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For Assessment Submission
June 2015 to June 2016**

GCSE COMPUTING

A452 Practical Investigation

CONTROLLED ASSESSMENT MATERIAL 3

This assessment may be periodically reviewed. Please check on OCR Interchange that you have the Controlled Assessment material valid for the appropriate assessment session.



INSTRUCTIONS TO TEACHERS

- Please refer to Section 4 of the GCSE Computing specification for instructions on completing this controlled assessment task.
- The marking criteria should be available to candidates whilst completing the task.
- The quality of written communication will be assessed in the conclusions and evaluation section.
- The total number of marks for this unit is **45**.

INFORMATION FOR CANDIDATES

- This document consists of **4** pages. Any blank pages are indicated.

Teachers are responsible for ensuring that assessment is carried out against the Controlled Assessment set for the relevant examination series (detailed above).

Assessment evidence produced that does not reflect the relevant examination series will not be accepted.

The purpose of this unit is to investigate a topic chosen from a set of options supplied by OCR. In this investigation, there will be an opportunity to look in depth at an aspect of computing that goes beyond the subject matter outlined in A451. The tasks will require a significant element of practical activity, which must be evidenced in the report and which will form a major element of the assessment. The topics will enable practical investigation and some supplementary research to be carried out in a variety of ways. These will include, but are not restricted to:

- practical investigations with hardware or software
- practical investigations with online resources.

Supplementary research may be required and resources may include:

- web-based enquiry
- contact with IT professionals
- research using computer-industry publications.

Candidates should complete all tasks.

Linux

The following task may be carried out on a Raspberry Pi or other Linux-based computer.

Throughout your work, explain fully the thinking that underlies decisions that you have made.

Use screenshots where appropriate to demonstrate your planning, explanations and comments.

All third-party material used to support your work must be properly referenced.

Your assignment

1. Log in to your Linux computer. If necessary, open a terminal window. You will see the command prompt. Describe and explain each part of the command prompt that you see.
2. At the command prompt, type `ls` and press Enter. Explain what happens.
3. Type:
`ls | grep D`
 Try other letters as well as `D`. Explain what happens and how this is an example of a pipe.
4. Enter the commands:
`ls > list`
 and then
`ls >> list`
 Explain how and why these commands produce different results.
5. Try out the following commands and explain with screen shots what they do:
`cd ..`
`cd /etc`
`cd /`
`cd ~`
6. Create a new directory called *yournameA452* off your root directory, where *yourname* is your first name.
7. Create a text file called '*yourname text file*' (with spaces). Again, use your own first name instead of *yourname*. Write a few sentences to store in this file. Make a copy of this file with a different name. Explain how you did this.
8. There is a program called TREE. Install it from the command line. Explain in full how you did this and how you overcame any problems you encountered.
9. Run TREE from your home directory. Explain and demonstrate what it does. Use output redirection to do this.

10. (a) Navigate to the `bin` directory. Make a text file of the directory entries that you find there, making sure that you display the attributes of all the files stored there. You should direct the file to be stored in the *yournameA452* directory that you created earlier. Make a screenshot of the contents of your A452 directory to verify that this file has been stored there.

- (b) One of the lines in the file should look similar to this:

```
-rwxr-xr-x 1 root root 920788 Mar 28 2013 bash
```

Explain in detail what this entry means.

- (c) Explain, using examples, the purpose of the `bin` directory.

11. Go to the root directory. From here, delete the copy of the text file that you stored earlier in your A452 directory. Explain how you did this.
12. A computer network usually has many users. It is useful when administering a computer system to be able to add and delete users and grant them privileges. If you put users into groups, such as teachers and students, you can make it easier to look after the security of a system.
- (a) Create ten new users for your Linux computer. Some should be students and some should be teachers. Assign them all passwords.
- (b) Create two groups called **teachers** and **students**. Assign the users to their groups.
- (c) Demonstrate that these users have been created and are assigned to their correct groups. Explain how you performed these actions and checked that they had been successful.
13. Linux enables tasks which are regularly carried out to be automated through the use of shell scripts. Plan, write and test a shell script that could automate the task of creating new users and assigning them to groups.
14. Discuss how some of these tasks could have been done in a computer system running Windows or another operating system.



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