

```
import pandas as pd
df = pd.read_csv("StudentsPerformance.csv")
```

```
print(df.head())
```

```

  gender race/ethnicity parental level of education    lunch \
0  female      group B      bachelor's degree    standard
1  female      group C          some college    standard
2  female      group B      master's degree    standard
3   male      group A      associate's degree  free/reduced
4   male      group C          some college    standard

  test preparation course  math score  reading score  writing score
0                none           72           72           74
1            completed           69           90           88
2                none           90           95           93
3                none           47           57           44
4                none           76           78           75

```

```
print(df.tail())
```

```

  gender race/ethnicity parental level of education    lunch \
995  female      group E      master's degree    standard
996   male      group C          high school  free/reduced
997  female      group C          high school  free/reduced
998  female      group D          some college    standard
999  female      group D          some college  free/reduced

  test preparation course  math score  reading score  writing score
995            completed           88           99           95
996                none           62           55           55
997            completed           59           71           65
998            completed           68           78           77
999                none           77           86           86

```

```
print(df.info())
```

```

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1000 entries, 0 to 999
Data columns (total 8 columns):
 #   Column                                Non-Null Count  Dtype
---  -
 0   gender                                1000 non-null   object
 1   race/ethnicity                        1000 non-null   object
 2   parental level of education           1000 non-null   object
 3   lunch                                 1000 non-null   object
 4   test preparation course               1000 non-null   object
 5   math score                           1000 non-null   int64
 6   reading score                        1000 non-null   int64
 7   writing score                         1000 non-null   int64
dtypes: int64(3), object(5)
memory usage: 62.6+ KB
None

```

```
print(df.shape)
```

```
(1000, 8)
```

```

high_math = df[df["math score"] > 80]

# Female students only
female_students = df[df["gender"] == "female"]

# Students with reading score > 70 and writing score > 70
good_read_write = df[(df["reading score"] > 70) & (df["writing score"] > 70)]

# Selecting specific columns
subset = df[["gender", "math score", "reading score"]]

```

```

# Mean
print(df["math score"].mean())

# Median
print(df["math score"].median())

# Mode
print(df["math score"].mode()[0])

```

```

66.089
66.0
65

```

```
math_range = df["math score"].max() - df["math score"].min()
print("Range:", math_range)
```

```
# Variance
print("Variance:", df["math score"].var())
```

```
# Standard Deviation
print("Standard Deviation:", df["math score"].std())
```

```
Range: 100
Variance: 229.91899799799847
Standard Deviation: 15.163080096009468
```

```
print(df.describe().T)
```

	count	mean	std	min	25%	50%	75%	max
math score	1000.0	66.089	15.163080	0.0	57.00	66.0	77.0	100.0
reading score	1000.0	69.169	14.600192	17.0	59.00	70.0	79.0	100.0
writing score	1000.0	68.054	15.195657	10.0	57.75	69.0	79.0	100.0