

Project DevelopmentPhase

Delivery of Sprint-1

Date	02 NOV 2022
Team ID	PNT2022TMID23557
Project Name	Analytics for Hospitals' Health-Care Data

PROJECT DEVELOPMENT PHASE

SPRINT1

Data collection
Data preparation

SPRINT2

Data Exploration

SPRINT3

Dashboard creation

SPRINT4

Report creation
Story creation

SPRINT 1

Data Preprocessing:

USING JUPYTER NOTEBOOK TO REMOVE THE NULL VALUES:

```
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	0	0	3	2	3	radiotherapy	R	F	2.0	313
1	2	2	0	5	2	2	radiotherapy	S	F	2.0	313
2	3	10	4	1	E	2	anesthesia	S	E	2.0	313
3	4	26	6	2	V	2	radiotherapy	R	D	2.0	313
4	5	26	6	2	V	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 12 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
```

```
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	patientid
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	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

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10

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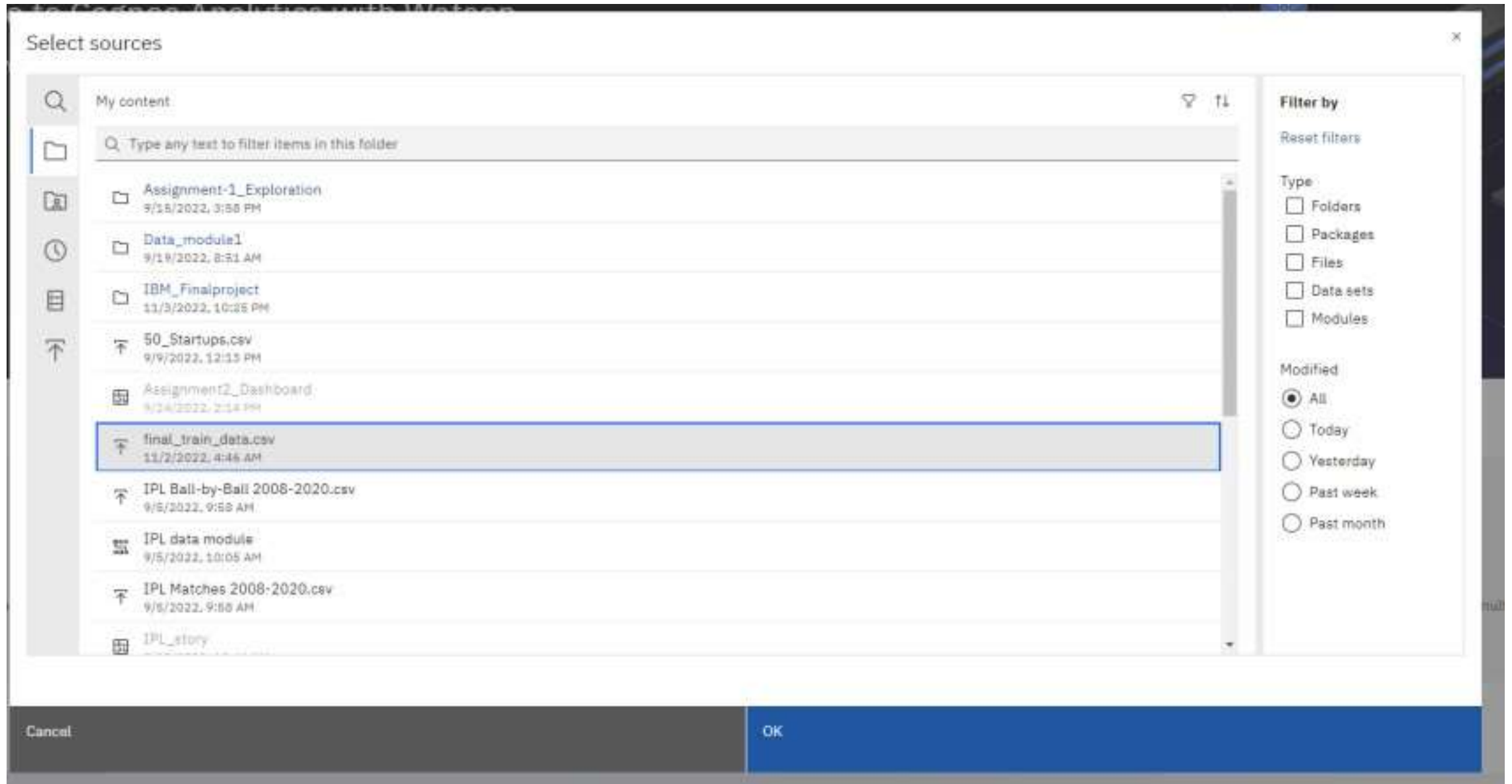
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Uploading the dataset to perform the preparation and visualization

