**DHB Program**

**Planning**

The program I plan to construct is for the local DHB (District Health Board) in order to record the Covid-19 injections. The program will be used by the operators at the vaccination centres all over New Zealand so that recording the injections will be more efficient by making it easier for operators to determine whether a person has already gotten the doses of the Covid-19 vaccine or not. The program will be written in English so the operators must be able to read and write the English language. The program will run on Python 3.7.

The program will be based on the following specifications:

* The program will flag the fact that no one under the age of 16 can get the vaccination.
* The program will allow the operators to enter a new person that is not on the list (after they hve called the ministry for the information).
* If the operator enters ‘yes’, when a person gets the vaccine, the program will allow the information to be updated and written to the text file.
* The program will determine the number of doses the person has already gotten and show this to the operator.
* The program will generate a date, 21 days in advanced which is the date for the next dose of the vaccination (if the person has not already gotten their second dose)
* The program will allow the operator to update only the address of the person.

When these specifications are met, I will make sure to work on the program making sure that the purpose of the program (creating a program in order to record the Covid-19 injections making sure that the person gets the right number of doses and at the right times) is also covered.

**Timeline**

I will follow a specific timeline in order to complete this task to my best ability by the due date. I plan to divide the project into 4 time periods.

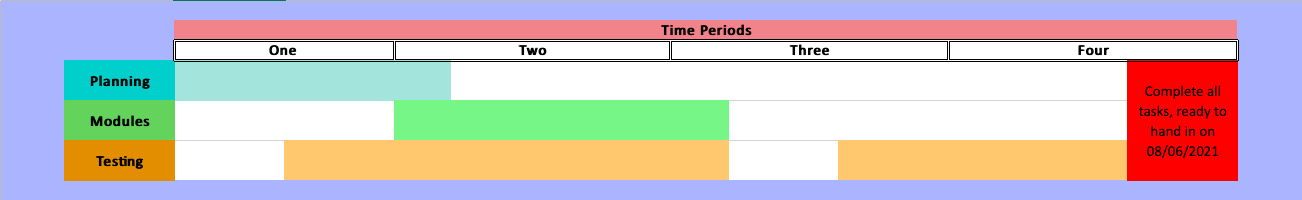
In the first time period, I will complete all the planning which outlines the specifications of the given brief as well as a logical design to be used as a foundation in order to code the program (in the following time periods). The planning will also include a suitable flowchart as well as clearly outline the purpose of the program and specify the computer language being used in the program. In this time period I will also clearly explain the input and output requirements of the program which involves the names and types of the variables. **The first time period consists of about 4 school (in class) periods and will end around 12/05/2021.**

In the second time period, I will start writing the code for the program. I will use the information from the first time period to help me write this code and have a working program. I will also meet with a friend or a family member who will test out my program and give me feedback.I will also consult with another friend in my PAD class or the teacher about any questions I may have. **The second time period consists of about 4 school (in class) periods and will end around 22/05/2021.**

In the third time period, I will use the feedback in order to test and debug up my program and record these updates in my testing document. Once again, I will consult with another friend in my PAD class or the teacher about any questions I may have. **The third time period consists of about 2 school (in class) periods and will end around 28/05/2021.**

In the final time period, I will make sure everything is done and ready to hand the program in as well as the planning and testing documents consisting of all requirements. **I will have 1 school (in class) period during this time. This time period will end around 01/06/2021 meaning I will have one week spare before I need to hand the assignment in.**

Ready to hand in for **08/06/2021**.



**Module List:**

|  |  |
| --- | --- |
| read in | read file in   * create dictionary {nhi num: [name, address, DOB, date injected, date next inject, vaccinated?]} |
| search | search for NHI number   * print name, address and DOB |
| age | check age   * print yes/no (if eligible for vaccine) |
| data | change data   * address change * add date to list within dictionary |

**Resources:** Me, my computer at home, the school computer, LucidChart, Python 3.7 and Wing IDE 6.1 on both computers (at home and at school).

**Input Information**

|  |  |  |  |
| --- | --- | --- | --- |
| **Input Variable Name** | **What it does (job/ role)** | **Data type** | **Further specifications** |
| nhi\_num | Variable used to write patients NHI number. | Integer |  |
| n\_nhi | Variable used to enter new NHI numbers | String |  |
| name | Variable used to label patients name | String |  |
| d\_o\_b | Variable used to label patients date of birth | Integer |  |
| age | Variable used to calculate the patients age | Integer |  |
| change\_address | Variable used to ask whether user wants to change the address of the patient. | String |  |
| new\_address | Variable used to enter the new address of the patient. | String |  |
| first\_dose | Variable used to determine whether the patient has been injected or not. | String |  |
| second\_dose | Variable used to create a date for the second dose | String |  |
| injected | Variable used to determine whether the patient has had both doses | String |  |

**Output Information**

|  |  |  |  |
| --- | --- | --- | --- |
| **Output Variable Name** | **Output format** | **Data type** | **Further specifications** |
| nhi\_num | Printing the variable nhi\_num as a string. Will be printed after operator searches for it in the dictionary | string | Print for every nhi\_num |
| Name | Printing the variable with the nhi\_num | string | Print for every nhi\_num |
| DOB | Printing the variable with the nhi\_num | string | Print for every nhi\_num |
| Address | Printing the variable with the nhi\_num | string | Print for every nhi\_num |
| First dose | Printing the variable with the nhi\_num | string | Print for every nhi\_num |
| Second dose | Printing the variable with the nhi\_num | string | Print for every nhi\_num |
| injected | Printing the variable with the nhi\_num | string | Print for every nhi\_num |

**Constant and Existing Data**

|  |  |  |
| --- | --- | --- |
| **Constant** | **Scope** | **Values set** |
| user\_age | will be used to calculate the age of the patient |  |
| nhi\_num | will be added to dictionary to search for the patient |  |
| name | will be added to dictionary to print information |  |
| address | will be added to dictionary to print information |  |
| d\_o\_b | will be added to dictionary to print information |  |
| first\_dose | will be added to dictionary to print information |  |
| second\_dose | will be added to dictionary to print information |  |
|  |  |  |

Calculation:

The age of the patient will be calculated using todays date and the patients date of birth.

age = todays date - d\_o\_b

For example: 07/06/2021 - 04/06/2016 = 5 years old - too young for vaccine.

Other calculation:

The date of the second dose will be determined by adding 21 days to the date of the first dose.

first dose date + 21 days = second dose date

For example:

First dose date 02/06/2021 + 21 days = 23/06/2021 - Second dose date.

**Modular Structure**

The code will be separated into modules. I will create a function for the heading of the program so that the operators at the covid vaccinations centre know what the program is about. The first module that will be created will be reading in the file and creating a dictionary. The second module created will be the module that checks if the NHI number is in the dictionary. If an NHI number is not in the dictionary, the operator will be asked to ring the Ministry in Wellington and get a new NHI number for the person. The operator will then be able to enter the details for this person and they will be added to the dictionary. The third module that will be created will be the module for checking the age of the patient. This module will determine whether the patient is eligible for the Covid-19 vaccination. The fourth module that will be created will be the module for the dates of the first and second doses as well as whether the patient has gotten both doses or not.

**Flow Chart**Diagram, schematic

Description automatically generated

**Expected & Unexpected Input**

For “nhi\_num”:

|  |  |
| --- | --- |
| Possible Input | Expected Outcome |
| “ ” | If NHI number cannot be found, details are able to be entered. These details are then saved to the file. |
| “J9547Z”  Or  “H9176R”  Or  “W7700U” | Information for NHI number entered prints. |

For “d\_o\_b”:

|  |  |
| --- | --- |
| Possible Input | Expected Outcome |
| “1983/08/4” | The program will reject the date and ask for it in the correct format. |
| “4/08/1983” | The program will continue running. |

For “address”:

|  |  |
| --- | --- |
| Possible Input | Expected Outcome |
| “” | input(“Do you want to change the address? (Y/N)”) |
| “!!” | input(“Do you want to change the address? (Y/N)”) |
| “sfayh” | input(“Do you want to change the address? (Y/N)”) |
| “246” | input(“Do you want to change the address? (Y/N)”) |
| “Y” | Continue running |
| “N” | Continue running |

For “first\_dose”:

|  |  |
| --- | --- |
| Possible Input | Expected Outcome |
| “” | input("Did the patient get their first dose? (Y/N) ") |
| “!!” | input("Did the patient get their first dose? (Y/N) ") |
| “sfayh” | input("Did the patient get their first dose? (Y/N) ") |
| “246” | input("Did the patient get their first dose? (Y/N) ") |
| “Y” | Continue running |
| “N” | Continue running |