

Assignment: Develop a Server Client Application

This is a **group-based** assignment where you will be working in a group of maximum **THREE (3)** students. You may discuss general points of view about the assignment with the other groups, but you are not permitted to work with them in completing this assignment.

1. Grouping

Upon the **release of this assignment**, each student is required to register themselves into groups **within five (5) working days** through this module GitHub classroom assignment, <https://classroom.github.com/a/qXiLlmks>

2. Assignment Solution

Upon submission, each group must submit their source code to their respective group GitHub repository through this module GitHub classroom assignment, <https://classroom.github.com/a/qXiLlmks>

3. Video Demonstration

Each group must also submit video demonstration to explain the solution they made for the assignment.

- It is required for you to hand in the video demonstration **[Maximum file size limit: 1GB]** through the Microsoft Form link: <https://forms.office.com/r/UpyrjkSdiB>

Weightage

25%

Due date

Monday, 20th March 2023,
11:59PM

Late Submission

Penalties of 10% deduction of marks for assignment received for each working day after the due date. After one week of submission from due date consider as Fail.

Module Lecturer

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Resources

Student own research, lecture and tutorial covered.

Equipment/Software

The source code should be done using Java Programming Language but you are free to use which IDEs that supports Java Development.

Scenario

For this assignment, your group are required to develop a client server application. The task is to implement the business process as a feature for a specific theme.

The themes for this assignment are as follows:

1. Digital Marketing
2. Advertising
3. Education
4. Real Estate
5. Security Solutions
6. Community Service
7. Health and Well-being
8. Professional Services Solutions
9. Transport
10. Retail and Distribution

Each group is required to choose one (1) theme. No **two (2)-module groups** should choose the same topic. You are not allowed to use the practical session example as your topic.

Requirements

The solution should consist of client implementation and server implementation.

Server Requirements

1. There should only be one (1) implementation of server.
2. One instance of the server should be able to handle multiple session of clients.
3. The sessions should be independent from one another.
4. The server should be able to receive and send data to each client independently.
5. The server should only serve the client. No direct user input is allowed to the server.
6. The server data should remain consistent for all clients.

Client Requirements

1. There should only be one (1) implementation of client.
2. Each client should be able to receive and send data to server.
3. User input should only be through client.

General Requirements

1. There should be at least five (5) features.
2. The features must affect the state of the application.
3. The features must be appropriate for the theme.

Task Distribution Template

A task can be owned by a few members and the total for each task must be 100%. List out all Feature(s) and methods. The sample below only shows 5 Features with 3 methods for each of them. Modify the table below to fit each individual group's program with the last task as Instructional Video.

Tasks		Percentage done by members		
		M1	M2	M3
FEATURE NAME:				
1	Function / Method Name		100%	
2	Function / Method Name	50%		50%
3	Function / Method Name	35%	30%	35%
FEATURE NAME:				
1	Function / Method Name			100%
2	Function / Method Name		100%	
3	Function / Method Name		100%	
FEATURE NAME:				
1	Function / Method Name	100%		
2	Function / Method Name		50%	50%
3	Function / Method Name	100%		
FEATURE NAME:				
1	Function / Method Name	50%	5%	45%
2	Function / Method Name	50%	25%	25%
3	Function / Method Name	35%	30%	35%
FEATURE NAME:				
1	Function / Method Name	100%		
2	Function / Method Name		50%	50%
3	Function / Method Name	100%		
DEMONSTRATION VIDEO		20%	20%	60%

All of the members discussed and agreed with the task distribution above.

	Member Name	Signature
M1	Student Full Name 1	Sign1
M2	Student Full Name 2	Sign2
M3	Student Full Name 3	Sign3

Date Signed: _____

IMPORTANT:

Marks will be distributed equally and not based on the percentage allocated above, unless the marks distribution sheet (downloadable at LMS) is filled out and signed by all.

Any problems with your own group should be settled internally first, professionally, and as early as possible. If it cannot be resolved, then you may involve the module lecturer by approaching via e-mail. If the issues continue until submission of the assignment, a mark distribution sheet needs to be submitted and all members will have to sign the sheet. Marks will then be allocated according to the task distribution and marks distribution sheet information.

Grading Criteria

Marks will be assessed based on the criteria given below:

Criteria	Percentage
Implementation of at least five (5) features for server application (55%)	
Implementation complexity <ul style="list-style-type: none"> Each feature implementations affect the state of the application. Each feature is appropriate for networked application of the theme. Marks allocation will be based on the complexity of the features and appropriate for server client application. 	50%
All features are unique from one another.	5%
Server Client Concept (20%)	
No direct user input in server application.	3%
The server can handle multiple independent sessions and all client and server application features work accordingly.	5%
All communications are done through sockets.	3%
All communications are using binary input / output.	4%
Server's data should remain consistent for all clients.	5%
Code Structure (5%)	
Basic code structure <ul style="list-style-type: none"> Consistent naming scheme (for classes, variables, methods). Consistent code structure and easy to read. The codes are properly commented. 	5%
Group Collaboration in GitHub (10%)	
<ul style="list-style-type: none"> The respective group's GitHub repository are consistently committed meaningful implementation to their source code. Each member committed at least five (5) meaningful implementations to their respective group GitHub repository's source code. 	10%
Video Demonstration (10%)	
<ul style="list-style-type: none"> Demonstrated and explain what and how to interact with the features in client application. Demonstrated and explain what the features in server application are. Demonstrated within 5 to 10 minutes with each member explains their respective features. 	10%
TOTAL PERCENTAGE	100%

Assignment Rules

1. Any problems with your own group should be settled internally first. If it cannot be resolved, then you may involve the module lecturer. Module lecturer has the rights to not entertain if the complaint is highlighted within five (5) working days before the assignment's deadline.
2. You may consult with the module lecturer if you are not clear with the assignment. But the module lecturer has the rights not to entertain any questions except for questions in regard to submission on the day of the assignment's deadline.
3. Any deliverables your group hand-in are considered as the group's own work unless it was stated otherwise (using proper referencing). No marks will be given on the work if no reasonable effort being done on top of the referenced work.
4. Any deliverables that are under suspicion of **Plagiarism, Ghost Writing, Collusion** and **Purloining**, the student(s) will be asked for further explanation to prove their understanding and originality of their work.
5. Failure to prove the originality or understanding of their work will result in **FAILURE (0 marks)** of the assignment.
6. Students are encouraged to use Git and GitHub private repository to host their assignment which can be used as their evidence for their effort and work.
7. Students are to make sure the submitted softcopy are not corrupted. Corrupted submission will be penalized accordingly.
8. Penalties of 10% deduction of marks for assignment received for each working day after the due date. Marks will be capped to 50% if the marks are less than 50% after deduction.
9. Rules may be updated from time to time. Any updates will be posted on the LMS.

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