Level 2 Create automated procedures for ICT Operating Systems (7266/7267-416/7450-234)

www.cityandguilds.com/e-quals07
November 2008
Version 2.0

e-Quals
Assignment guide for Candidates
Assignment C

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Introduction – Information for Candidates

About this document

This assignment comprises all of the assessment for Level 2 Create automated procedures for ICT Operating Systems (7266/7267-416/7450-234).

Health and safety

You are asked to consider the importance of safe working practices at all times.

You are responsible for maintaining the safety of others as well as your own. Anyone behaving in an unsafe fashion will be stopped and a suitable warning given. You will **not** be allowed to continue with an assignment if you compromise any of the Health and Safety requirements. This may seem rather strict but, apart from the potentially unpleasant consequences, you must acquire the habits required for the workplace.

Time allowance

The recommended time allowance for this assignment is **3 hours**.

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Candidate instructions

Candidates are advised to read **all instructions** carefully before starting work and to check with your assessor, if necessary, to ensure that you have fully understood what is required.

Time allowance: 3 hours

Assignment set up: A scenario is provided for candidates in the form of a company specification for services they require.

This assignment is made up of **three** tasks

- **Task A** - requires candidates to explore different strategies for allocating storage space.
- **Task B** - requires candidates to explore the actions required to transfer software between computers with different architectures.
- **Task C** - required candidates to work with command languages.

Scenario

Pyramid Systems specialise in developing software for operating systems. They have been hired to provide solutions for a client's problems. As a contracted employee of Pyramid Systems your manager has assigned you the task of providing solutions for a range of problems.

Task A

Pyramid Systems have been contracted to write software for operating system memory and file allocation and storage protection for a multi-user multitasking system.

Two storage strategies are being considered.

Strategy 1 – Best Fit

This strategy finds the smallest area of free storage that is large enough to fulfil a request. It allocates the requested size and then reduces the size of the block remaining free.

Strategy 2 – Worst Fit

This strategy finds the largest area of free storage available to fulfil the request. It allocates the requested size and then reduces the size of the block remaining free.

Table.1. below shows the allocation of storage at a given moment in time:

Storage locations	**Used or Free**
5000 to 5200	Used
5201 to 5699	Free

5650 to 5850	Used
5851 to 6000	Free
6001 to 6200	Used
6201 to 6260	Free
6261 to 6550	Used

Table.1.

Request are received for the allocation of

50 bytes
100 bytes
20 bytes
450 bytes

1 For **each** of the above FOUR allocations, produce a diagram to show the effect on the store layout using Strategy 1.

2 For **each** of the above FOUR allocations, produce a diagram to show the effect on the store layout using Strategy 2.

Table.2. below shows the allocation of storage for programs at a given moment in time:

Storage
Program D
Program A
Program D
Program B
Program A
Program C
Program A

Table.2.

3 Suggest a method which can be used to prevent a running program from corrupting the area of memory being used by another program.

Task B

A client has contacted your manager because a software application written in C, which is running on his current system, needs to be run on a new system with a different architecture. Your manager has asked you to provide advice about the change.

1 Suggest ONE reason why the executable program cannot be copied on to the new system and run with no further action taken.

2 Suggest TWO actions that need to be taken to ensure that the software runs and provides the correct results on the new system.

Task C

Your manager has asked you to write some file housekeeping tasks using a command language. The code should be fully commented and include the procedure name and author name.

1 Create three directories called TEST1, TEST2 and BACKUP.

2 Use a text editor to create a file called FILE1.TXT. The file should include the following text:

> This file is called FILE1.TXT and is used to test the procedure SHOWTEXT.
> The file was created by *your name*.

3 Save FILE1.TXT in the directory TEST1.

4 Using a command language
   a. create and run a procedure that performs as follows:
      - copies all the files in the directory TEST1 to the directories BACKUP and TEST2 and displays a directory listing of the TEST2 and BACKUP directories if successful
      - displays an error message "An error has occurred in COPIES" on the screen if unsuccessful

      evidence can be provided by redirection of output or a screen print
   b. name the procedure COPIES
   c. save the procedure in the TEST1 directory
   d. print a listing of the commented procedure COPIES.

5 Using a command language
   a. create and run a procedure that performs as follows:
      - renames all files with an extension of .TXT in the directory BACKUP with an extension of .BAK, then displays a directory listing of the directory BACKUP on the screen if successful
      - displays an error message "An error has occurred in REN" on the screen if unsuccessful

      evidence can be provided by redirection of output or a screen print
   b. name the procedure REN
   c. save the procedure in the directory TEST1
   d. print a listing of the commented procedure REN.

6 Using a command language
   a. create and run a procedure that performs as follows:
      - deletes all the files in the directory TEST2 then displays a directory listing of all the files in the directory TEST2 on the screen if successful
      - displays an error message "An error has occurred in DELFILE" on the screen if unsuccessful

      evidence can be provided by redirection of output or a screen print
   b. name the procedure DELFILE
   c. save the procedure in the directory TEST1
   d. print a listing of the commented procedure DELFILE.

7 Using a command language
   a. create and run a procedure that performs as follows:
      - displays the contents of the file FILE1.TXT on the screen if successful

- displays an error message “An error has occurred in SHOWTEXT” on the screen if unsuccessful

evidence can be provided by redirection of output or a screen print

b. name the procedure SHOWTEXT
c. save the procedure in the directory TEST1
d. print a listing of the commented procedure SHOWTEXT.

8 Using a command language

a. create and run a procedure that performs as follows:
   - runs the procedures SHOWTEXT, COPIES, REN and DELFILE one after the other
   - if COPIES does not run successfully, then REN and DELFILE should not be run
   - if REN file does not run successfully then DELFILE should not be run

   evidence can be provided by redirection of output or a screen print
b. name the procedure TIDY
c. save the procedure in the directory TEST1
d. print a listing of the commented procedure TIDY.

Note

- At the conclusion of this assignment, hand all paperwork and removable media to the test supervisor.
- Ensure that your name is on the removable media and all documentation.
- If the assignment is taken over more than one period, all removable media and paperwork must be returned to the test supervisor at the end of each sitting.

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