

**Discipline of Information Technology,**

**Media and Communications**

**College of Arts, Business, Law and Social Sciences**

**ICT374 ASSIGNMENT 2**

**PROJECT DECLARATION**

**Group Members (full name and student number):**

**Member 1:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_James Chen Qing Ru\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Member 2:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Ang Kok Leong\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Tutor’s Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Kang Leng\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Assignment Due Date: \_\_\_\_10Apr 2021**\_\_\_\_\_\_\_\_\_\_\_\_ **Date Submitted: \_\_\_\_\_\_**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Project Number (please tick):**

🞎Project1: A Simple Unix Shell

✓Project 3: A Simple HTTP Client and Server

🞎Other Project (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Your assignment should meet the following requirements. Please confirm this (by ticking boxes) before submitting your assignment.**

✓All details above are completed.

✓We have read and understood the Documentation Requirements of this assignment

✓**This assignment submission is compliant to the Documentation Requirements.**

✓The archive file (a zip file) contains the file “Assignment2.docx”

✓We have included all relevant Linux source code, executables and test files in the tar archive. The file names are chosen according to the project specification.

✓This archive file will be submitted to ICT374 Unit LMS.

✓We have kept a copy of this assignment, including this archive file, in a safe place.

✓We have completed Task Allocation and Completion Record below.

✓**We have signed the Group Declaration in the next page.**

**The unit coordinator may choose to use your submission as sample solutions to be viewed by other students, but only with your permission. Please indicate whether you give permission for this to be done.**

* Yes, we are willing to have my submission without change be made public as a sample solution.
* Yes, we are willing to have my submission be made public as a sample solution, as long as my submission is edited to remove all mentions of my identity.
* No, we are not willing to have my submission made public.

**Group Declaration**

As a group assignment, each member of the group is expected to make an equal contribution to the assignment and receives the same mark for the assignment.

However, we recognise that on some occasions and due to various reasons, the actual contributions to the assignment from the members could be unequal despite the best efforts of each member. In this case, we can still accept your assignment provided that all members of the group reach an agreement on their percentages of contribution to the assignment, and the agreement accurately reflects the real contribution by each member. In such a case, a member’s mark is linked to his or her agreed contribution to the assignment and is calculated using the following formula:

A member’s mark = minimum ( group mark x the member’s percentage of contribution x 2, group mark + 10, 100 )

On some rare occasions, the two members of the group fail to reach an agreement on their contributions to the assignment. In such a case, in order for your assignment to be marked, each member of the group must complete a detailed *Task Breakdown List* and state his or her own claim of the percentage of contribution to the assignment. Your tutor will then award each member a mark based on his assessment of the quality of the assignment as whole as well as his assessment of that member’s contribution to the assignment based on the information provided.

Please complete and sign ***one*** of the three declarations below:

|  |
| --- |
| *We have made* ***equal*** *contributions to this assignment. We understand that each of us will receive the same mark for this assignment.*  Signature (member 1): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Signature (member 2): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| *We have made* ***unequal*** *contributions to this assignment. The percentage of contribution by each of us is given below (note the sum of the contributions by the two members must be equal to 100%):*  Member’s name: Contribution (%):  Member’s name: Contribution (%):  *We understand that each of us will receive a mark for this assignment that is linked to our contributions to the assignment. The mark will be calculated using the following formula:*  A member’s mark = minimum ( group mark x the member’s percentage of contribution x 2, group mark + 10, 100 )  Signature (member 1): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Signature (member 2): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| *We are unable to reach an agreement on the percentage of our contributions to this assignment. However, in order for our tutor to be able to properly assess the work completed by each of us, each of us has completed a detailed Task Breakdown List which is included in this submission. We will accept our tutor’s determination of our contributions to this assignment.*  Signature (member 1): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Signature (member 2): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

**List of Files:**

List the name and purpose of each file included in the tar archive.

|  |  |  |
| --- | --- | --- |
| **Name** | **Type** | **Purpose** |
| Myftp.c | C file | Client initialization program |
| Myftpd.c | C file | Server initialization program |
| BUILD | File |  |
| **FTP\_CLIENT** | **Folder** |  |
| ftp\_client.c | C file |  |
| ftp\_client.h | Header file |  |
| ftp\_client\_driver.c | C file |  |
| ftp\_client\_driver.h | Header file |  |
| BUILD | File |  |
| **FTP\_SERVER** | **Folder** |  |
| ftp\_server.c | C file |  |
| ftp\_server.h | Header file |  |
| ftp\_server\_driver.c | C file |  |
| ftp\_server\_driver.h | Header file |  |
| Server\_daemonize.c | C file |  |
| Server\_helper\_function.h | Header file |  |
| BUILD | File |  |

**Project Title**

ICT374 Assignment 2 Project 2 – A Simple File Transfer Protocol

**Brief Description of the project**

Design and implement a simple network protocol that can be used to download files from a remote site and to upload files to a remote site, and a client and a server programs that communicate using that protocol. The protocol should use TCP as its transport layer protocol. The server must be able to serve multiple client requests simultaneously. For simplicity, do not consider any authentication process in this project, hence the server will provide its service to any client with the right site address and port number.

**Self-Diagnosis and Evaluation**

Provide a statement giving

* 1. a list of features that are fully functional.
  2. a list of features that are not fully functional (include features that are not fully implemented, or not implemented at all).

This statement is important and essential. There will be a heavy penalty (>50%) if this statement is too vague, short of details and/or misleading.

**Discussion of solution**

In particular, you should emphasise any aspect of your solution that is novel or unusual, such as use of particular data structure or algorithm. You should also discuss technical choices available to you, the consideration behind your technical choice, and whether the result of your solution meets your expectation. You should highlight the strength and weakness of your solution and point out what improvement can be made to your solution.

**Protocol**

For Project 2 (A Simple File Transfer Protocol), you must include your protocol specification here

a

**Test Evidence**

When testing your program, you should turn on gcc warnings (gcc -Wall ...) and fix all warnings before submitting your program.

You must provide sufficient number of test cases to demonstrate and convince your tutor that your project has met all requirements.

For each test case, you should 1) explain the purpose of the test, 2) provide the test output including the command line used, and 3) give an explanation on what the test has achieved based on the test results.

It is important that you present a sufficient number of test cases to convince your tutor that your solution works in all situations. Please note that although your tutor may test your program to verify the evidence presented in your documentation, it is not the responsibility of your tutor to test your program for the purpose of finding marks for you. It is up to individual student to mount a convincing case that the submitted solution works as required. You will be awarded marks based on the test evicence you have presented. Therefore if you do not provide test evidence you do not get marks regardless of whether your program works or not, or if the test evidence you have provided is not sufficient, your marks will be substantially reduced.

You should format your test output using fonts such as courier so that test output is clearly distinguishable from the rest of the document. You should not modify the test output unless it is too long and repetitive.

In presenting your test cases, do not use the tabular format that you may have been told to use in some other units. Simply present one test case after the other in a linear order.

**Source Code Listing**