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

In this assignment, you will learn and implement CRUD(Create, Read, Update, Delete) operations using GraphQL APIs. These are the basic APIs to perform at most functions on web applications. You will develop the backend web framework using Python Flask, Java, NodeJS, C# .NET,…, etc. connect to MongoDB Database on Cloud (MongoDB Atlas-https://www.mongodb.com/products/platform/atlas-database).

There are some videos on Blackboard about GraphQL APIs which you must study before starting this assignment. We will use some platforms to call GraphQL APIs for example: Apollo Server(https://www.apollographql.com/docs/apollo-server/).

The CSV file (IMDB-Movie-Data.csv) is provided in this assignment with the column names including:

**Ids**

**Title**

**Genre**

**Description**

**Director**

**Actors**

**Year**

**Runtime (Minutes)**

**Rating**

**Votes**

**Revenue (Millions)**

The instructor will guide you how to generate MongoDB database and collection using MongoDB Compass on MongoDB Atlas. You will import the .csv file to generate collection *imdb* on MongoDB Atlas.

Database name: database

Collection name: imdb

You should create the application using GraphQL APIs by Apollo Server for 5 main functions:

1. Create function: insert the new movies.
2. Update function: update the movie and show information using title, and modifies only description, runtime, genre and votes attributes).
3. Delete function: delete the movie document using title.
4. Read function (I): retrieve all the movie documents.
5. Read function (II): display the detail of the movie using title.

**Submission:**

**Turn in your codes and data files in folder name “PROG\_ASSIGN1\_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 platforms beyond Apollo Server. You must contact me beforehand and let me know how to execute the platform. You can use the internet cloud application platforms such as Heroku (**[**https://www.heroku.com**](https://www.heroku.com)**) if you prefer. However, in your assignment submission, you must provide me the links for execute the application and source codes.**