COP5570- Term Project proposal

Type of Project:

The type of project chosen is a *software-development oriented* one. We are choosing this to develop a new software system from scratch to understand, implement and evaluate concurrent, parallel, and distributed programming concepts.

Team Members:

- SaiJyothi Attuluri
- Bharath Seshavarapu
- Mahidhar Reddy Narala

Objective:

The aim of this project is to develop an online marketplace (e-commerce) website from scratch without a user interface (only backend microservices) that incorporates concurrent, parallel, and distributed programming concepts. The website will be built using Java programming language and Spring framework. It will allow users to create, edit, search/view products, and order products. The metrics that will be displayed on the website will be based on the performance of the concurrent, parallel, and distributed programming techniques used in the project.

The project will be divided into the following major components:

1. User Management: The user management module will allow users to create an account, login, and manage their profile.
2. Product Management: The product management module will allow sellers to create, edit, and view products. The products will be stored in a database and will include product information such as name, category, description and price.
3. Product Search: The product search module will allow users to search for products based on their name or category. The search functionality will be implemented in a very basic manner as going deep into search is out of project scope.
4. Order Management: The order management module will allow users to create, edit, and view orders. The orders will be stored in a database and will include order information such as product name, quantity, price etc.
5. Metrics: Metrics will be measured with regards to performance of the concurrent, parallel, and distributed programming techniques used in the project. The metrics will include response time, throughput, and scalability.

Status Report

The project is currently in the initial development phase, and the following tasks have been completed:

- System Design: How to implement different modules and which frameworks, tools to use to implement them has been decided after various discussions.
- Database: The database structure for tables have been discussed and created.
- Code: The data layer for accessing the database from the software system has been completed.

Future Tasks:

The following tasks are planned and are expected to be completed in the next few weeks:

- Implement different modules as mentioned in the objectives above.
- Develop a script/Use a tool to simulate concurrent user requests to our system i.e., a manner of stress/load testing our system.
- Measure the performance metrics using the tests, which include response time, throughput, and scalability, and report them in our final report.