**Assignment set up: A scenario is provided for candidates in the form of a company**

**specification for a service they require.**

**This assignment is made up of four tasks:**

**• Task A - provides an outline design specification for a software component to validate**

**input.**

**• Task B - provides criteria that should be followed by candidates when producing their**

**design work.**

**• Task C - provides a specification for the software which requires functional testing.**

**• Task D - provides criteria that should be followed by candidates when producing the testing**

**documentation.**

**Scenario**

**A software development company, Global Systems, develop software for use by clients. Software is being developed to create and maintain membership details for a sports club. You have been asked to design the software component that validates input. You are then required to test the whole program after development.**

**Task A**

***Candidates should use the following specification to fulfil the company's requirements.***

**In this task you are required to design the routines for validation of member records. The validation routine will be called by another routine. If a field is invalid the appropriate error message must be displayed. When every field in the screen input form has been accepted control must be passed back to the calling routine. Shown below is the screen input layout for a member record.**

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**1 Use a program design language to produce the design for the validation routines. Perform all validation as required for the design. Any assumptions you make about the design must be documented.**

**Answer:**

[structure chart](hyperlink/structurechart.docx)

[Index.html](hyperlink/Indexsourcecode.docx)

Validate.js

**2 Some error codes have already been defined for the software and are shown below with their associated message.**

**Answer:**

[Error table](hyperlink/rulestable.docx)

[structure.js](hyperlink/Structurejssourcecode.docx)

**The error codes 10-14 are unassigned and if required can be used for extra error messages**

**for your routines. Document any new error messages used.**

**If the Membership Number is empty no error message is to be displayed and any other data entered is not to be saved when the Save Record button is clicked.**

**Answer:** [**Error Code 14**](hyperlink/errrocode14.docx)

**Task B**

***Check that you have followed the criteria below when producing the design for the validation***

***routines:***

**1 The design conforms to the design specification.**

**Answer: use case diagram**

**2 The design uses the most appropriate data type(s).**

**Answer: class diagram**

**3 The design is consistent and complete.**

**Answer: sequence diagram**

**4 The program design language clearly shows variable names and data types, constants,**

**argument names and data types, return value data types and any data structures used.**

**Answer:** [**state diagram**](hyperlink/State%20diagram.docx)

**5 The program design language clearly shows the beginning and end of each iteration,**

**selection and routine.**

**Answer: activity diagram**

**Task C**

**The software has now been developed and includes the routines for file creation, validation and printing. In this task you are required to carry out functional testing of the MEMBER software. The structure of the software routines developed is shown in the following structure chart. The output file is created as an append file and must be opened using a suitable filename. The file must be opened before data can be entered, validated or saved. The records are written to the file in text format with each individual field as string data terminated with a carriage return. The file can be opened, read and printed using a text editor (eg Notepad).**

**Ten member records must be printed per page and then a new page thrown with a heading.**

**Answer:** Pagination

**1 Prepare a test plan to carry out functional testing of the software.**

**Answer:** [Test Plan](hyperlink/testplan.docx)

**2 Prepare the test data to be used with the test plan.**

**Answer:** [Test Data](hyperlink/testdata1.docx)

**3 Use the test plan and test data to carry out a series of tests and record the test results in a**

**test log.**

**Answer:** [Test Log](hyperlink/Test%20log.docx)

**4 Use the test log to produce a report which specifies the presence or absence of errors and**

**makes proposals for rectifying errors and reports on the success of the test against the**

**original software specification.**

**Answer:** [Test report](hyperlink/testreport.docx)

**Task D**

***Check that you have followed the criteria below when producing the testing documentation:***

**1 The test plan contains a test number, date, purpose and type of test and expected outputs**

**for stated inputs.**

**Answer:** [**Test Plan**](hyperlink/testplan.docx)

**2 The test data tests the software execution under normal and exceptional circumstances.**

**Answer:** [**Test Data**](hyperlink/testdata1.docx)

**3 Evidence of printed output, screen prints and file output must be cross referenced to the**

**correct test number.**

**Answer:** [Test Evidence](hyperlink/testdata1.docx)