

## Lab2 Submission

COMP 5520 - Foundations in Digital Health—Spring 2023  
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### 1. Github link for the project:

[https://github.com/Wenhui-Liu/Foundations\\_in\\_Digital\\_Health/tree/main/Project2](https://github.com/Wenhui-Liu/Foundations_in_Digital_Health/tree/main/Project2)

### 2. Screenshots for system evaluation:

We have implemented both command line user interface and a GUI.

Part 2.1 will show the screenshots with a command line UI, the code can be find in Lab2.ipynb

**2.1 Screenshots with command line user interface**, you can find the actual query we used for solr after “Top 20 IDs matching ”, the total number of documents is at the end of the line.

#### 1. Car crash in note text

```
Type yes if you want to enter a date range(e.g. 2022-01-01 to 2022-12-31) in your search or type anything else to proceed
Type yes if you want to enter a hospital expiration flag in your search or type anything else to proceed:
Type yes if you want to enter a ICD9 code in your search or type anything else to proceed:
Type yes if you want to enter a word in note text in your search or type anything else to proceed: yes
Enter a word in note text: car crash
Type yes if you want to find the synonyms of the text in your search or type anything else to skip:
Top 20 IDs matching "text:"car crash"":
32098
10638
3510
34532
42728
19340
31700
33976
40377
22840
31514
42088
41332
38928
49549
*****
Total number of matching documents: 15
```

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#### 2. Car crash in note text and hospital\_expire\_flag=1 for the associated hospital admission

```
Type yes if you want to enter a date range(e.g. 2022-01-01 to 2022-12-31) in your search or type anything else to proceed
Type yes if you want to enter a hospital expiration flag in your search or type anything else to proceed: yes
Enter hospital expiration flag(0 or 1): 1
Type yes if you want to enter a ICD9 code in your search or type anything else to proceed:
Type yes if you want to enter a word in note text in your search or type anything else to proceed: yes
Enter a word in note text: car crash
Type yes if you want to find the synonyms of the text in your search or type anything else to skip:
Top 20 IDs matching "expire_flag:1 AND text:"car crash"":
*****
Total number of matching documents: 0
Type exit to finish searching or enter anything else to start a new search: exit
*****
```

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#### 3. 162.9 in ICD codes.

```

Type yes if you want to enter a date range(e.g. 2022-01-01 to 2022-12-31) in your search or type anything else to proceed
Type yes if you want to enter a hospital expiration flag in your search or type anything else to proceed:
Type yes if you want to enter a ICD9 code in your search or type anything else to proceed: yes
Enter ICD9 codes: 162.9
Type yes if you want to enter a word in note text in your search or type anything else to proceed:
Top 20 IDs matching "diagnoses:1629":
259
260
1129
1611
51050
51121
51200
46886
46987
6147
6203
2231
2262
26311
10780
2699
2822
2961
3002
3810
*****
Total number of matching documents: 183

```

#### 4. Note chartdate is between 2110-01-01 AND 2120-01-01

```

Type yes if you want to enter a date range(e.g. 2022-01-01 to 2022-12-31) in your search or type anything else to proceed yes
Enter date range (e.g. 2022-01-01 to 2022-12-31): 2110-01-01 to 2120-01-01
Type yes if you want to enter a hospital expiration flag in your search or type anything else to proceed:
Type yes if you want to enter a ICD9 code in your search or type anything else to proceed:
Type yes if you want to enter a word in note text in your search or type anything else to proceed:
Top 20 IDs matching "chartdate:[2110-01-01T00:00:00Z TO 2120-01-01T00:00:00Z]":
25
46
47
48
51
63
98
116
117
119
120
129
140
152
153
175
176
180
182
183
*****
Total number of matching documents: 5943

```

#### 5. Brain cancer and its synonyms from CHV in note text

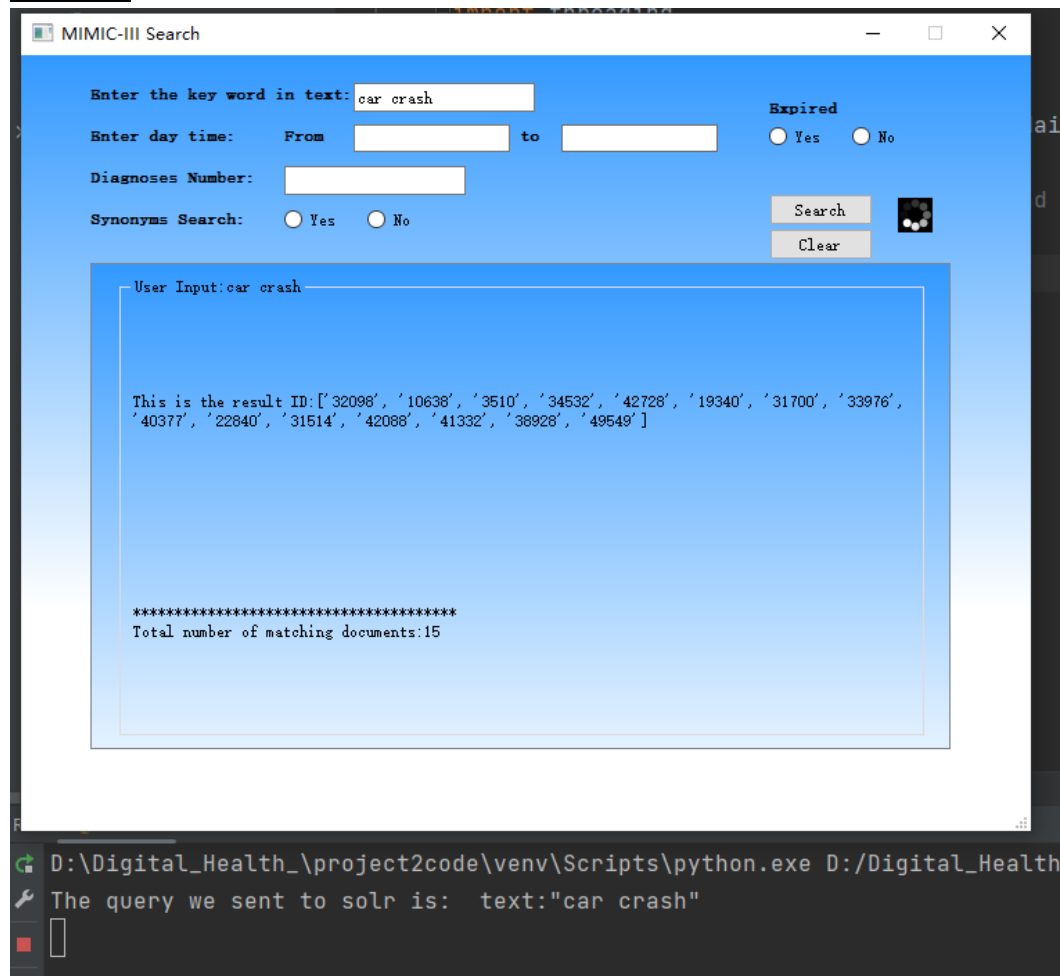
```

*****
Top 20 IDs matching "text:"brain cancer" OR text:"brain malignant tumors" OR text:"malignant brain tumor" OR text:"
brain cancer" OR text:"brain ca" OR text:"ca brain" OR text:"cancer of the brain" OR text:"brain cancers" OR text:"
malignant neoplasm of brain" OR text:"cancer of brain":
18463
47722
47752
47753
16058
47723
23397
43979
51702
12030
35304
37283
3253
8412
7728
12319
14352
26653
46678
41557
*****
Total number of matching documents: 189

```

**2.2 Screenshots with GUI,** you can find the actual query we used for solr and the total number of documents in console window.

1. Car crash in note text



2. Car crash in note text and hospital\_expire\_flag=1 for the associated hospital admission

The screenshot shows the MIMIC-III Search web application. The search criteria are: "car crash" in the text field, "Expired" set to "Yes", and "Diagnoses Number" set to "1". The search results are displayed in a light blue box. The first result shows a list of 15 document IDs. The second result shows an empty list of document IDs.

Enter the key word in text:

Enter day time: From  to

Diagnoses Number:

Synonyms Search: ☐ Yes ☐ No

Expired: ☒ Yes ☐ No

Search

User Input: car crash

This is the result ID: ['32098', '10638', '3510', '34532', '42728', '19340', '31700', '33978', '40377', '22840', '31514', '42068', '41332', '38928', '49549']

\*\*\*\*\*  
Total number of matching documents: 15

User Input: car crash

This is the result ID: []

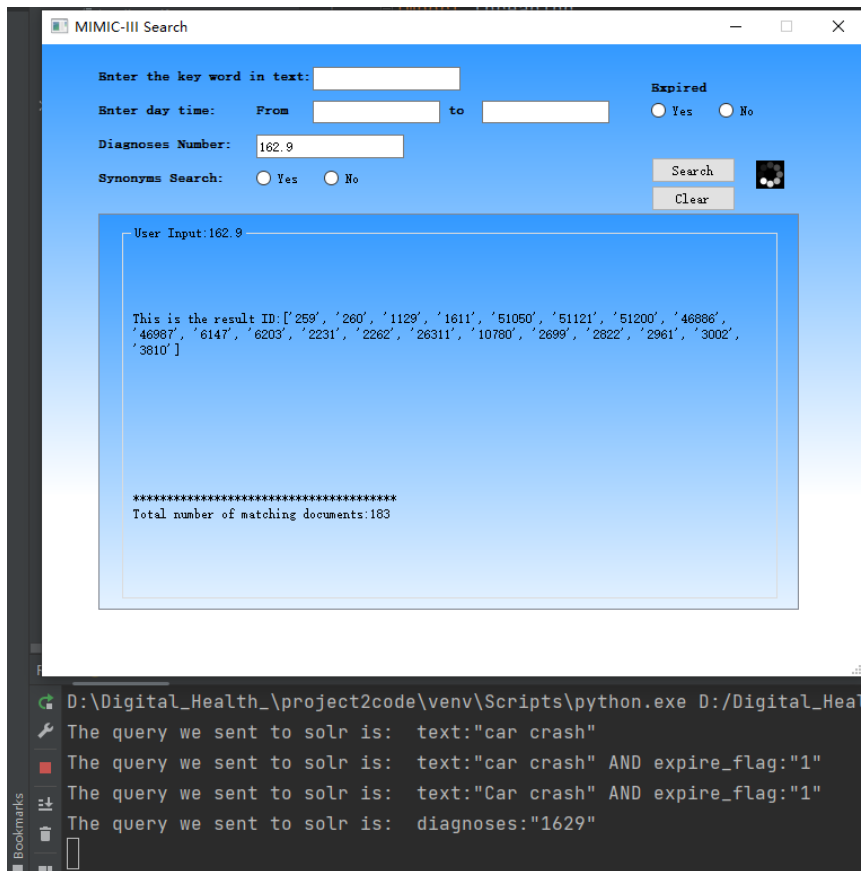
\*\*\*\*\*  
Total number of matching documents: 0

D:\Digital\_Health\_\project2code\venv\Scripts\python.exe D:/Digital\_Healt

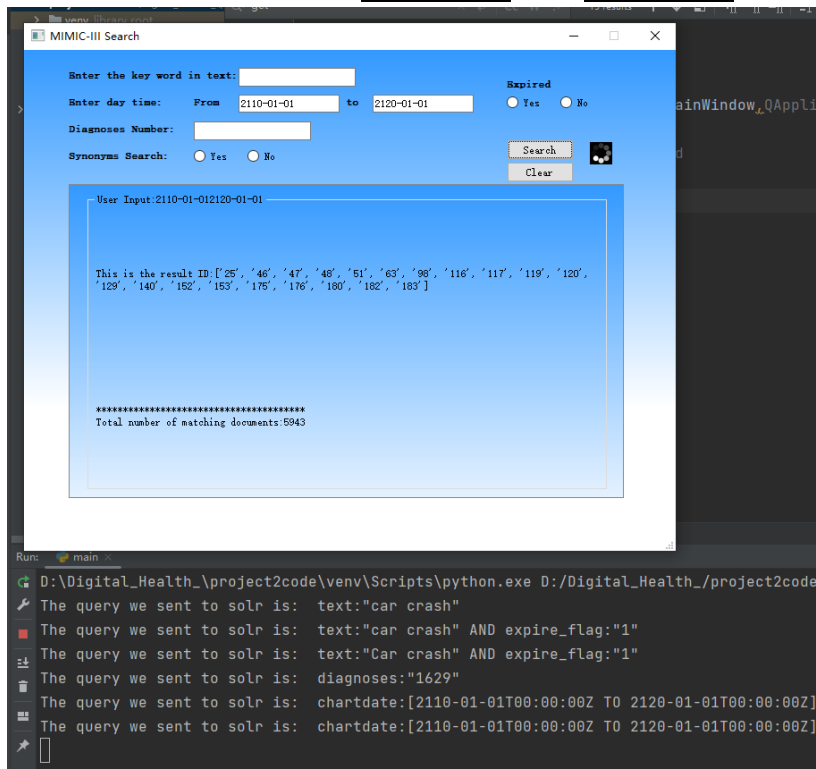
The query we sent to solr is: text:"car crash"

The query we sent to solr is: text:"car crash" AND expire\_flag:"1"

3. 162.9 in ICD codes.



#### 4. Note chartdate is between 2110-01-01 AND 2120-01-01



## 5. Brain cancer and its synonyms from CHV in note text

The screenshot displays a Python IDE with a project named 'project2code'. A window titled 'MIMIC-III Search' is open, showing a search interface. The search criteria are: 'Brain cancer' as the keyword, 'Expired' set to 'No', and 'Synonyms Search' set to 'Yes'. The search results are displayed in a text area, showing similar words and a list of document IDs. The console output shows the search query and the total number of matching documents.

**MIMIC-III Search Interface:**

- Enter the key word in text:
- Expired: ☐ Yes ☒ No
- Enter day time: From  to
- Diagnoses Number:
- Synonyms Search: ☒ Yes ☐ No
- Buttons: Search, Clear

**Search Results:**

User Input: Brain cancer

Similar Word for input: ['brain malignant tumors', 'malignant brain tumor', 'brain cancer', 'brain ca', 'ca brain', 'cancer of the brain', 'brain cancers', 'malignant neoplasm of brain', 'cancer of brain']

This is the result ID: ['18463', '47722', '47752', '47753', '16058', '47723', '23397', '43979', '51702', '12030', '35304', '37283', '3253', '8412', '7728', '12319', '14352', '26653', '46678', '41557']

\*\*\*\*\*  
Total number of matching documents: 189

**Console Output:**

```
[ 'Brain cancer', 'brain malignant tumors', 'malignant brain tumor', 'brain cancer', 'brain ca', 'ca brain',  
'cancer of the brain', 'brain cancers', 'malignant neoplasm of brain', 'cancer of brain']  
The query we sent to solr is: text:"Brain cancer"OR text:"brain malignant tumors"OR text:"malignant brain  
tumor"OR text:"brain cancer"OR text:"brain ca"OR text:"ca brain"OR text:"cancer of the brain"OR text:"brain  
cancers"OR text:"malignant neoplasm of brain"OR text:"cancer of brain"
```