Level 2 Software testing (7540-012)

Systems and Principles
Assignment guide for Candidates
Assignment B

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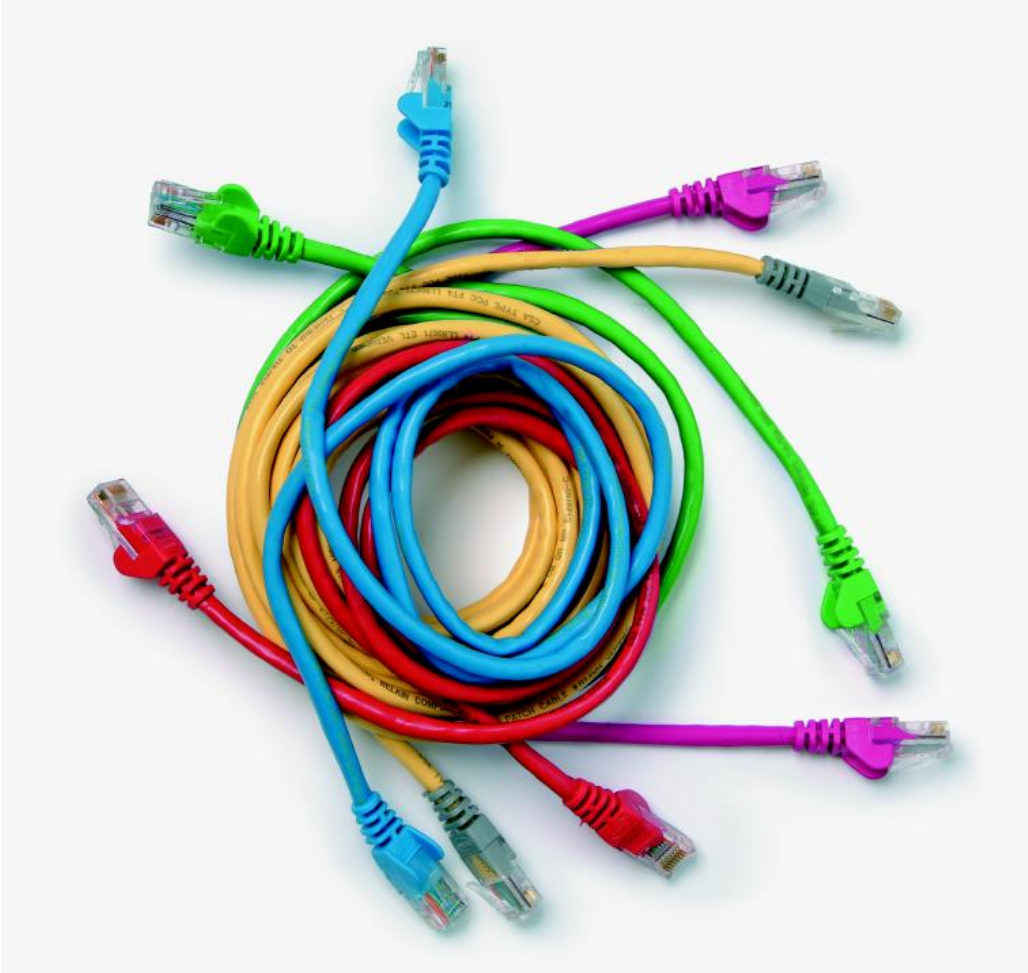

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Introduction – Information for Candidates

About this document
This assignment comprises all of the assessment for Level 2 Software testing (7540-012).

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**.

Level 2 Software testing (7540-012)
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

This assignment is made up of **one** task

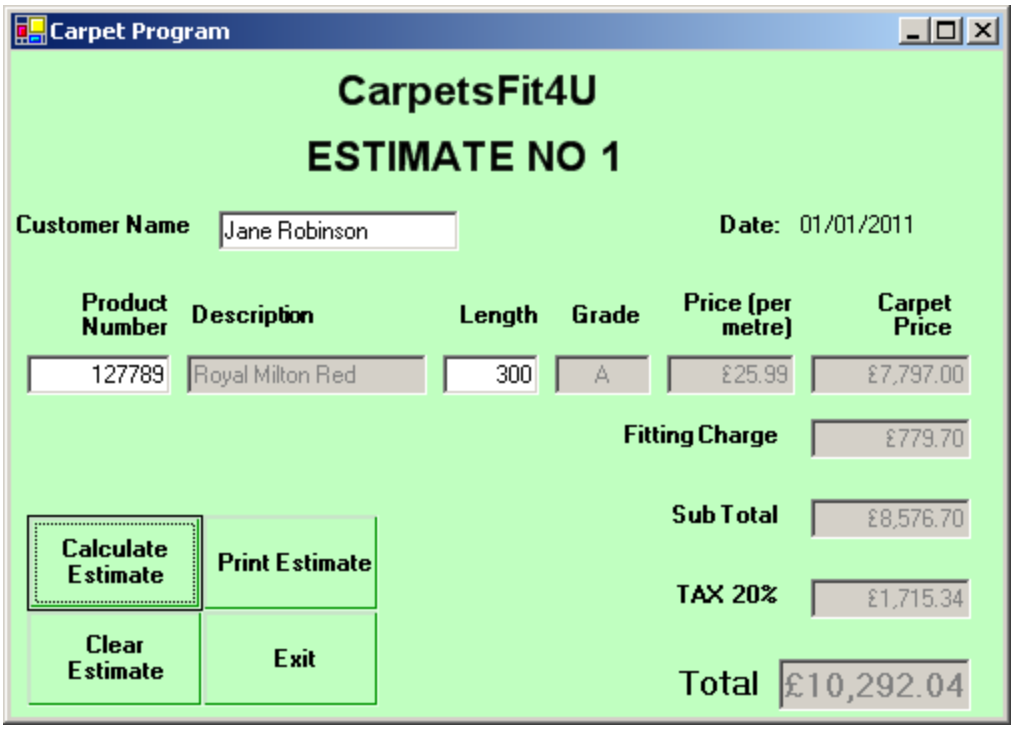
- **Task A** - provides a specification for the software which requires testing.

Scenario

You are employed as a consultant for Beta Software Systems. As an employee of Beta Software Systems, you have been asked to assist in the testing of software, written for the client CarpetsFit4U, used to calculate an estimate for carpet fitting.

Task A

In this task you are required to carry out testing of the supplied **CarpetEstimate** software. The screen input form appears as shown below.



The input file **Carpet.txt** is opened automatically by the software and should be stored in the same directory. The file can be opened, amended and printed using a text editor eg Notepad. The fields on the input screen for Description, Grade and Price (per metre) are completed by using the input file as a lookup table when the product number is entered. The file should contain the product number, description, grade, and price per metre for the carpets in a comma delimited format as shown below:

```
127789,Royal Milton Red,A,25.99
228789,Royal Milton Red,B,22.99
107789,Royal Milton Red,C,19.99
206779,Royal Milton Red,D,15.99
```

There are four grades of carpet A, B, C, and D for each type of carpet, with grade A being the most expensive.
The Fitting Charge is calculated according to which grade of carpet is being fitted as follows:

Grade	Percentage
A	10%
B	7.5%
C	5%
D	2.5%

Each time the software is run the Estimate Number starts at 1. After each estimate is calculated and/or printed the Clear Estimate button should be used to clear the data from the estimate and increase the Estimate Number by 1.
The software specification requires validation to be performed on the input as shown in the table below.

Field	Validation
Product Number	Not spaces Modulus 10 Must be 6 digits Numeric
Length	Numeric

See **Appendix A** for an explanation of Modulus 10 numbers

The error messages are specified as shown in the table below:

Error Number	Error Message
1	001: Product Number not found in file
2	002: Cannot print Estimate *(this would be caused by a hardware fault eg printer not available)*
3	003: Estimate not complete, cannot print
4	004: Product Number is not numeric
5	005: Product Number is not 6 digits
6	006: Product Number is not a valid modulus 10 number
7	007: Length is not numeric

The print layout for the printed estimate is shown on the next page.

CarpetsFit4U
75 Royal George Road
Crawley
RH12 6GH

Estimate No Z9

Date: 99/99/9999

Customer Name: Jane Robinson

Product Number	Description	Length	Grade	Price per metre	Carpet Price
999999	XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	999	A	£Z9.99	£Z,ZZ9.99

Fitting Charge	£ZZ9.99
Sub Total	£Z,ZZ9.99
Tax 20%	£Z,ZZ9.99
Total	**£ZZ,ZZ9.99**

Estimate valid for 30 days from date of estimate

The digit 9 stands for numeric data, the character X stands for alphanumeric data, the character A stands for alphabetic data and the character Z stands for zero suppression eg Z9 would represent the data 01 as 1.

1 Complete the test plan provided for the test cases by adding the test data and expected results.

2 Use the test plan to carry out the tests and record the actual results in a test log. Add comments for any discrepancies found between the actual and expected results.

3 Provide evidence of file input, printed output and screen prints where appropriate which must be cross-referenced to the testing.

4 Please use the Answer Sheet provided to complete Task A4.
Briefly describe how a software component is represented by a stub.

5 Please use the Answer Sheet provided to complete Task A5.
Name and briefly describe the stages of testing.

6 Please use the Answer Sheet provided to complete Task A5.
State **one** difference between black box and white box testing.

Note

- Candidates should produce the following for their assessor:
    - A completed test plan with test data and expected results
    - A test log that records and compares results and comments on any discrepancies
    - Cross-referenced evidence of testing: ie file input, printed output, screen prints as necessary to show test results
    - Completed Answer sheet.
- 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.

Appendix A

Modulus 10 check

A modulus 10 check is carried out as follows:

Multiply each digit in the product number, staring at the right, by the number 1, then 2, then 3 etc.

Multiply by	**6**	**5**	**4**	**3**	**2**	**1**
Membership number	1	2	7	7	8	9
Result	6	10	28	21	16	9

The result of each multiplication is added together.

6 + 10 + 28 + 21 + 16 + 9 = 90

The result of the addition is then divided by the modulus (10).

90 divided by 10 = 9 remainder 0

If the remainder from the division is 0 the product number is a valid modulus 10 number otherwise the product number is not a valid modulus 10 number.
The remainder is 0 so the product number 127789 is a valid modulus 10 number

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