

Project Development Phase

Delivery of Sprint-1

| | |
|--------------|---|
| Date | 03 NOV 2022 |
| Team ID | PNT2022TMID20895 |
| Project Name | Analytics for Hospitals' Health-Care Data |

Project Development Phase:

Sprint-1:

- Data Collection
- Data Preparation

Sprint-2:

- Data Exploration

Sprint-3:

- Dashboard Creation

Sprint-4:

- Report Creation
- Story Creation

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SPRINT-1

Data Preprocessing:

Using Jupyter notebook to remove the null values:

jupyter IBM_Project_preprocessing Last Checkpoint: Last Wednesday at 2:13 PM (autosaved)  Logout

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Run Code

```
In [1]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

```
In [5]: train = pd.read_csv(r'C:\Users\mohan\OneDrive\Documents\IBM_Project\Healthcare_Data\train_data.csv')
```

```
In [7]: train.head()
```

Out[7]:

| | case_id | Hospital_code | Hospital_type_code | City_Code_Hospital | Hospital_region_code | Available Extra Rooms in Hospital | Department | Ward_Type | Ward_Facility_Code | Bed Grade | patient |
|---|---------|---------------|--------------------|--------------------|----------------------|---|--------------|-----------|--------------------|--------------|---------|
| 0 | 1 | 8 | c | 3 | Z | 3 | radiotherapy | R | F | 2.0 | 313 |
| 1 | 2 | 2 | c | 5 | Z | 2 | radiotherapy | S | F | 2.0 | 313 |
| 2 | 3 | 10 | e | 1 | X | 2 | anesthesia | S | E | 2.0 | 313 |
| 3 | 4 | 26 | b | 2 | Y | 2 | radiotherapy | R | D | 2.0 | 313 |
| 4 | 5 | 26 | b | 2 | Y | 2 | radiotherapy | S | D | 2.0 | 313 |

```
In [8]: train.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 318438 entries, 0 to 318437
Data columns (total 18 columns):
#   Column                                     Non-Null Count  Dtype
---  -
0   case_id                                   318438 non-null  int64
1   Hospital_code                             318438 non-null  int64
2   Hospital_type_code                       318438 non-null  object
3   City_Code_Hospital                       318438 non-null  int64
4   Hospital_region_code                     318438 non-null  object
5   Available Extra Rooms in Hospital        318438 non-null  int64
6   Department                               318438 non-null  object
```

| | | | | | | | | | | | |
|---|---|----|---|---|---|---|--------------|---|---|-----|-----|
| 4 | 5 | 20 | 0 | 2 | 1 | 2 | radiotherapy | 3 | 0 | 2.0 | 313 |
|---|---|----|---|---|---|---|--------------|---|---|-----|-----|

In [17]: `train.isnull().sum()`

```
Out[17]: case_id          0
Hospital_code        0
Hospital_type_code   0
City_Code_Hospital   0
Hospital_region_code 0
Available Extra Rooms in Hospital 0
Department           0
Ward_Type            0
Ward_Facility_Code   0
Bed Grade            0
patientid            0
City_Code_Patient     0
Type of Admission     0
Severity of Illness    0
Visitors with Patient 0
Age                  0
Admission_Deposit     0
Stay                 0
dtype: int64
```

In [18]: `train = train.to_csv('final_train_data.csv', index=False)`

In [19]: `test = pd.read_csv(r'C:\Users\mohan\OneDrive\Documents\IBM_Project\Healthcare_Data\test_data.csv')`

In [20]: `test.head()`

Out[20]:

| | case_id | Hospital_code | Hospital_type_code | City_Code_Hospital | Hospital_region_code | Available Extra Rooms in Hospital | Department | Ward_Type | Ward_Facility_Code | Bed Grade | patient |
|---|---------|---------------|--------------------|--------------------|----------------------|---|------------|-----------|--------------------|--------------|---------|
| 0 | 318439 | 21 | c | 3 | Z | 3 | gynecology | S | A | 2.0 | 170 |
| 1 | 318440 | 29 | a | 4 | X | 2 | gynecology | S | F | 2.0 | 170 |

```
Stay
dtype: int64
```

```
In [11]: train['Bed Grade'].value_counts()
```

```
Out[11]: 2.0    123671
         3.0    110583
         4.0     57566
         1.0     26505
         Name: Bed Grade, dtype: int64
```

```
In [12]: train['Bed Grade'].unique()
```

```
Out[12]: array([ 2.,  3.,  4.,  1., nan])
```

```
In [13]: train.shape
```

```
Out[13]: (318438, 18)
```

```
In [14]: train.dropna(inplace=True)
```

```
In [15]: train.shape
```

```
Out[15]: (313793, 18)
```

```
In [16]: train.head()
```

```
Out[16]:
```

| | case_id | Hospital_code | Hospital_type_code | City_Code_Hospital | Hospital_region_code | Available Extra Rooms in Hospital | Department | Ward_Type | Ward_Facility_Code | Bed Grade | patien |
|---|---------|---------------|--------------------|--------------------|----------------------|---|--------------|-----------|--------------------|--------------|--------|
| 0 | 1 | 8 | c | 3 | Z | 3 | radiotherapy | R | F | 2.0 | 313 |
| 1 | 2 | 2 | c | 5 | Z | 2 | radiotherapy | S | F | 2.0 | 313 |
| 2 | 3 | 10 | e | 1 | X | 2 | anesthesia | S | E | 2.0 | 313 |
| 3 | 4 | 26 | b | 2 | Y | 2 | radiotherapy | R | D | 2.0 | 313 |

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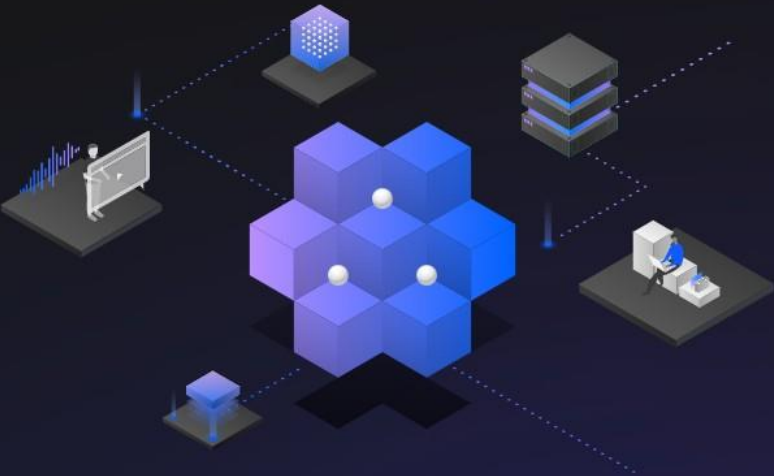
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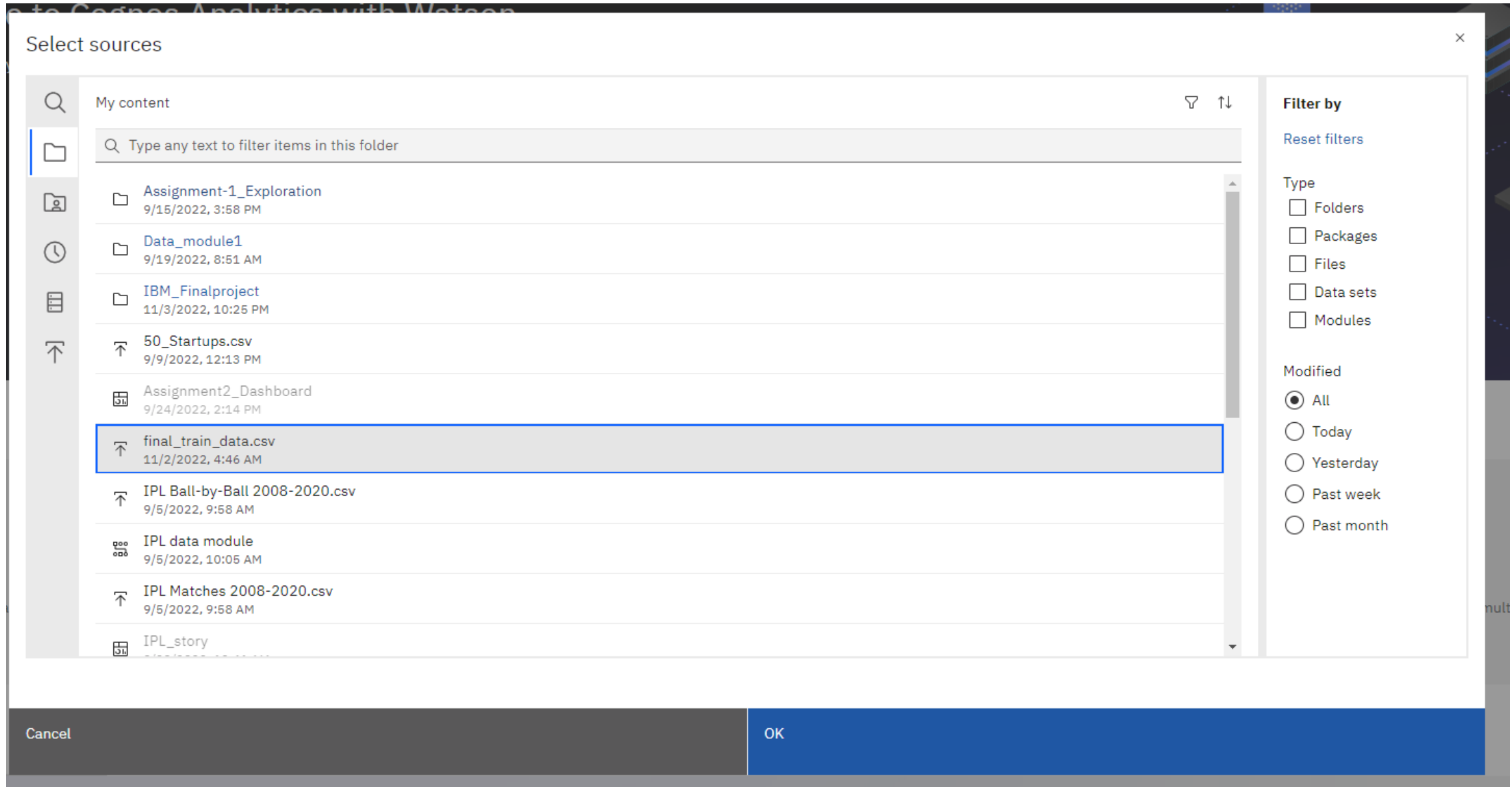
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