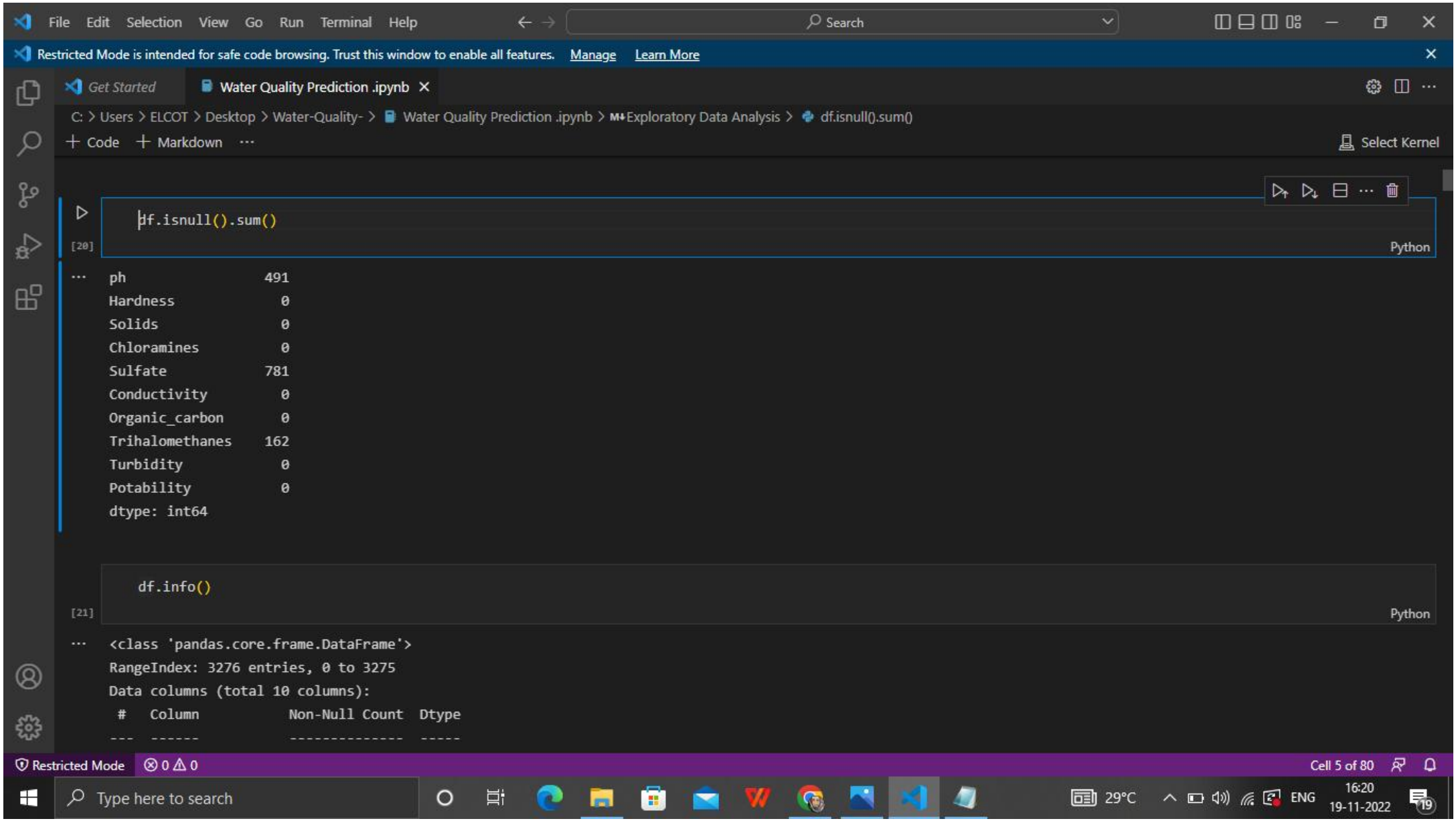
SPRINT 3

Date	15 November 2022
Team ID	PNT2022TMID49672
Project Name	Efficient Water Quality Analysis and Prediction Using Machine Learning
Maximum Marks	8 Marks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Get Started
Water Quality Prediction .ipynb
C: > Users > ELCOT > Desktop > Water-Quality- > Water Quality Prediction .ipynb > Exploratory Data Analysis > df.isnull().sum()
+ Code + Markdown ···
Select Kernel
[20]
df.isnull().sum()
Python
ph 491
Hardness 0
Solids 0
Chloramines 0
Sulfate 781
Conductivity 0
Organic_carbon 0
Trihalomethanes 162
Turbidity 0
Potability 0
dtype: int64
[21]
df.info()
Python
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 3276 entries, 0 to 3275
Data columns (total 10 columns):
Column Non-Null Count Dtype
--- ------ -------------- -----
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+ Code + Markdown ···

Select Kernel

```
---  ------           --------------  -----
 0   ph               2785 non-null   float64
 1   Hardness         3276 non-null   float64
 2   Solids           3276 non-null   float64
 3   Chloramines      3276 non-null   float64
 4   Sulfate          2495 non-null   float64
 5   Conductivity     3276 non-null   float64
 6   Organic_carbon   3276 non-null   float64
 7   Trihalomethanes  3114 non-null   float64
 8   Turbidity        3276 non-null   float64
 9   Potability       3276 non-null   int64
dtypes: float64(9), int64(1)
memory usage: 256.1 KB
```

[22]

```
df.describe()
```

Python

···

[23]

```
df['Sulfate'].mean()
```

Python

```
333.77577661081335
```

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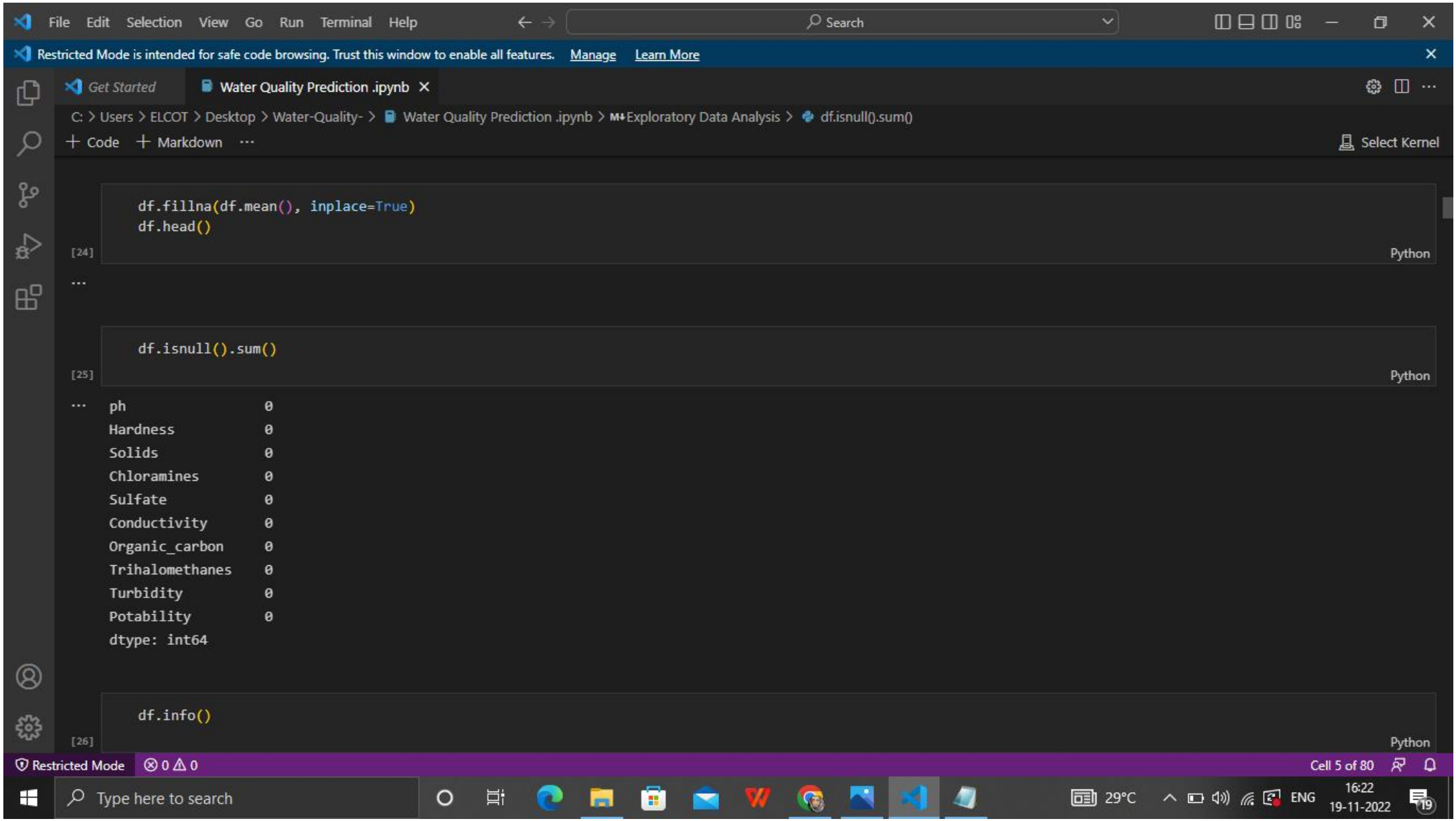
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C: > Users > ELCOT > Desktop > Water-Quality- > Water Quality Prediction .ipynb > Exploratory Data Analysis > df.isnull().sum()
+ Code + Markdown ···
Select Kernel
df.fillna(df.mean(), inplace=True)
df.head()
[24]
Python
···
df.isnull().sum()
[25]
Python
··· ph 0
Hardness 0
Solids 0
Chloramines 0
Sulfate 0
Conductivity 0
Organic_carbon 0
Trihalomethanes 0
Turbidity 0
Potability 0
dtype: int64
df.info()
[26]
Python
Restricted Mode
⊗ 0 ⚠ 0
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+ Code + Markdown ···

Select Kernel

```
[26]  df.info()
```

Python

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 3276 entries, 0 to 3275
Data columns (total 10 columns):
 #   Column           Non-Null Count  Dtype  
---  ------           --------------  -----  
 0   ph               3276 non-null   float64
 1   Hardness         3276 non-null   float64
 2   Solids           3276 non-null   float64
 3   Chloramines      3276 non-null   float64
 4   Sulfate          3276 non-null   float64
 5   Conductivity     3276 non-null   float64
 6   Organic_carbon   3276 non-null   float64
 7   Trihalomethanes  3276 non-null   float64
 8   Turbidity        3276 non-null   float64
 9   Potability       3276 non-null   int64  
dtypes: float64(9), int64(1)
memory usage: 256.1 KB
```

```
[27]  df.describe()
```

Python

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Cell 5 of 80

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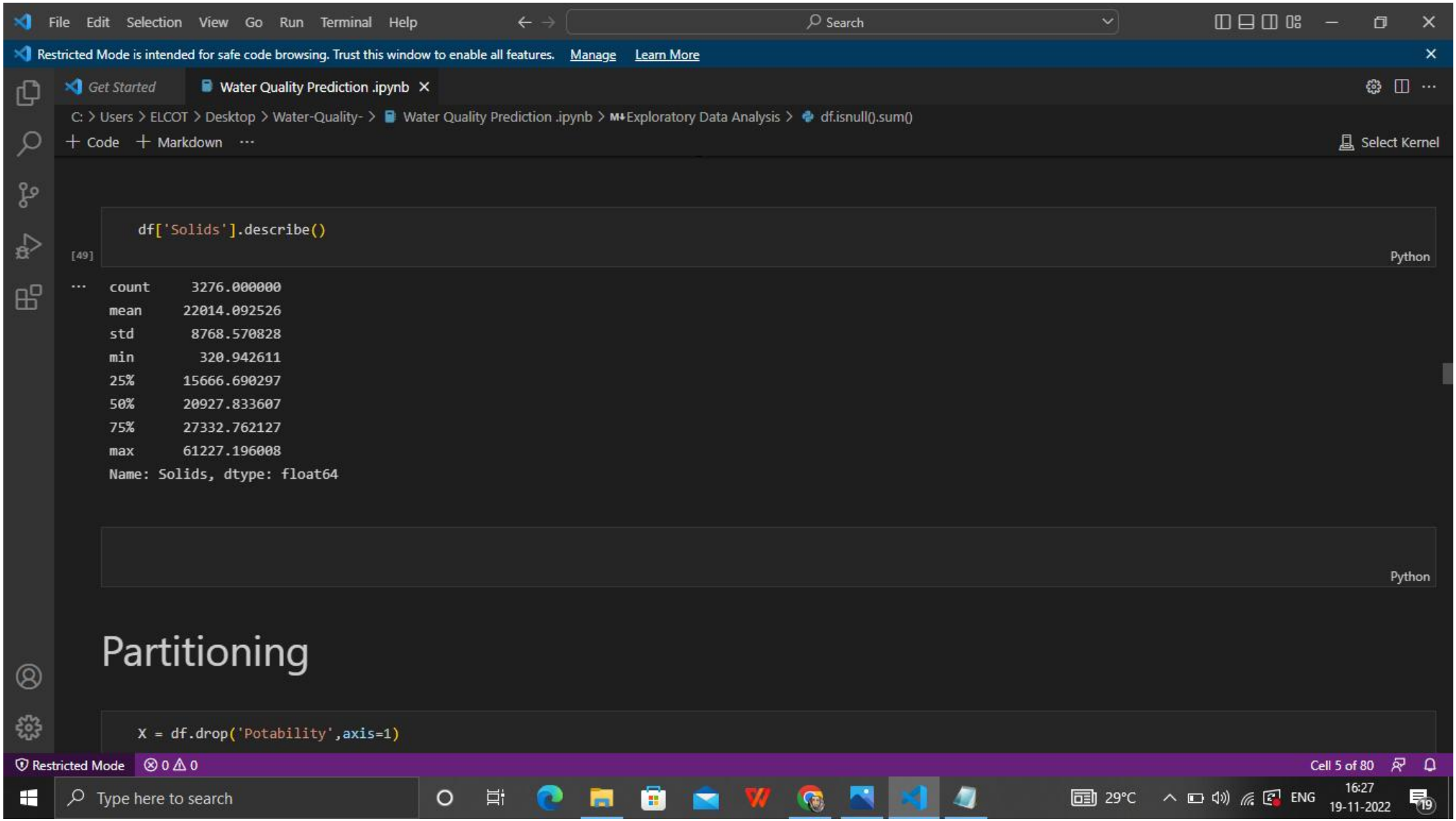
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C: > Users > ELCOT > Desktop > Water-Quality- > Water Quality Prediction .ipynb > Exploratory Data Analysis > df.isnull().sum()
+ Code + Markdown ···
Select Kernel
df['Solids'].describe()
[49]
Python
count 3276.000000
mean 22014.092526
std 8768.570828
min 320.942611
25% 15666.690297
50% 20927.833607
75% 27332.762127
max 61227.196008
Name: Solids, dtype: float64
Python
Partitioning
X = df.drop('Potability',axis=1)
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16:27
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