**CS5600: Programming Assignment 1 (50 points)**

In this assignment, you will learn and implement CRUD(Create, Read, Update, Delete). These are the basic APIs to perform at most functions on web applications. You will develop the backend web framework using Python Flask, Java, C# .NET connect to MongoDB (https://www.mongodb.com). There are some videos on Blackboard about Flask framework and MongoDB that you can study before starting this assignment. To test the backend web framework, you can use API platforms such as Postman API Platform(<https://www.postman.com>) or Swagger UI such as FastAPI(https://fastapi.tiangolo.com/).

The CSV file(Amazon-Products.csv :Products on Amazon.com in 2023) is provided in this assignment with the column names including:

**code**

**name**

**main\_category**

**sub\_category**

**image**

**ratings**

**no\_of\_ratings**

**actual\_price**

**discount\_price**

First, the instructor will guide you how to generate MongoDB Database and collections using MongoDB Compass or Atlas. You will import this csv file to collection products on MongoDB database names amazon.

**This is a sample on python file:**

The MongoDB Configuration: (local database-MongoDB Compass).

Host = ‘localhost’

Port = 27017

Database name = amazon

Collection name = products

…

try:

    mongo = pymongo.MongoClient(

        host = 'localhost',

        port = 27017,

        serverSelectionTimeoutMS = 1000

    )

    db = mongo.amazon

    mongo.server\_info() #trigger exception if cannot connect to db

except:

    print("Error -connect to db")

In xxxx.py file, you must perform the following main functions:

1. Insert the new products.

@app.route('/products', methods=['POST'])

1. Update the product information using code. (By update only name, ratings, no\_of\_ratings, actual\_price, and discount\_price).

@app.route('/products/<int:cname>', methods=['PATCH'])

1. Delete the product information using code.

@app.route('/products/<int:cname>', methods=['DELETE'])

1. Retrieve all the products in database.

@app.route('/products', methods=['GET'])

1. Display the product’s detail using code.

@app.route('/products/<int:cname>', methods=['GET'])

**Submission:**

**Turn in your codes and data files in folder name “PROG\_ASSIGN\_XXXXX\_YYYYYY” where XXXXX is course number (CRN) and YYYYYY is 700# student id and zip the folder before submitting your assignment.**

**Notes:**

**If you want to use other web frameworks such as Java, JavaScript, PHP, or Microsoft Visual Studio .NET, etc. You must contact me beforehand and let me know how to execute your web framework. You can use the internet cloud application platforms such as Heroku (**[**https://www.heroku.com**](https://www.heroku.com)**),..,etc. if you prefer. However, in your assignment submission, you must provide me the links for execute the web application and view the source codes.**