

```
In [1]: #Adding new Columns to Data Frame and perform operations
import pandas as pd
```

```
In [2]: df=pd.read_csv("D:\\Python-Workspace\\Pandas\\studentmarks1.csv")
print(df,type(df))
```

|    | htno | name    | telugu | english | hindi | maths | science | social |
|----|------|---------|--------|---------|-------|-------|---------|--------|
| 0  | 100  | Ramesh  | 50     | 60      | 66    | 98    | 66      | 55     |
| 1  | 101  | Rajesh  | 45     | 67      | 34    | 67    | 66      | 78     |
| 2  | 102  | Rossum  | 56     | 88      | 56    | 99    | 44      | 77     |
| 3  | 103  | Raji    | 56     | 78      | 34    | 56    | 88      | 55     |
| 4  | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     |
| 5  | 105  | Karthik | 48     | 62      | 39    | 68    | 65      | 88     |
| 6  | 106  | Kambli  | 53     | 81      | 59    | 92    | 48      | 73     |
| 7  | 107  | Praveen | 46     | 88      | 74    | 86    | 78      | 45     |
| 8  | 108  | Ganesh  | 53     | 62      | 76    | 88    | 76      | 35     |
| 9  | 109  | Nags    | 55     | 77      | 44    | 77    | 86      | 58     |
| 10 | 110  | Biswa   | 66     | 48      | 86    | 95    | 48      | 47     |
| 11 | 111  | Ritchi  | 66     | 68      | 64    | 76    | 98      | 75     |
| 12 | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     |
| 13 | 112  | shareef | 50     | 63      | 99    | 90    | 76      | 67     |
| 14 | 113  | sonu    | 60     | 89      | 98    | 87    | 77      | 68     |
| 15 | 114  | Rajesh  | 45     | 67      | 77    | 55    | 66      | 46     |
| 16 | 115  | Rakesh  | 67     | 78      | 88    | 78    | 67      | 49     |

<class 'pandas.core.frame.DataFrame'>

```
In [4]: df["total"]=None
```

```
In [5]: print(df)
```

|    | htno | name    | telugu | english | hindi | maths | science | social | total |
|----|------|---------|--------|---------|-------|-------|---------|--------|-------|
| 0  | 100  | Ramesh  | 50     | 60      | 66    | 98    | 66      | 55     | None  |
| 1  | 101  | Rajesh  | 45     | 67      | 34    | 67    | 66      | 78     | None  |
| 2  | 102  | Rossum  | 56     | 88      | 56    | 99    | 44      | 77     | None  |
| 3  | 103  | Raji    | 56     | 78      | 34    | 56    | 88      | 55     | None  |
| 4  | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | None  |
| 5  | 105  | Karthik | 48     | 62      | 39    | 68    | 65      | 88     | None  |
| 6  | 106  | Kambli  | 53     | 81      | 59    | 92    | 48      | 73     | None  |
| 7  | 107  | Praveen | 46     | 88      | 74    | 86    | 78      | 45     | None  |
| 8  | 108  | Ganesh  | 53     | 62      | 76    | 88    | 76      | 35     | None  |
| 9  | 109  | Nags    | 55     | 77      | 44    | 77    | 86      | 58     | None  |
| 10 | 110  | Biswa   | 66     | 48      | 86    | 95    | 48      | 47     | None  |
| 11 | 111  | Ritchi  | 66     | 68      | 64    | 76    | 98      | 75     | None  |
| 12 | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | None  |
| 13 | 112  | shareef | 50     | 63      | 99    | 90    | 76      | 67     | None  |
| 14 | 113  | sonu    | 60     | 89      | 98    | 87    | 77      | 68     | None  |
| 15 | 114  | Rajesh  | 45     | 67      | 77    | 55    | 66      | 46     | None  |
| 16 | 115  | Rakesh  | 67     | 78      | 88    | 78    | 67      | 49     | None  |

```
In [6]: df["total"]=df["telugu"]+df["hindi"]+df["english"]+df["maths"]+df["science"]+df["social"]
print(df)
```

|    | htno | name    | telugu | english | hindi | maths | science | social | total |
|----|------|---------|--------|---------|-------|-------|---------|--------|-------|
| 0  | 100  | Ramesh  | 50     | 60      | 66    | 98    | 66      | 55     | 395   |
| 1  | 101  | Rajesh  | 45     | 67      | 34    | 67    | 66      | 78     | 357   |
| 2  | 102  | Rossum  | 56     | 88      | 56    | 99    | 44      | 77     | 420   |
| 3  | 103  | Raji    | 56     | 78      | 34    | 56    | 88      | 55     | 367   |
| 4  | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |
| 5  | 105  | Karthik | 48     | 62      | 39    | 68    | 65      | 88     | 370   |
| 6  | 106  | Kambli  | 53     | 81      | 59    | 92    | 48      | 73     | 406   |
| 7  | 107  | Praveen | 46     | 88      | 74    | 86    | 78      | 45     | 417   |
| 8  | 108  | Ganesh  | 53     | 62      | 76    | 88    | 76      | 35     | 390   |
| 9  | 109  | Nags    | 55     | 77      | 44    | 77    | 86      | 58     | 397   |
| 10 | 110  | Biswa   | 66     | 48      | 86    | 95    | 48      | 47     | 390   |
| 11 | 111  | Ritchi  | 66     | 68      | 64    | 76    | 98      | 75     | 447   |
| 12 | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |
| 13 | 112  | shareef | 50     | 63      | 99    | 90    | 76      | 67     | 445   |
| 14 | 113  | sonu    | 60     | 89      | 98    | 87    | 77      | 68     | 479   |
| 15 | 114  | Rajesh  | 45     | 67      | 77    | 55    | 66      | 46     | 356   |
| 16 | 115  | Rakesh  | 67     | 78      | 88    | 78    | 67      | 49     | 427   |

```
In [7]: df["percent"]=round((df["total"]/600)*100,2)
print(df)
```

|    | htno | name    | telugu | english | hindi | maths | science | social | total | \ |
|----|------|---------|--------|---------|-------|-------|---------|--------|-------|---|
| 0  | 100  | Ramesh  | 50     | 60      | 66    | 98    | 66      | 55     | 395   |   |
| 1  | 101  | Rajesh  | 45     | 67      | 34    | 67    | 66      | 78     | 357   |   |
| 2  | 102  | Rossum  | 56     | 88      | 56    | 99    | 44      | 77     | 420   |   |
| 3  | 103  | Raji    | 56     | 78      | 34    | 56    | 88      | 55     | 367   |   |
| 4  | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |   |
| 5  | 105  | Karthik | 48     | 62      | 39    | 68    | 65      | 88     | 370   |   |
| 6  | 106  | Kambli  | 53     | 81      | 59    | 92    | 48      | 73     | 406   |   |
| 7  | 107  | Praveen | 46     | 88      | 74    | 86    | 78      | 45     | 417   |   |
| 8  | 108  | Ganesh  | 53     | 62      | 76    | 88    | 76      | 35     | 390   |   |
| 9  | 109  | Nags    | 55     | 77      | 44    | 77    | 86      | 58     | 397   |   |
| 10 | 110  | Biswa   | 66     | 48      | 86    | 95    | 48      | 47     | 390   |   |
| 11 | 111  | Ritchi  | 66     | 68      | 64    | 76    | 98      | 75     | 447   |   |
| 12 | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |   |
| 13 | 112  | shareef | 50     | 63      | 99    | 90    | 76      | 67     | 445   |   |
| 14 | 113  | sonu    | 60     | 89      | 98    | 87    | 77      | 68     | 479   |   |
| 15 | 114  | Rajesh  | 45     | 67      | 77    | 55    | 66      | 46     | 356   |   |
| 16 | 115  | Rakesh  | 67     | 78      | 88    | 78    | 67      | 49     | 427   |   |

|    | percent |
|----|---------|
| 0  | 65.83   |
| 1  | 59.50   |
| 2  | 70.00   |
| 3  | 61.17   |
| 4  | 64.50   |
| 5  | 61.67   |
| 6  | 67.67   |
| 7  | 69.50   |
| 8  | 65.00   |
| 9  | 66.17   |
| 10 | 65.00   |
| 11 | 74.50   |
| 12 | 64.50   |
| 13 | 74.17   |
| 14 | 79.83   |
| 15 | 59.33   |
| 16 | 71.17   |

```
In [9]: df.loc[df["maths"]>90]
```

Out[9]:

|    | htno | name   | telugu | english | hindi | maths | science | social | total | percent |
|----|------|--------|--------|---------|-------|-------|---------|--------|-------|---------|
| 0  | 100  | Ramesh | 50     | 60      | 66    | 98    | 66      | 55     | 395   | 65.83   |
| 2  | 102  | Rossum | 56     | 88      | 56    | 99    | 44      | 77     | 420   | 70.00   |
| 4  | 104  | Kalyan | 51     | 63      | 62    | 93    | 67      | 51     | 387   | 64.50   |
| 6  | 106  | Kambli | 53     | 81      | 59    | 92    | 48      | 73     | 406   | 67.67   |
| 10 | 110  | Biswa  | 66     | 48      | 86    | 95    | 48      | 47     | 390   | 65.00   |
| 12 | 104  | Kalyan | 51     | 63      | 62    | 93    | 67      | 51     | 387   | 64.50   |

```
In [10]: df.loc[df["maths"]>95]
```

```
Out[10]:
```

|   | htno | name   | telugu | english | hindi | maths | science | social | total | percent |
|---|------|--------|--------|---------|-------|-------|---------|--------|-------|---------|
| 0 | 100  | Ramesh | 50     | 60      | 66    | 98    | 66      | 55     | 395   | 65.83   |
| 2 | 102  | Rossum | 56     | 88      | 56    | 99    | 44      | 77     | 420   | 70.00   |

```
In [11]: df.loc[df["maths"]<70]
```

```
Out[11]:
```

|    | htno | name    | telugu | english | hindi | maths | science | social | total | percent |
|----|------|---------|--------|---------|-------|-------|---------|--------|-------|---------|
| 1  | 101  | Rajesh  | 45     | 67      | 34    | 67    | 66      | 78     | 357   | 59.50   |
| 3  | 103  | Raji    | 56     | 78      | 34    | 56    | 88      | 55     | 367   | 61.17   |
| 5  | 105  | Karthik | 48     | 62      | 39    | 68    | 65      | 88     | 370   | 61.67   |
| 15 | 114  | Rajesh  | 45     | 67      | 77    | 55    | 66      | 46     | 356   | 59.33   |

```
In [12]: df.loc[df["maths"]>95,["name","maths"]]
```

```
Out[12]:
```

|   | name   | maths |
|---|--------|-------|
| 0 | Ramesh | 98    |
| 2 | Rossum | 99    |

```
In [17]: df.loc[(df["maths"]>=90) & (df["maths"]<=99),["name","maths"] ]
```

```
Out[17]:
```

|    | name    | maths |
|----|---------|-------|
| 0  | Ramesh  | 98    |
| 2  | Rossum  | 99    |
| 4  | Kalyan  | 93    |
| 6  | Kambli  | 92    |
| 10 | Biswa   | 95    |
| 12 | Kalyan  | 93    |
| 13 | shareef | 90    |

```
In [18]: print(df)
```

|    | htno | name    | telugu | english | hindi | maths | science | social | total | \ |
|----|------|---------|--------|---------|-------|-------|---------|--------|-------|---|
| 0  | 100  | Ramesh  | 50     | 60      | 66    | 98    | 66      | 55     | 395   |   |
| 1  | 101  | Rajesh  | 45     | 67      | 34    | 67    | 66      | 78     | 357   |   |
| 2  | 102  | Rossum  | 56     | 88      | 56    | 99    | 44      | 77     | 420   |   |
| 3  | 103  | Raji    | 56     | 78      | 34    | 56    | 88      | 55     | 367   |   |
| 4  | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |   |
| 5  | 105  | Karthik | 48     | 62      | 39    | 68    | 65      | 88     | 370   |   |
| 6  | 106  | Kambli  | 53     | 81      | 59    | 92    | 48      | 73     | 406   |   |
| 7  | 107  | Praveen | 46     | 88      | 74    | 86    | 78      | 45     | 417   |   |
| 8  | 108  | Ganesh  | 53     | 62      | 76    | 88    | 76      | 35     | 390   |   |
| 9  | 109  | Nags    | 55     | 77      | 44    | 77    | 86      | 58     | 397   |   |
| 10 | 110  | Biswa   | 66     | 48      | 86    | 95    | 48      | 47     | 390   |   |
| 11 | 111  | Ritchi  | 66     | 68      | 64    | 76    | 98      | 75     | 447   |   |
| 12 | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |   |
| 13 | 112  | shareef | 50     | 63      | 99    | 90    | 76      | 67     | 445   |   |
| 14 | 113  | sonu    | 60     | 89      | 98    | 87    | 77      | 68     | 479   |   |
| 15 | 114  | Rajesh  | 45     | 67      | 77    | 55    | 66      | 46     | 356   |   |
| 16 | 115  | Rakesh  | 67     | 78      | 88    | 78    | 67      | 49     | 427   |   |

|    | percent |
|----|---------|
| 0  | 65.83   |
| 1  | 59.50   |
| 2  | 70.00   |
| 3  | 61.17   |
| 4  | 64.50   |
| 5  | 61.67   |
| 6  | 67.67   |
| 7  | 69.50   |
| 8  | 65.00   |
| 9  | 66.17   |
| 10 | 65.00   |
| 11 | 74.50   |
| 12 | 64.50   |
| 13 | 74.17   |
| 14 | 79.83   |
| 15 | 59.33   |
| 16 | 71.17   |

```
In [19]: df["grade"]="NULL"
print(df)
```

|    | htno | name    | telugu | english | hindi | maths | science | social | total | \ |
|----|------|---------|--------|---------|-------|-------|---------|--------|-------|---|
| 0  | 100  | Ramesh  | 50     | 60      | 66    | 98    | 66      | 55     | 395   |   |
| 1  | 101  | Rajesh  | 45     | 67      | 34    | 67    | 66      | 78     | 357   |   |
| 2  | 102  | Rossum  | 56     | 88      | 56    | 99    | 44      | 77     | 420   |   |
| 3  | 103  | Raji    | 56     | 78      | 34    | 56    | 88      | 55     | 367   |   |
| 4  | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |   |
| 5  | 105  | Karthik | 48     | 62      | 39    | 68    | 65      | 88     | 370   |   |
| 6  | 106  | Kambli  | 53     | 81      | 59    | 92    | 48      | 73     | 406   |   |
| 7  | 107  | Praveen | 46     | 88      | 74    | 86    | 78      | 45     | 417   |   |
| 8  | 108  | Ganesh  | 53     | 62      | 76    | 88    | 76      | 35     | 390   |   |
| 9  | 109  | Nags    | 55     | 77      | 44    | 77    | 86      | 58     | 397   |   |
| 10 | 110  | Biswa   | 66     | 48      | 86    | 95    | 48      | 47     | 390   |   |
| 11 | 111  | Ritchi  | 66     | 68      | 64    | 76    | 98      | 75     | 447   |   |
| 12 | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |   |
| 13 | 112  | shareef | 50     | 63      | 99    | 90    | 76      | 67     | 445   |   |
| 14 | 113  | sonu    | 60     | 89      | 98    | 87    | 77      | 68     | 479   |   |
| 15 | 114  | Rajesh  | 45     | 67      | 77    | 55    | 66      | 46     | 356   |   |
| 16 | 115  | Rakesh  | 67     | 78      | 88    | 78    | 67      | 49     | 427   |   |

|    | percent | grade |
|----|---------|-------|
| 0  | 65.83   | NULL  |
| 1  | 59.50   | NULL  |
| 2  | 70.00   | NULL  |
| 3  | 61.17   | NULL  |
| 4  | 64.50   | NULL  |
| 5  | 61.67   | NULL  |
| 6  | 67.67   | NULL  |
| 7  | 69.50   | NULL  |
| 8  | 65.00   | NULL  |
| 9  | 66.17   | NULL  |
| 10 | 65.00   | NULL  |
| 11 | 74.50   | NULL  |
| 12 | 64.50   | NULL  |
| 13 | 74.17   | NULL  |
| 14 | 79.83   | NULL  |
| 15 | 59.33   | NULL  |
| 16 | 71.17   | NULL  |

```
In [20]: df.loc[(df["percent"]>75),["grade"]]="DISTINCTION"
print(df)
```

|    | htno | name    | telugu | english | hindi | maths | science | social | total | \ |
|----|------|---------|--------|---------|-------|-------|---------|--------|-------|---|
| 0  | 100  | Ramesh  | 50     | 60      | 66    | 98    | 66      | 55     | 395   |   |
| 1  | 101  | Rajesh  | 45     | 67      | 34    | 67    | 66      | 78     | 357   |   |
| 2  | 102  | Rossum  | 56     | 88      | 56    | 99    | 44      | 77     | 420   |   |
| 3  | 103  | Raji    | 56     | 78      | 34    | 56    | 88      | 55     | 367   |   |
| 4  | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |   |
| 5  | 105  | Karthik | 48     | 62      | 39    | 68    | 65      | 88     | 370   |   |
| 6  | 106  | Kambli  | 53     | 81      | 59    | 92    | 48      | 73     | 406   |   |
| 7  | 107  | Praveen | 46     | 88      | 74    | 86    | 78      | 45     | 417   |   |
| 8  | 108  | Ganesh  | 53     | 62      | 76    | 88    | 76      | 35     | 390   |   |
| 9  | 109  | Nags    | 55     | 77      | 44    | 77    | 86      | 58     | 397   |   |
| 10 | 110  | Biswa   | 66     | 48      | 86    | 95    | 48      | 47     | 390   |   |
| 11 | 111  | Ritchi  | 66     | 68      | 64    | 76    | 98      | 75     | 447   |   |
| 12 | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |   |
| 13 | 112  | shareef | 50     | 63      | 99    | 90    | 76      | 67     | 445   |   |
| 14 | 113  | sonu    | 60     | 89      | 98    | 87    | 77      | 68     | 479   |   |
| 15 | 114  | Rajesh  | 45     | 67      | 77    | 55    | 66      | 46     | 356   |   |
| 16 | 115  | Rakesh  | 67     | 78      | 88    | 78    | 67      | 49     | 427   |   |

|    | percent | grade       |
|----|---------|-------------|
| 0  | 65.83   | NULL        |
| 1  | 59.50   | NULL        |
| 2  | 70.00   | NULL        |
| 3  | 61.17   | NULL        |
| 4  | 64.50   | NULL        |
| 5  | 61.67   | NULL        |
| 6  | 67.67   | NULL        |
| 7  | 69.50   | NULL        |
| 8  | 65.00   | NULL        |
| 9  | 66.17   | NULL        |
| 10 | 65.00   | NULL        |
| 11 | 74.50   | NULL        |
| 12 | 64.50   | NULL        |
| 13 | 74.17   | NULL        |
| 14 | 79.83   | DISTINCTION |
| 15 | 59.33   | NULL        |
| 16 | 71.17   | NULL        |

```
In [22]: df.loc[(df["percent"]>=70)&(df["percent"]<75),["grade"]]="FIRST"
print(df)
```

|    | htno | name    | telugu | english | hindi | maths | science | social | total | \ |
|----|------|---------|--------|---------|-------|-------|---------|--------|-------|---|
| 0  | 100  | Ramesh  | 50     | 60      | 66    | 98    | 66      | 55     | 395   |   |
| 1  | 101  | Rajesh  | 45     | 67      | 34    | 67    | 66      | 78     | 357   |   |
| 2  | 102  | Rossum  | 56     | 88      | 56    | 99    | 44      | 77     | 420   |   |
| 3  | 103  | Raji    | 56     | 78      | 34    | 56    | 88      | 55     | 367   |   |
| 4  | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |   |
| 5  | 105  | Karthik | 48     | 62      | 39    | 68    | 65      | 88     | 370   |   |
| 6  | 106  | Kambli  | 53     | 81      | 59    | 92    | 48      | 73     | 406   |   |
| 7  | 107  | Praveen | 46     | 88      | 74    | 86    | 78      | 45     | 417   |   |
| 8  | 108  | Ganesh  | 53     | 62      | 76    | 88    | 76      | 35     | 390   |   |
| 9  | 109  | Nags    | 55     | 77      | 44    | 77    | 86      | 58     | 397   |   |
| 10 | 110  | Biswa   | 66     | 48      | 86    | 95    | 48      | 47     | 390   |   |
| 11 | 111  | Ritchi  | 66     | 68      | 64    | 76    | 98      | 75     | 447   |   |
| 12 | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |   |
| 13 | 112  | shareef | 50     | 63      | 99    | 90    | 76      | 67     | 445   |   |
| 14 | 113  | sonu    | 60     | 89      | 98    | 87    | 77      | 68     | 479   |   |
| 15 | 114  | Rajesh  | 45     | 67      | 77    | 55    | 66      | 46     | 356   |   |
| 16 | 115  | Rakesh  | 67     | 78      | 88    | 78    | 67      | 49     | 427   |   |

|    | percent | grade       |
|----|---------|-------------|
| 0  | 65.83   | NULL        |
| 1  | 59.50   | NULL        |
| 2  | 70.00   | FIRST       |
| 3  | 61.17   | NULL        |
| 4  | 64.50   | NULL        |
| 5  | 61.67   | NULL        |
| 6  | 67.67   | NULL        |
| 7  | 69.50   | NULL        |
| 8  | 65.00   | NULL        |
| 9  | 66.17   | NULL        |
| 10 | 65.00   | NULL        |
| 11 | 74.50   | FIRST       |
| 12 | 64.50   | NULL        |
| 13 | 74.17   | FIRST       |
| 14 | 79.83   | DISTINCTION |
| 15 | 59.33   | NULL        |
| 16 | 71.17   | FIRST       |



```
In [23]: df.loc[(df["percent"]>=60)&(df["percent"]<70),["grade"]]="SECOND"
print(df)
```

|    | htno | name    | telugu | english | hindi | maths | science | social | total | \ |
|----|------|---------|--------|---------|-------|-------|---------|--------|-------|---|
| 0  | 100  | Ramesh  | 50     | 60      | 66    | 98    | 66      | 55     | 395   |   |
| 1  | 101  | Rajesh  | 45     | 67      | 34    | 67    | 66      | 78     | 357   |   |
| 2  | 102  | Rossum  | 56     | 88      | 56    | 99    | 44      | 77     | 420   |   |
| 3  | 103  | Raji    | 56     | 78      | 34    | 56    | 88      | 55     | 367   |   |
| 4  | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |   |
| 5  | 105  | Karthik | 48     | 62      | 39    | 68    | 65      | 88     | 370   |   |
| 6  | 106  | Kambli  | 53     | 81      | 59    | 92    | 48      | 73     | 406   |   |
| 7  | 107  | Praveen | 46     | 88      | 74    | 86    | 78      | 45     | 417   |   |
| 8  | 108  | Ganesh  | 53     | 62      | 76    | 88    | 76      | 35     | 390   |   |
| 9  | 109  | Nags    | 55     | 77      | 44    | 77    | 86      | 58     | 397   |   |
| 10 | 110  | Biswa   | 66     | 48      | 86    | 95    | 48      | 47     | 390   |   |
| 11 | 111  | Ritchi  | 66     | 68      | 64    | 76    | 98      | 75     | 447   |   |
| 12 | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |   |
| 13 | 112  | shareef | 50     | 63      | 99    | 90    | 76      | 67     | 445   |   |
| 14 | 113  | sonu    | 60     | 89      | 98    | 87    | 77      | 68     | 479   |   |
| 15 | 114  | Rajesh  | 45     | 67      | 77    | 55    | 66      | 46     | 356   |   |
| 16 | 115  | Rakesh  | 67     | 78      | 88    | 78    | 67      | 49     | 427   |   |

|    | percent | grade       |
|----|---------|-------------|
| 0  | 65.83   | SECOND      |
| 1  | 59.50   | NULL        |
| 2  | 70.00   | FIRST       |
| 3  | 61.17   | SECOND      |
| 4  | 64.50   | SECOND      |
| 5  | 61.67   | SECOND      |
| 6  | 67.67   | SECOND      |
| 7  | 69.50   | SECOND      |
| 8  | 65.00   | SECOND      |
| 9  | 66.17   | SECOND      |
| 10 | 65.00   | SECOND      |
| 11 | 74.50   | FIRST       |
| 12 | 64.50   | SECOND      |
| 13 | 74.17   | FIRST       |
| 14 | 79.83   | DISTINCTION |
| 15 | 59.33   | NULL        |
| 16 | 71.17   | FIRST       |

```
In [24]: df.loc[(df["percent"]<60),["grade"]]="THIRD"
print(df)
```

|    | htno | name    | telugu | english | hindi | maths | science | social | total | \ |
|----|------|---------|--------|---------|-------|-------|---------|--------|-------|---|
| 0  | 100  | Ramesh  | 50     | 60      | 66    | 98    | 66      | 55     | 395   |   |
| 1  | 101  | Rajesh  | 45     | 67      | 34    | 67    | 66      | 78     | 357   |   |
| 2  | 102  | Rossum  | 56     | 88      | 56    | 99    | 44      | 77     | 420   |   |
| 3  | 103  | Raji    | 56     | 78      | 34    | 56    | 88      | 55     | 367   |   |
| 4  | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |   |
| 5  | 105  | Karthik | 48     | 62      | 39    | 68    | 65      | 88     | 370   |   |
| 6  | 106  | Kambli  | 53     | 81      | 59    | 92    | 48      | 73     | 406   |   |
| 7  | 107  | Praveen | 46     | 88      | 74    | 86    | 78      | 45     | 417   |   |
| 8  | 108  | Ganesh  | 53     | 62      | 76    | 88    | 76      | 35     | 390   |   |
| 9  | 109  | Nags    | 55     | 77      | 44    | 77    | 86      | 58     | 397   |   |
| 10 | 110  | Biswa   | 66     | 48      | 86    | 95    | 48      | 47     | 390   |   |
| 11 | 111  | Ritchi  | 66     | 68      | 64    | 76    | 98      | 75     | 447   |   |
| 12 | 104  | Kalyan  | 51     | 63      | 62    | 93    | 67      | 51     | 387   |   |
| 13 | 112  | shareef | 50     | 63      | 99    | 90    | 76      | 67     | 445   |   |
| 14 | 113  | sonu    | 60     | 89      | 98    | 87    | 77      | 68     | 479   |   |
| 15 | 114  | Rajesh  | 45     | 67      | 77    | 55    | 66      | 46     | 356   |   |
| 16 | 115  | Rakesh  | 67     | 78      | 88    | 78    | 67      | 49     | 427   |   |

|    | percent | grade       |
|----|---------|-------------|
| 0  | 65.83   | SECOND      |
| 1  | 59.50   | THIRD       |
| 2  | 70.00   | FIRST       |
| 3  | 61.17   | SECOND      |
| 4  | 64.50   | SECOND      |
| 5  | 61.67   | SECOND      |
| 6  | 67.67   | SECOND      |
| 7  | 69.50   | SECOND      |
| 8  | 65.00   | SECOND      |
| 9  | 66.17   | SECOND      |
| 10 | 65.00   | SECOND      |
| 11 | 74.50   | FIRST       |
| 12 | 64.50   | SECOND      |
| 13 | 74.17   | FIRST       |
| 14 | 79.83   | DISTINCTION |
| 15 | 59.33   | THIRD       |
| 16 | 71.17   | FIRST       |

```
In [ ]:
```