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|  | NATIONAL JUNIOR COLLEGE  Mathematics Department  General Certificate of Education Advanced Level  Higher 2 | | | |
| **COMPUTING**  Paper 2 Lab-based | | | | **9569/02**  **2 July 2020**  45 minutes |
| Additional Materials: | |  | Electronic version of SCHOOL.TXT data file  Electronic version of STAFF.TXT data file  Insert Quick Reference Guide | |
| **READ THESE INSTRUCTIONS FIRST**  Answer **all** questions**.**  All tasks must be done in the computer laboratory. You are not allowed to bring in or take out any pieces of work or materials on paper or electronic media or in any other form  Approved calculators are allowed.  Save each task as it is completed.  The use of built-in functions, where appropriate, is allowed for this paper unless stated otherwise.  The number of marks is given in the brackets [ ] at the end of each question or part question.  The total number of marks for this paper is 10. | | | | |
| This document consists of 3 printed pages and 1 blank pages.  NJC Mathematics 2020 **[Turn over** | | | | |

**Instructions to candidates:**

* **Submit your solution folder/files at the repl.it link given by the invigilator.**
* **Resouce files are uploaded in the repl.it assigned.**

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| **1** | A school directory stores information about schools and staff teaching in the schools. It allows users to query for staff information working in a particular school and department.  Information about a school includes:   * SchoolCode: a unique 4-digit number to identify the school. * Name: name of the school. * Address: address of the school   For staff working in schools, the following information is recorded:   * SchoolCode : schoolcode of the school the staff is working at * Name: name of the staff * Department: the department in the school the staff belongs to * Contact: telephone number of the staff   It is assume that no staff working in the same schook will have the same name.  The information described above is currently stored in two files:   * SCHOOL.TXT * STAFF.TXT | |
|  | **Task 1.1**  Create an SQL file called TASK1\_1\_<your name>\_<NRIC number>.sql.  Write the SQL code to create the the  **two tables** in the database named schools.db. You are to create the necessary primary, foreign keys and constraints in your SQL code.  Excute the sql code in DB Browser to create the database and tables. | [2] |
|  | **Task 1.2**  The files SCHOOL.TXT and STAFF.TXT contain information currently stored in the school directory system. Write Python code to migrate them to the database tables created in Task 1.1. The database tables should only contain the data in the two files.  Save your Python code as  TASK1\_2\_<your name>\_<NRIC number>.py | [2] |
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|  | **Task 1.3**  Write Python code in the file main.py to generate a web form that allows a user to search for staff/s using two fields:   * + Name of School   + Department  1. The web form should be the default page when you access the web application 2. The search field for Name of School should allow for partial match. Example, the search for a school named "High" should return    * NTU High School    * Queens High School   The search field for Department should be an exact match. | [3] |
|  | **Task 1.4**  Write Python code in the file main.py to:   1. return a HTML page thate contains a table showing the results of the query **Task 1.3** 2. The information to be returned are:    * Name of school    * Name of staff    * Department    * Contact    * Address of school 3. The format of the results should look like:      |  | | --- | |  | | [[6] |
|  |  | [3] |
|  | **END** |  |