Assignment

Problem Statement

The goal of this assignment is to build a simple e-commerce website for a small business which sells apparels. This website will allow users to browse and view the products online.

Here are some preferred tools that you can use for development.
1. UI Elements should be designed in HTML/CSS based on Wireframes provided below
2. No constraints on Javascript Frameworks or CSS Libraries
3. Backend should be written using any one of the following language/web framework combination
    a. Java - Spring
    b. Python - Flask
    c. Go - Gin
4. PostgreSQL/MySQL/MariaDB for database
5. Redis for Caches

Note: Please discuss with your mentor if you prefer to pick some other technology to develop your application.

The product page also includes a "Recommended For You" widget. The expectation for the widget is to showcase additional products that users may want to see/buy.
This has been left as open ended where you can showcase your skills. This widget can be simply a filter based widget or an AI powered widget using some tracking information or current user activity.

Constraints

1. All APIs exposed from Backend should follow REST - https://restfulapi.net
2. Database should be normalized and should have proper relationships (if any)
3. Should be fault tolerant
4. Should provide an API for ingesting a JSON of catalog information
5. Should use Unbxd APIs provided below to power the search page
6. Should call Unbxd API through backend, instead of calling directly from the UI
7. Should be able to handle 50 Requests every second, with minimal CPU/Memory footprint
8. Should have Integration Tests that can be run on Backend

Development Environment

Environment used for development will vary depending on the choice of technology. There are no restrictions on tools, editors or IDEs.
However, please use an open source or community edition tool instead of a proprietary one.

Packaging

The application developed is expected to be deployed on a Kubernetes Cluster and hence the packing and shipping of this application should reflect the same.
To support this,
- Both backend & frontend of the application should be shipped as docker images.
- Both backend & frontend should provide deployment manifests for Kubernetes.
- Databases should be installed on the Kubernetes cluster using manifests or helm, however any sort of dependency of applications & databases is beyond the scope of this assignment

Note: If you prefer to develop locally, you can use Kind to run a Kuberenetes cluster (https://kind.sigs.k8s.io) on your local machine.

Details about Docker & Kubernetes will be shared during the sessions dedicated to each of these technologies.

CI & Testing

Any open source project, which this is expected to be, can utilize Github's Workflows. Please use it for any CI (Continuous Integration) needs.
Postman (https://www.postman.com) is one of the many possible ways in which integration tests can be written and executed in every CI run.

Mentors will guide you further on how to iteratively develop an application while following the principles of TDD (Test Driven Development).

Version Control

The preferred version control system of choice is Git.
Git has multiple different workflows, however at Unbxd the preferred approach is to use 'forks'. Follow details provided in this link.
https://gist.github.com/uknth/6e5c9a18f277a8a457b9602f0061edd3
Mentors will elaborate on how to do this with your projects.

Commit messages are a key part of how we evaluate your progress as developers so, please follow the guidelines mentioned in this link.
https://github.com/angular/angular.js/blob/master/DEVELOPERS.md#-git-commit-guidelines

SDLC

As any industry project, this application will be developed while following standard software development life cycle. The preferred approach is to use Agile development methodology, however, this may not be strictly followed.
You are encouraged to form your own approach closely matching the suggested method given that all this is new to you.

There are a few constraints that need to be considered.
1. There will be a weekly review of the progress, so plan accordingly.
2. Front-end & Back-end can be treated as separate projects.
3. Every Monday a plan needs to be presented on what is the expectation for the current week, and the same needs to be showcased on next monday.
4. Each iteration of the project should be developed based on the plan presented, if any deviation is required, please consult with your mentor.

Unbxd API to use

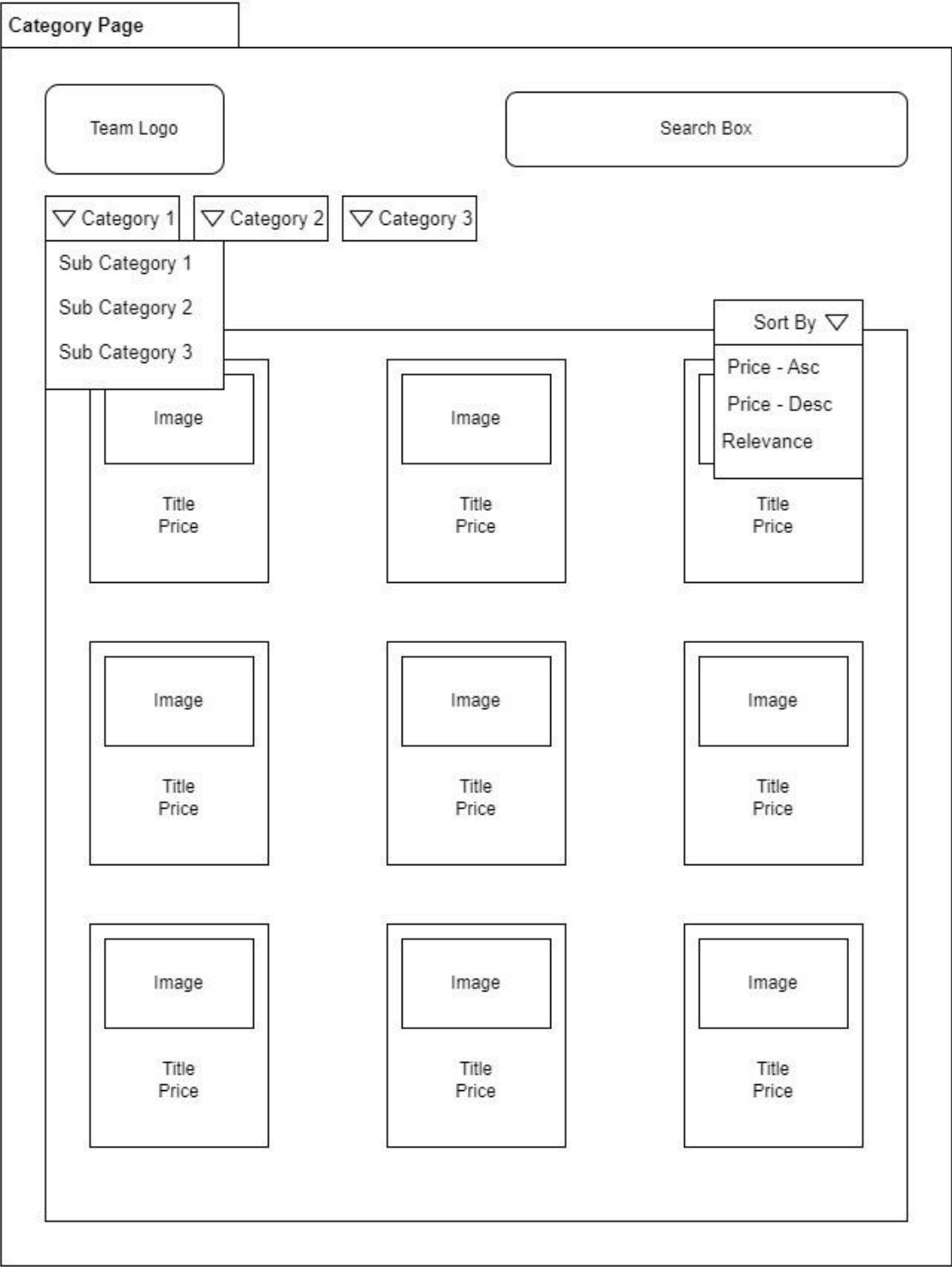https://search.unbxd.io/fb853e3332f2645fac9d71dc63e09ec1/demo-unbxd700181503576558/search?q=query

Documentation on how to use this API. https://unbxd.com/docs/site-search/documentation/

Evaluation Criteria

Assignment will be evaluated on following criteria
1. Successful completion of the given problem statement
2. Packaging & Deployment
3. Development life cycle
4. Code Quality
5. Testing
6. Innovation

Wireframes

Category Page

Team Logo

Search Box

▽ Category 1   ▽ Category 2   ▽ Category 3

Sub Category 1
Sub Category 2
Sub Category 3

Sort By ▽

Price - Asc
Price - Desc
Relevance

Image	Image	Image
Title Price	Title Price	Title Price
Image	Image	Image
Title Price	Title Price	Title Price
Image	Image	Image
Title Price	Title Price	Title Price

Search Page

Team Logo

Search Box

▽ Category 1   ▽ Category 2   ▽ Category 3

Sort By ▽

Image	Image	Image
Title Price	Title Price	Title Price
Image	Image	Image
Title Price	Title Price	Title Price
Image	Image	Image
Title Price	Title Price	Title Price

Product Page

Team Logo

Search Box

▽ Category 1   ▽ Category 2   ▽ Category 3

Product Title

Price: $1

Description

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Recommend For You

Image	Image	Image	Image
Title Price	Title Price	Title Price	Title Price