In [15]:
```
import pandas as pd
```

In [17]:
```
df = pd.read_csv("Marks.csv")
```

In [19]:
```
def assign_grade(marks):
    if marks >= 150:
        return "S+"
    elif marks >= 130:
        return "S"
    elif marks >= 110:
        return "A+"
    elif marks >= 90:
        return "A"
    elif marks >= 80:
        return "B+"
    elif marks >= 70:
        return "B"
    elif marks >= 60:
        return "C+"
    elif marks >= 50:
        return "C"
    elif marks >= 40:
        return "D"
    else:
        return "F"
```

In [21]:
```
df
```

Out[21]:

	Student	Final Marks
0	1	129
1	2	101
2	3	119
3	4	78
4	5	120
5	6	82
6	7	103
7	8	64
8	9	110
9	10	106
10	11	113
11	12	103
12	13	120
13	14	81
14	15	102
15	16	88
16	17	105
17	18	101
18	19	139
19	20	117
20	21	142
21	22	109
22	23	98
23	24	110
24	25	105
25	26	107
26	27	93
27	28	108
28	29	135
29	30	104
30	31	98
31	32	92
32	33	129

	Student	Final Marks
33	34	146
34	35	80
35	36	116
36	37	115
37	38	105
38	39	80
39	40	117
40	41	109
41	42	17
42	43	110
43	44	90
44	45	103
45	46	96
46	47	91
47	48	113
48	49	91
49	50	92
50	51	122
51	52	62
52	53	170
53	54	103
54	55	108
55	56	103
56	57	91
57	58	85
58	59	95
59	60	92

In [27]:
```
df["Grade"] = df["Final Marks"].apply(assign_grade)
```

In [29]:
```
df
```

Out[29]:

	Student	Final Marks	Grade
0	1	129	A+
1	2	101	A
2	3	119	A+
3	4	78	B
4	5	120	A+
5	6	82	B+
6	7	103	A
7	8	64	C+
8	9	110	A+
9	10	106	A
10	11	113	A+
11	12	103	A
12	13	120	A+
13	14	81	B+
14	15	102	A
15	16	88	B+
16	17	105	A
17	18	101	A
18	19	139	S
19	20	117	A+
20	21	142	S
21	22	109	A
22	23	98	A
23	24	110	A+
24	25	105	A
25	26	107	A
26	27	93	A
27	28	108	A
28	29	135	S
29	30	104	A
30	31	98	A
31	32	92	A
32	33	129	A+

	Student	Final Marks	Grade
33	34	146	S
34	35	80	B+
35	36	116	A+
36	37	115	A+
37	38	105	A
38	39	80	B+
39	40	117	A+
40	41	109	A
41	42	17	F
42	43	110	A+
43	44	90	A
44	45	103	A
45	46	96	A
46	47	91	A
47	48	113	A+
48	49	91	A
49	50	92	A
50	51	122	A+
51	52	62	C+
52	53	170	S+
53	54	103	A
54	55	108	A
55	56	103	A
56	57	91	A
57	58	85	B+
58	59	95	A
59	60	92	A

In [31]:
```
print("Head of the DataFrame:")
print(df.head())
```

```
Head of the DataFrame:
   Student  Final Marks Grade
0        1          129    A+
1        2          101     A
2        3          119    A+
3        4           78     B
4        5          120    A+
```

In [33]:
```
print("\nTail of the DataFrame:")
print(df.tail())
```

```
Tail of the DataFrame:
    Student  Final Marks Grade
55       56          103     A
56       57           91     A
57       58           85    B+
58       59           95     A
59       60           92     A
```

In [35]:
```
print("\nSliced Data (Rows 10-20):")
print(df[9:20])
```

```
Sliced Data (Rows 10-20):
    Student  Final Marks Grade
9        10          106     A
10       11          113    A+
11       12          103     A
12       13          120    A+
13       14           81    B+
14       15          102     A
15       16           88    B+
16       17          105     A
17       18          101     A
18       19          139     S
19       20          117    A+
```

In [37]:
```
print("\nHighest Marks:", df["Final Marks"].max())
print("Lowest Marks:", df["Final Marks"].min())
```

```
Highest Marks: 170
Lowest Marks: 17
```

In [39]:
```
print("\nGrade Distribution:")
print(df["Grade"].value_counts())
```

```
Grade Distribution:
Grade
A     30
A+    15
B+     6
S      4
C+     2
B      1
F      1
S+     1
Name: count, dtype: int64
```

In [ ]:
```
highest_grade = df["Grade"].max()  # Gets the highest grade based on sorting
lowest_grade = df["Grade"].min()  # Gets the lowest grade
```

In [45]:
```
print("Highest Grade:", highest_grade)
print("Lowest Grade:", lowest_grade)
```

```
Highest Grade: S+
Lowest Grade: A
```

In [ ]:
```

```