

## Dutch Police Internet Forensics compliant registration system

### System Overview:

1. This System will allow the user to register a complaint in the system
2. This System will allow the user to register for the first time in the system
3. This System will allow police to register in the system to access a separate function from the system
4. This system will allow the police user to search through complaint stored in the system
5. This system will store the data in encrypted database
6. This system will use MFA to authenticate users

### System Security Function:

1. Encrypted database
2. User input details are validated
3. Incorrect inputs are not accepted
4. User will need OTP to access the system

### Options Menu

\*\*\*\*\*

Press 1 for New Complaint Registration...

Press 2 for Existing user login

Press 3 for Police Member login

Press 4 for Exit

\*\*\*\*\*

Enter Your Choice [1 or 2 or 3]

## Option 1: ##

\*\* New Complaint Registration \*\*

When the user enters option 1, it will ask the user to enter the following information

1. First Name: {Only Alphabet with minimum 2 and Maximum 15}
2. Last Name: {Only Alphabet with minimum 2 and Maximum 15}
3. Date of Birth: {Format yyyy-mm-dd}
4. Password: { 8 < 16 > characters long and contain at least one letter from each set [A-Z][a-z][1-9][~!@#\$\$%^&\*]\*\*\*\*\*}
5. BSN: {Format 111-111-1111}
6. Address: {minimum 5 characters and maximum 50 characters}
7. City: {minimum 2 characters and maximum 20 characters}
8. Zip: {minimum 4 characters and maximum 10 characters}
9. Date of Crime: {Format yyyy-mm-dd}
10. Date of Crime Registration: {Format yyyy-mm-dd}

The below screenshot displays the case number generation and user name created for the future logins.

```

... *****
Press 1 for New Complaint Registration...
Press 2 for Existing user login
Press 3 for Police Member login
Press 4 for Exit
*****
Enter Your Choice [1 or 2 or 3] : 1
Enter First Name : Mark
Enter Last Name : Smith
Enter Date of Birth (YYYY-MM-DD) : 1998-10-10

Password should be 8 < 16 > characters long and contain atleast one letter from each

Enter Password : Msmith@9810
Enter 9-digit BSN (111-11-1111) : 123-12-1234
Enter Address : 123 Street
Enter City : NL
Enter ZIP code : 12345
Enter Date of Crime (YYYY-MM-DD) : 2022-12-01
Enter your complaint : Testing compliant registration

-----
Complaint is registered successfully. Your Case Number is # 971830

Please note down your username - Mark

Congrats, Registration Successful !!!
Record created successfully
.....

```

## ## Option 2: ##

### \*\* Existing User Login \*\*

When the user enters option 2, it will ask the user to enter the following information

1. User Name:
2. Password: {minimum 8 characters with alphabet, numeric and special character}
3. OTP: {Only numeric characters}

The below screenshot displays the already created user able to authenticate using the credentials. The OTP is generated as part of MFA design to allow the user to navigate to the search menus.

```

*****
Press 1 for New Complaint Registration...
Press 2 for Existing user login
Press 3 for Police Member login
Press 4 for Exit
*****
Enter Your Choice [1 or 2 or 3]           :      2
Enter your First_Name                     :      Mark
Enter your Password                       :      Msmith@9810
*****

Opened database successfully!!!
Validating the user...

Your OTP is: 522570

Enter the OTP to validate : 522570

*****Login Successful!!!*****

You can continue to check the case status !

*****
Press a to search crime information       :
Press b to exit..                        :
Enter 5 to Return to main Menu
*****

```

When the existing user login successful using OTP then the crime search option allows to view the status as showed in the below screenshot.

```
Press a to search crime information      :
Press b to exit..                       :
... Enter 5 to Return to main Menu
*****
Enter Your Choice...      :      a
Enter the user to search  :      Mark

Opened database successfully!!!
Fetching case details...

-----
                Here are the Case details of Mark
-----
Name           :      Mark Smith
Date_Of_Birth  :      1998-10-10
BSN            :      xxx-xx- 1234
Address        :      123 Street
Date_Of_Crime  :      2022-12-01
Date_Of_Registration :      2022-12-18 15:39:52.725093
Complaint      :      Testing compliant registration
Case Status    :      In-Progress
Case Number    :      971830

Data has been Fetched successfully!!!
```

### ## Option 3: ##

#### \*\* Police Member Login \*\*

When the user enters option 3, it will ask the user to enter the following information

1. First Name: {Only Alphabet with minimum 2 and Maximum 15}
2. Last Name: {Only Alphabet with minimum 2 and Maximum 15}
3. Date of Birth: {Format yyyy-mm-dd}
4. Password: { 8 < 16 > characters long and contain atleast one letter from each set [A-Z][a-z][1-9][~!@#%&^\*]\*\*\*\*\*}
5. BSN: {Format 111-111-1111}
6. Address: {minimum 5 characters and maximum 50 characters}
7. City: {minimum 2 characters and maximum 20 characters}
8. Zip: {minimum 4 characters and maximum 10 characters}

The below screenshot shows the Police officer's account created successfully by choosing option 3 and a respectively.

```

... *****
Press 1 for New Complaint Registration...
Press 2 for Existing user login
Press 3 for Police Member login
Press 4 for Exit
*****
Enter Your Choice [1 or 2 or 3] : 3

Press a to New Police Member Registration :
Press b for Existing Police Login.. :
Press c to Search Crime case.. :
Press d to Modify Crime case.. :
Enter 5 to Return to main Menu
*****
Enter Your Choice : a
Enter First Name : Staff
Enter Last Name : Member
Enter Date of Birth (YYYY-MM-DD) : 1991-05-05

Password should be 8 < 16 > characters long and contain atleast one letter from each

Enter Password : Staff@9105
Enter 9-digit BSN (111-11-1111) : 321-32-4321
Enter Address : 321 Street
Enter City : NL
Enter ZIP code : 54321

Congrats, Registration Successful !!!
Record created successfully

```

The below screenshot displays the already created Police user able to authenticate using the credentials. The OTP is generated as part of MFA design to allow the user to navigate to the search and modify menus.

```

Press a to New Police Member Registration      :
Press b for Existing Police Login..           :
Press c to Search Crime case..                :
Press d to Modify Crime case..                :
Enter 5 to Return to main Menu
*****
Enter Your Choice                             :      b
Enter your First_Name                         :      Staff
Enter your Password                           :      Staff@9105

Opened database successfully!!!
Validating the user...

Your OTP is: 264258

Enter the OTP to validate : 264258

*****Login Successful!!!*****

You can continue to check/update the case  !

*****Login successfully *****

```

The below screenshot shows the Police staff able to retrieve the crime case.

```

Press a to New Police Member Registration      :
Press b for Existing Police Login..           :
Press c to Search Crime case..                :
Press d to Modify Crime case..                :
Enter 5 to Return to main Menu
*****
Enter Your Choice                             :      c
Enter the user to search                       :      Mark

Opened database successfully!!!
Fetching case details...

-----
                Here are the Case details of Mark
-----
Name           :      Mark Smith
Date_Of_Birth  :      1998-10-10
BSN            :      xxx-xx- 1234
Address        :      123 Street
Date_Of_Crime  :      2022-12-01
Date_Of_Registration :      2022-12-18 15:39:52.725093
Complaint      :      Testing compliant registration
Case Status    :      In-Progress
Case Number    :      971830

Data has been Fetched successfully!!!

```

The below screenshot shows the Police staff able to update the status.

```
Press a to New Police Member Registration      :
Press b for Existing Police Login..           :
Press c to Search Crime case..                :
Press d to Modify Crime case..                :
Enter 5 to Return to main Menu
*****
Enter Your Choice                             :      d
Enter the user to be updated                  :      Mark
Enter the new Status                         :      Under investigation
```

```
-----
                        Here are the Case details of Mark
-----
Name           :      Mark Smith
Date_Of_Birth  :      1998-10-10
BSN            :      xxx-xx- 1234
Address        :      123 Street
Date_Of_Crime  :      2022-12-01
Date_Of_Registration :      2022-12-18 15:39:52.725093
Complaint      :      Testing compliant registration
Case Status    :      Under investigation
Case Number    :      971830

Data has been Fetched successfully!!!
```

## Option 4: ##

\*\* Exiting the system \*\*

## ## Negative Test Scenarios ##

The below screenshot shows the error in creating a new complaint due to the discrepancy in username criteria.

```
*****
Press 1 for New Complaint Registration...
Press 2 for Existing user login
Press 3 for Police Member login
Press 4 for Exit
*****
Enter Your Choice [1 or 2 or 3]              :      1
Enter First Name                             :      John
Enter Last Name                              :      D
last Name entered is too short or has number, Please enter alphabet only and minimum
Please enter a name                           : 
```

The below screenshot shows the error in date of birth format.



```

*****
Enter Your Choice [1 or 2 or 3]      :      1
Enter First Name                    :      John
Enter Last Name                     :      D
last Name entered is too short or has number, Please enter alphabet only and minimum
Please enter a name                   :      Dee
Enter Date of Birth (YYYY-MM-DD)    :      199-01-10
Incorrect format.Enter in yyyy-mm-dd format

Enter Date of Birth YYYY-MM-DD1990-1-10

Password should be 8 < 16 > characters long and contain atleast one letter from each

```

The below screenshot shows the error in the incorrect BSN number entry.

```

Enter 9-digit BSN (111-11-1111) :      1111-1-111
Enter BSN Number in the format 111-11-1111 9 Digit : 11-111-1111
Enter BSN Number in the format 111-11-1111 9 Digit : 1-11-1111
Enter BSN Number in the format 111-11-1111 9 Digit : 1111-11-1111
Enter BSN Number in the format 111-11-1111 9 Digit : 

```

The below screenshot shows an error due to the wrong password.

```

Press 2 for Existing user login
Press 3 for Police Member login
Press 4 for Exit
*****
Enter Your Choice [1 or 2 or 3]      :      2
Enter your First_Name                :      Mark
Enter your Password                  :      Msmith@123
*****

Opened database successfully!!!
Validating the user...

User Doesn't Exist

```

The below screenshot shows an error due to invalid last name.

```

Press 2 for Existing user login
Press 3 for Police Member login
Press 4 for Exit
*****
Enter Your Choice [1 or 2 or 3]      :      2
Enter your First_Name                :      Mark
Enter your Password                  :      Steve
*****

Opened database successfully!!!
Validating the user...

User Doesn't Exist

```

The below screenshot shows the error due to OTP mismatch.

```
Press 2 for Existing user login
Press 3 for Police Member login
Press 4 for Exit
*****
Enter Your Choice [1 or 2 or 3]      :      2
Enter your First_Name                :      Mark
Enter your Password                   :      Msmith@9810
*****

Opened database successfully!!!
Validating the user...

Your OTP is: 847917

Enter the OTP to validate : 859919
OTP does not match, Try again !!!
```

Linter validation:

We got the score of 6.92 out of 10 as shown in the below screenshot.  
We reviewed our code using the linter, the few observations related to unused variables and libraries which has been removed during the development stage.

```
SSD_for_submission:430:10: C0121: Comparison 'checkBSN(BSN) == False' should be 'checkBSN(BSN) != False' if testing for falsiness (singleton-comparison)
SSD_for_submission:431:8: C0103: Variable name "BSN" doesn't conform to snake_case naming style
SSD_for_submission:438:8: C0103: Variable name "BSN_ENCRYPT" doesn't conform to snake_case naming style
SSD_for_submission:439:8: C0103: Variable name "base64_BSN" doesn't conform to snake_case naming style
SSD_for_submission:440:8: C0103: Variable name "base64_enc_BSN" doesn't conform to snake_case naming style
SSD_for_submission:474:10: C0121: Comparison 'birthvalidate(dob) == False' should be 'birthvalidate(dob) != False' if testing for falsiness (singleton-comparison)
SSD_for_submission:403:8: W0612: Unused variable 'username' (unused-variable)
SSD_for_submission:452:8: W0612: Unused variable 'base64_encrypt_address' (unused-variable)
SSD_for_submission:464:8: W0612: Unused variable 'base64_encrypt_city' (unused-variable)
SSD_for_submission:523:8: W0612: Unused variable 'base64_encrypt_zip' (unused-variable)
SSD_for_submission:375:0: R0912: Too many branches (20/12) (too-many-branches)
SSD_for_submission:375:0: R0915: Too many statements (85/50) (too-many-statements)
SSD_for_submission:572:8: W0212: Access to a protected member _exit of a client class (protected-access)
SSD_for_submission:17:0: W0611: Unused import re (unused-import)
SSD_for_submission:19:0: C0411: standard import "import sqlite3" should be placed before "import sys"

-----
Your code has been rated at 6.92/10

codio@episodesushi-austinmillion:~/workspace$
```

The below shown error are fixed in the final version of the code submitted as shown in the above screenshot.

```
codio@episodesushi-austinmillion:~/workspace$ pylint SSD_group4_Final.py
***** Module SSD_group4_Final
SSD_group4_Final.py:16:29: C0303: Trailing whitespace (trailing-whitespace)
SSD_group4_Final.py:17:23: C0303: Trailing whitespace (trailing-whitespace)
SSD_group4_Final.py:18:41: C0303: Trailing whitespace (trailing-whitespace)
SSD_group4_Final.py:19:37: C0303: Trailing whitespace (trailing-whitespace)
SSD_group4_Final.py:20:41: C0303: Trailing whitespace (trailing-whitespace)
SSD_group4_Final.py:22:38: C0303: Trailing whitespace (trailing-whitespace)
SSD_group4_Final.py:23:25: C0303: Trailing whitespace (trailing-whitespace)
SSD_group4_Final.py:25:24: C0303: Trailing whitespace (trailing-whitespace)
SSD_group4_Final.py:29:0: W0311: Bad indentation. Found 8 spaces, expected 4 (bad-indentation)
SSD_group4_Final.py:29:0: C0325: Unnecessary parens after 'if' keyword (superfluous-parens)
SSD_group4_Final.py:30:80: C0303: Trailing whitespace (trailing-whitespace)
SSD_group4_Final.py:30:0: W0311: Bad indentation. Found 12 spaces, expected 8 (bad-indentation)
SSD_group4_Final.py:31:0: W0311: Bad indentation. Found 16 spaces, expected 12 (bad-indentation)
SSD_group4_Final.py:32:0: W0311: Bad indentation. Found 16 spaces, expected 12 (bad-indentation)
SSD_group4_Final.py:33:75: C0303: Trailing whitespace (trailing-whitespace)
SSD_group4_Final.py:33:0: W0311: Bad indentation. Found 20 spaces, expected 16 (bad-indentation)
SSD_group4_Final.py:33:0: C0325: Unnecessary parens after 'if' keyword (superfluous-parens)
SSD_group4_Final.py:34:0: W0311: Bad indentation. Found 24 spaces, expected 20 (bad-indentation)
SSD_group4_Final.py:35:0: W0311: Bad indentation. Found 16 spaces, expected 12 (bad-indentation)
SSD_group4_Final.py:36:0: W0311: Bad indentation. Found 8 spaces, expected 4 (bad-indentation)
```