

**National Certificate: Information Technology (Systems Development) JAVA 1**

**DOCUMENT code: JAVA \_ National Exam**

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| **DATE:** |  |
| **Student Name:** |  |



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| **Unit Standart** | **SPECIFIC OUTCOMEs** | **ASSESSMENT CRITERIA** |
| 115359-Demonstrate an understanding of the handling of error in a computer programming environment | (ELO 2)Demonstrate how calculation errors are induced in the computer. | The demonstration explains overflow errors found in computers.    The demonstration explains underflow errors found in computers.  The demonstration explains conversion errors found in computers.  The demonstration explains errors found in computers because of advancement in processor word-sizes.  The demonstration explains how mistakes can be minimised.  The demonstration explains how errors can be minimised. |
| (ELO 3) Demonstrate how mistakes and computer errors can be minimized. |
| 115365 -Apply the principles of designing computer system inputs and outputs | (ELO 2) Design computer input and output functions. | The design meets the specification for the function.  The design can be implemented in the specified computer environment.  The design conforms to an industry recommended format for the function.  The creation ensures that the function format corresponds to the design.  The creation ensures that the function behaviour corresponds to the design. |
| (ELO 3) Create computer input and output functions. |
| 115362 -Manage software development source files using appropriate tools | (ELO 1) Locate software development source files. | The location ensures that the correct source file is identified.  The location ensures that the correct versions of additional files associated with the software development source files are identified.  Retrieval and updating of the source file is in accordance with organisation procedures.  Retrieval protects source files from loss while updates are in progress.  Retrieval prevents source files from being updated simultaneously by two or more people. |
| (ELO 2) Retrieve software development source files for update purposes. |
| 115367- Demonstrate logical problem solving and error detection techniques | (ELO 2) Use logical operators in descriptions of rules and relationships in a problem situation. | Usage describes the logical operators by drawing truth tables  Usage provides examples of problem situations where a specific operator can be used  Usage identifies which of the operators should be used to represent given situations.  Usage combines different operators to form Boolean expressions by setting up truth tables.  The simplification describes the rules of Boolean algebra  The simplification uses the Boolean algebra rules to simplify given expressions.  The simplification uses Karnaugh maps to represent Boolean expressions.  The simplification involves writing down the simplified expression from the map. |
| (ELO 3) Simplify Boolean expressions with Boolean algebra and Karnaugh maps.  . |
| 115373- Demonstrate an understanding of sort and search techniques used in computer programming | (ELO 1) Demonstrate an understanding of how abstract data types are stored on computers. | The demonstration identifies different abstract data types used in computer programming.  The demonstration identifies different data structures used to store abstract data types in a computer.  The demonstration identifies different types of sort techniques  The demonstration explains the working of different types of sort techniques  The demonstration explains typical problems found with sorting of data  The demonstration identifies different types of search techniques  The demonstration explains the working of different types of search techniques  The demonstration explains typical problems found with searching of data |
| (ELO 2) Demonstrate an understanding of sort techniques used to sort data held in data structures. |
| (ELO 3) Demonstrate an understanding of search techniques. |
| 115384 -Test a computer program against a given specification | (ELO 1) Test a computer program against given specifications according to test plans. | The testing executes operational steps identified in the test plan.  The testing uses input data as specified in the test plan.  The testing outlines deviations from the test plan, with explanations.  The testing follows the standards and procedures specified in the test plan for testing and re-testing.  The records are provided for all tests executed.  The records identify variations from expected test results and gives reason where available.  The recorded results are reproduced if the tests are repeated under the same conditions.  The recorded results are recorded in a way that allows the results to be reviewed.  The review allows improvements to be made to the application testing process.  The review follows organisation policy and procedures. |
| (ELO 2) Record the results from testing a computer program. |
| (ELO 3) Review the testing process for a computer program against organization policy and procedures. |

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| You have just received a project from a very important client.  The Client Gave the following specifications:   * The App must be a JAVA application * The app will be used to make reservations to the restaurant * The app must be linked to the internet and all changes and updates must reflect on the website * The app must allow people to book a table as well as a time for their dinner reservation * Waiters must be able to login * Each waiter is assigned specific tables * A waiter must be able to add a list of things ordered for each table(Bill) * A waiter must be able to search items to add to the bill of every table * The total for every item on the list must be calculated when the waiter clicks the checkout button * All data must be saved in a database   Specifications that your company has in place in order to do quality control:   * All Applications must make use of a class or classes in order to keep code clean and reduce the need to rewrite code this also includes inheritance * No code should be inserted directly into events, rather they should be added to functions and methods and only get called in the events * Error prevention must be applied where possible * Application must be able to check for and apply Updates * Abstract data types must be used where possible * In depth Testing manual must be created where the following must be included in the testing report: * Test for calculation errors * Record the results from testing a computer program.(Screenshots needed) * List all errors encountered and how you got to the solution * A comprehensive user manual must be created explaining and showcasing the app * Thorough planning document must be created that includes the following: * Application Flow * Design choice as well as motivation as to choice made * Application logic planning * Application database planning | | | | |
|  | | **Total Marks** | **Marks Obtained** | **Moderated** |
|  | | **290** | **0** | **0** |
|  | The app is an JAVA application | 10 |  |  |
|  | The app will be used to make reservations to the restaurant | 15 |  |  |
|  | The app must be linked to the internet and all changes and updates must reflect on the website | 15 |  |  |
|  | The app must allow people to book a table as well as a time for their dinner reservation | 20 |  |  |
|  | Waiters must be able to login | 10 |  |  |
|  | Each waiter is assigned specific tables | 10 |  |  |
|  | A waiter must be able to add a list of things ordered for each table(Bill) | 10 |  |  |
|  | A waiter must be able to search items to add to the bill of every table | 10 |  |  |
|  | The total for every item on the list must be calculated when the waiter clicks the checkout button | 15 |  |  |
|  | Database was created and the information is saved to the database | 20 |  |  |
|  | The application make use of a class or classes | 20 |  |  |
|  | The application make use of inheritance | 20 |  |  |
|  | The Application makes use of functions and methods | 20 |  |  |
|  | The application makes use of Error prevention | 15 |  |  |
|  | Application is able to check for and apply Updates | 20 |  |  |
|  | Abstract data types are used | 15 |  |  |
|  | Testing Manual is created as requested | 15 |  |  |
|  | Planning Manual is created as requested | 15 |  |  |
|  | User Manual is created as requested | 15 |  |  |
|  | Total: | 290/ | | |