# Student Details

Student Name:

Student Id:

# Instructions

Each challenge focuses on a separate element of the skills test.

There are 4 challenges in total. Each is worth AN EQUAL number of Marks (25). You will need to get 75% overall to pass the module.

For each challenge you will need so submit evidence of completing the task, this will usually be a screenshot, but may be a code snippet.

To make the code snippet easy to read, I would recommend using a formatted such as planet or hilite.me;

http://hilite.me/

You are free to use whatever appropriate environment to complete the rest of the Challenges, this could be your own machine, or the VM that was used for the programming module.

Some of the instructions in this document might be vague or require you to solve other problems first, such as technical issues or changing settings for a VM. This is all part of the test: these are things you should be able to debug.

## GitHub Repository

The Files you need can be found in the Relevant Weeks Directory on Github

<https://github.com/coventryuniversity/4062_22>

# Submission

Submit the document via the **Correct link on Aula.** There will be two links, one for those with Extra time. If you submit to the extra time link but are not entitled to extra time. You attempt will not be marked.

# Academic Misconduct

The university has a **zero-tolerance** policy on academic misconduct.

This includes:

* Submitting work that is not your own. (This includes paying for / asking another student to do the test for you)
* Collusion, that is working together with other students on an assessed piece of work. Unless the work is specifically a group project. (Which this is not)

Penalties can be severe, ranging from failing the attempt to being withdrawn from the course.

# Challenge 1: Windows (25 Marks)

**For each of these challenges you can use either Powershell or cmd.exe. You are free to**

**Chose the most appropriate shell for each task**

## Task 1.1

You will need to download the file (from the GitHub Repository):

<https://github.com/coventryuniversity/4062_22>

The File is under Test4/ Windows.txt

In a command shell (cmd or PowerShell), navigate to the download location

Display the contents of the file in the shell window, showing only those lines that have the word **“barney”** (case sensitive) in them

Task 1.1 Evidence: Screenshot of shell, showing the commands above

## Task 1.2

Using the command line sort the contents of the file into **numeric / alphabetical order.**

And redirect the output to a new file called “sorted.txt”

Use the “more” command to show the contents of the file (The first page is sufficient for output)

Task 1.2 Evidence: Screenshot of shell, showing output of the above

## Task 1.3

Using the command line **Show current user**

Task 1.3 Evidence: Screenshot of shell, showing output of the above.

## Task 1.4

Using the command line, **show the location of the calc.exe program**

Task 1.4 Evidence: Screenshot of shell, showing output of the above.

# Challenge 2: Linux (25 Marks)

For this Test you will need to have started the relevant challenge on the VM

You can Log in **Using SSH** as the user “user” with the password “user”  
  
Task 2.1

* Download the file from github:
* The file you require is Test4/Linux.sh

**Run the Script and show the output**

Task 2.1 Evidence: Screenshot of the output

Task 2.2

Run the command again, but this time use IO redirection to **show only the 4th column of the programs output**

Task 2.2 Evidence: Screenshot of the output of the script sorted in ascending order.

## Task 2.3

There is a file on the system called **FindMe**

1. Use a single command to locate this file.
2. Run the program and save STDOUT to a text file.
3. Use cat to display the contents of the file you created

Task 2.3 Evidence:

* Command used to locate the file
* Screenshot of Line containing text

## Task 2.4

Show a screenshot of the manual page for COMMAND OF THE DAY. On the day, you will be given a description of a command. You must find the command and show its manual page.

**(**You may get the error message **can't set the locale; make sure $LC\_\* and $LANG are correct** this has no effect on the commands output)

***The Command for Today is a program that can help with : “secure copy”***

*(NOTE: there may be two of these listed, one is an alias to the other, so the man page for either of them will be accepted.*

Task 2.4 Evidence: Screenshot of the man page for the relevant command

## Task 2.5

Show **Location of the “cat” command**

**Task 2.5 Evidence: Screenshot of command(s) showing the above information**

## Task 2.6

Show the **Disk Usage and Free Space in the file system**

**Task 2.6 Evidence: Screenshot of command(s) showing the above information**

# Challenge 3: Coding (25 Marks)

The Code for this challenge can be found in the GitHub repository:  
(See instructions for a link)

Following the instructions in the README file, install a copy of the program. You may need to use a package manager to install some dependencies

IMPORTANT: You need to fix the Code, not the Test Cases.

For the Code submission:

* you only need to include the functions you have changed
* To pass you need to format the code properly (for example using http://hilite.me/ )

## Tasks 1 and 2

Using the command line run the program and use the interpreter output to fix the bugs.

Task 3.1 Evidence: Screenshot showing the output of the program

Task 3.2 Screenshot of the code showing the fix made for Syntax Error.

## Tasks 3 and 4

There are also some logical errors in the code. Run ***pytest*** to see which unit-tests fail.

Modify the program source code to fix the errors so the tests can pass.

Task 3.3 Evidence: Screenshot of the pytest output showing all tests pass

Task 3.4 Screenshot of the code showing any fixes made for Logical Error**.**

Challenge 4 (25 Marks)

For this Test you will need to have started the relevant challenge on the VM

Task 4.1  
What is your current machine’s IP address? Show a screenshot of how you determined this.

Task 4.1 EVIDENCE: Screenshot of your IP address

Task 4.2  
What is the IP address of the web server at the domain **github.com**?

Task 4.2 EVIDENCE: Answer

Task 4.3

Start the Network task on the VM. Which ports are now available?

Task 4.3 EVIDENCE: Port list

Task 4.4  
One of the ports is typically used for **MYSQL** but is doing something else.

1. When you connect to the service, it should display a flag (i.e., *CUEH{SOME\_TEXT}), What* is the Flag?
2. The service will ask for a passphrase, send your university email to the service. What is the output?

**NOTE: You can submit both items as a single screenshot**

Task 4.4 EVIDENCE: Flag

**Task 4.5 EVIDENCE: Output after passphrase is sent**

Task 4.6  
How many network hops are between your current machine and **stackoverflow.com**? Show how you determine this.

Task 4.6 EVIDENCE: Screenshot of command and output