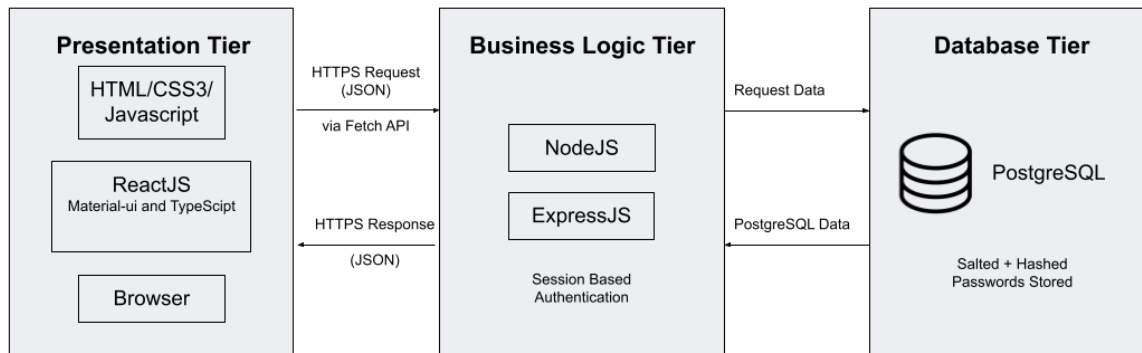
System Design

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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

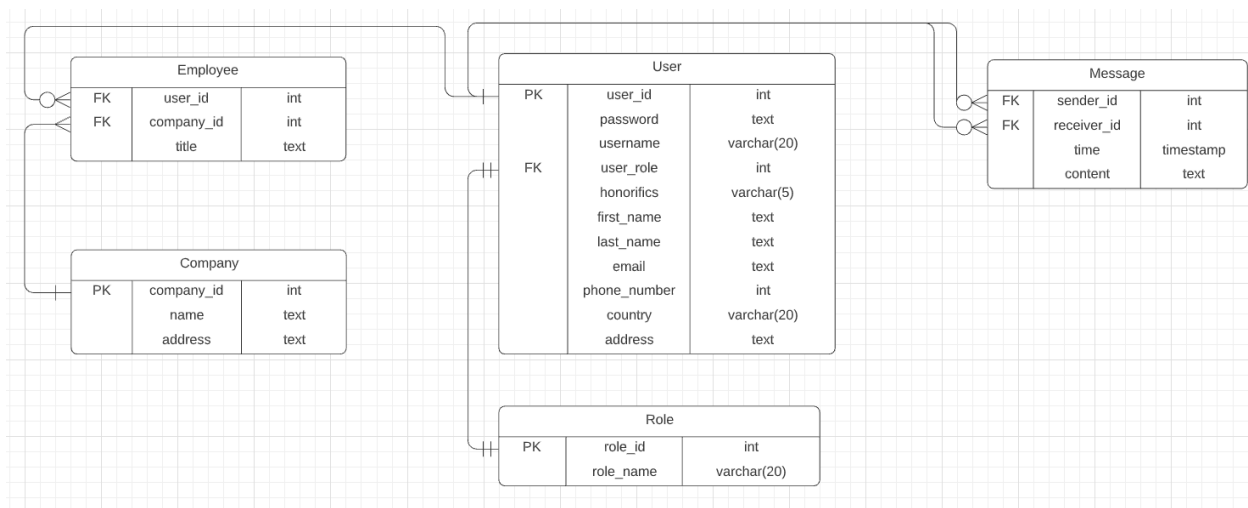
The Business Logic Tier contains functional business logic – capabilities of the web application

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>

Database Design



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 	Collaborators: <ul style="list-style-type: none"> NavBar LogIn SignUp

Class Name: NavBar	
Parent Class (if any): Subclasses (if any):	
Responsibilities: <ul style="list-style-type: none"> Provides the user with links to various sections of the application 	Collaborators: <ul style="list-style-type: none"> Dashboard Profile Messaging Discussions Assignments Classes

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: 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

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: Assignments	
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: 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 	Collaborators: <ul style="list-style-type: none"> NavBar

Class Name: InstructorProfile	
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 instructor 	Collaborators: <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: 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

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">•

API Documentation

Authentication Route

/api/auth/

- All routes prefixed with /api/auth/ are passed through authentication middleware before going to their destined route.

Profile-Based Routes

Method	HTTP Request Verb	Description
/api/profile/register/	POST	Profile Creation Username and other registration fields should be sent in JSON. Headers: Content-Type: application/json
/api/profile/update/	PUT	Update profile
/api/profile/delete/	DELETE	Delete profile
/api/profile/login/	POST	Login to website. Session cookie should be sent from server to the client.
/api/profile/logout/	GET	User logout. Client browser and server should destroy the session cookie associated with the client-server connection.