Pandas Merge (Similar to JOIN in SQL)

t1

ID	NAME	SALARY
1	A	100
2	B	120
3	C	150
4	D	80
5	E	200
6	F	180

t2

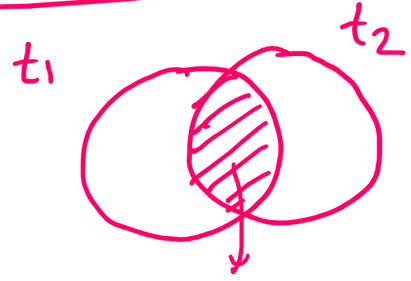
ID	DEPT
1	X
2	Y
3	Z
4	X
5	Z

```
SELECT t1.ID, t1.NAME, t1.SALARY, t2.DEPT
FROM t1
INNER JOIN t2
ON t1.ID = t2.ID
```

Inner Join

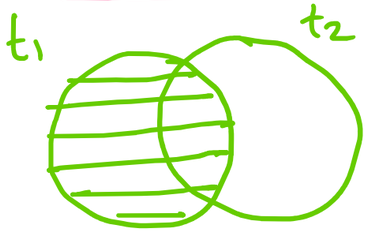
ID	NAME	SAL	DEPT
1	A	100	X
2	B	120	Y
3	C	150	Z
4	D	80	X
5	E	200	Z

Inner Join :-

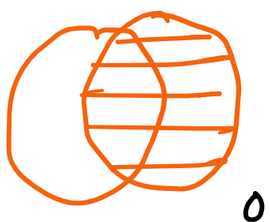


Common keys

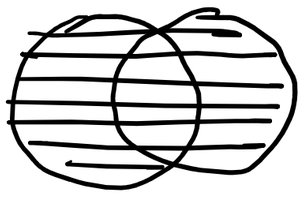
LEFT JOIN



RIGHT JOIN



OUTER JOIN



Left Join

ID	NAME	SAL	DEPT
1	A	100	X
2	B	120	Y
3	C	150	Z
4	D	80	X
5	E	200	Z
6	F	180	NULL

left ↖ ↗ right

```
pd.merge(t1, t2, how='inner', on='ID')
```

CROSS JOIN :-

t1

ID	VAL
1	A
2	B
3	C

n_1

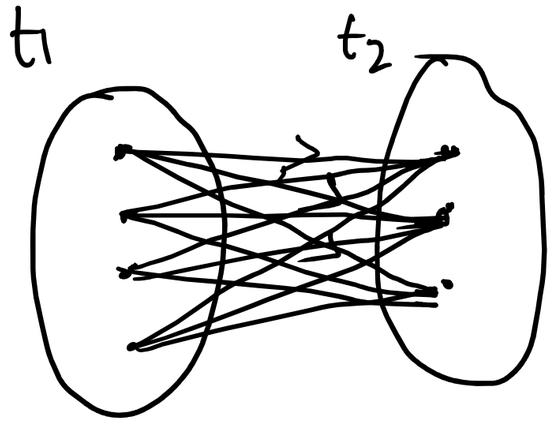
t2

ID	CON
1	X
2	Y
3	Z

n_2

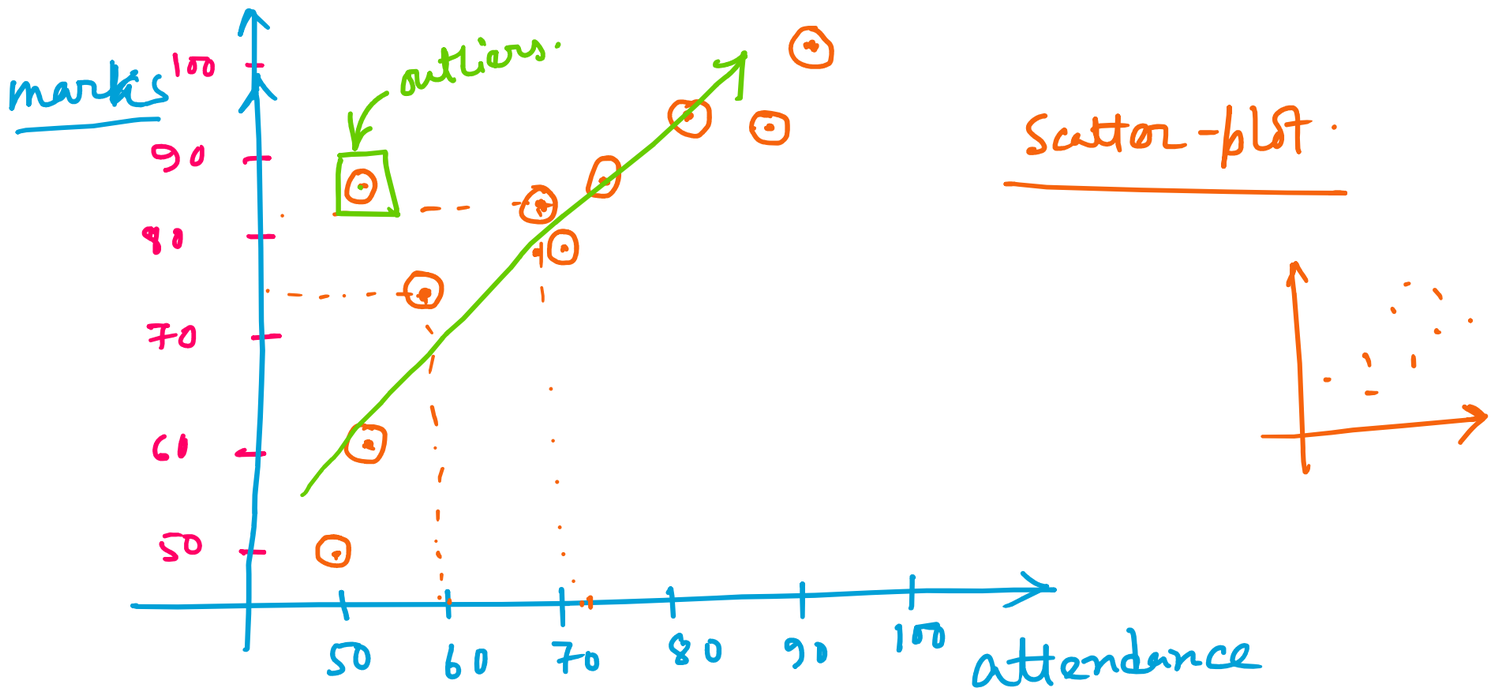
ID	VAL	CON
1	A	X
1	A	Y
1	A	Z
2	B	X
2	B	Y
2	B	Z
3	C	X
3	C	Y
3	C	Z

```
SELECT *
 FROM t1
  CROSS JOIN t2
  ON t1.ID = t2.ID
```



$n_1 * n_2$

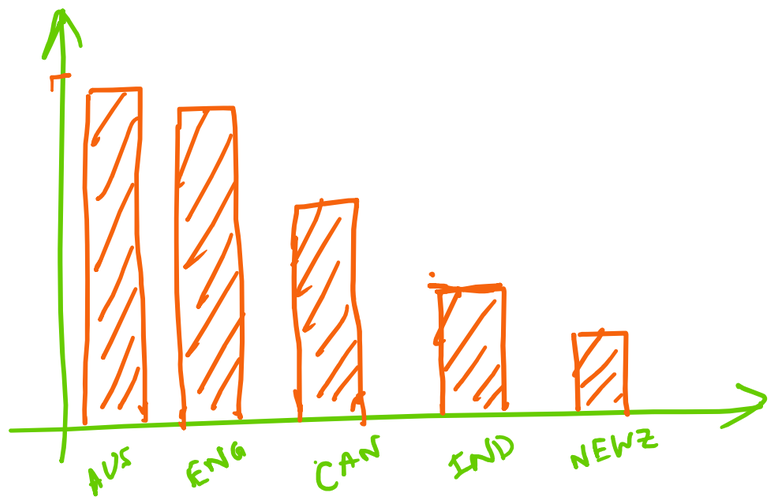
attendance	marks
60	73
72	81
55	60
50	48
75	82
85	91
90	89
71	76
53	82
92	99

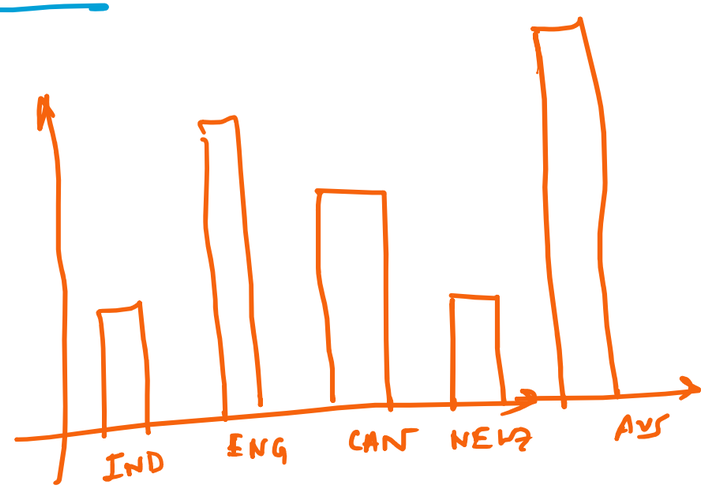


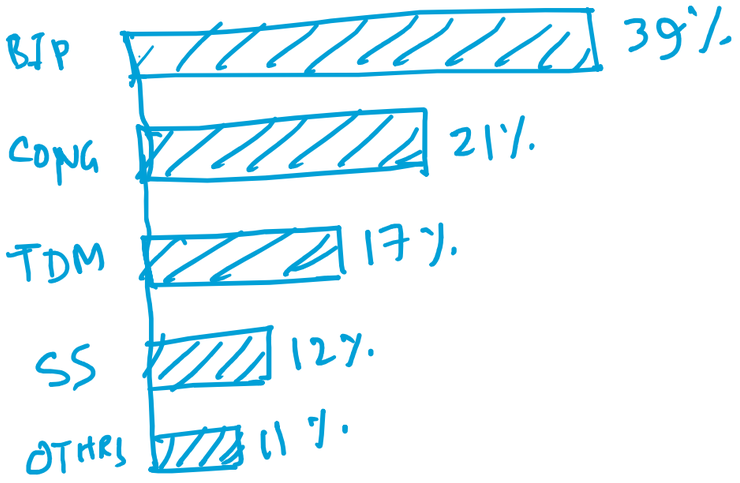
Scatter-plot

BAR CHART

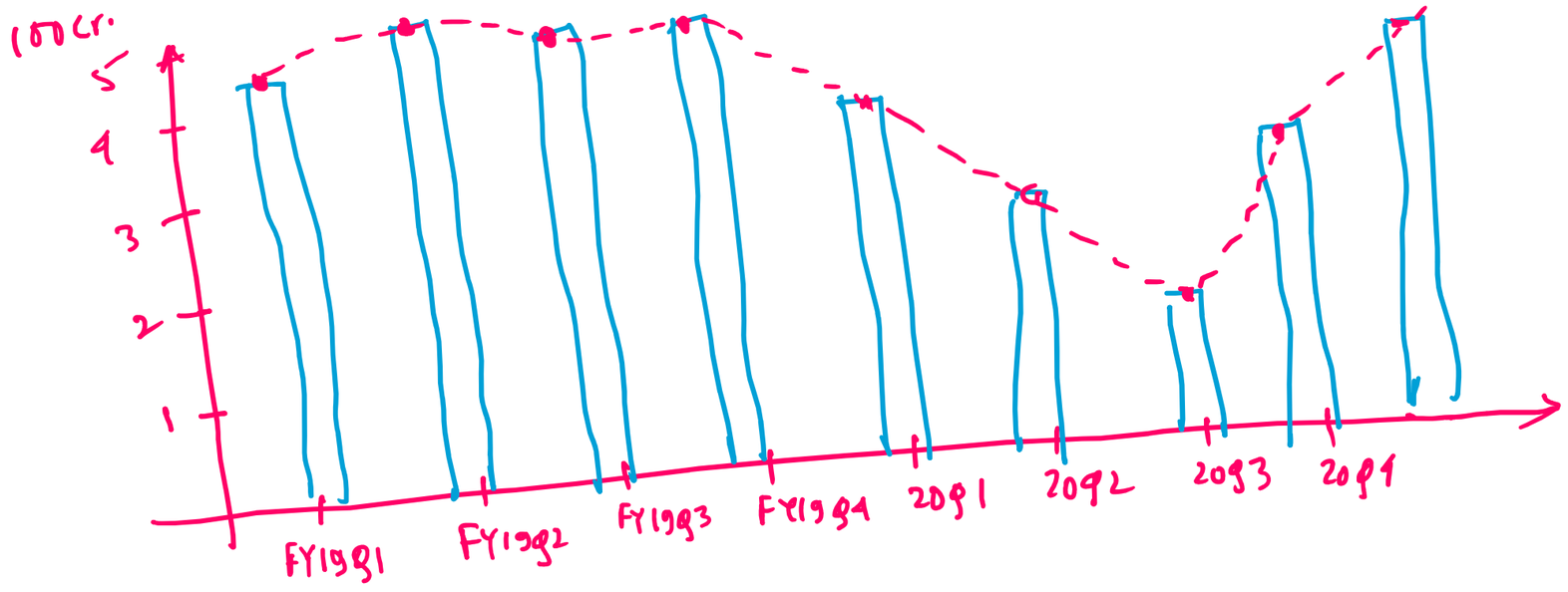
medal tally in CW-2022



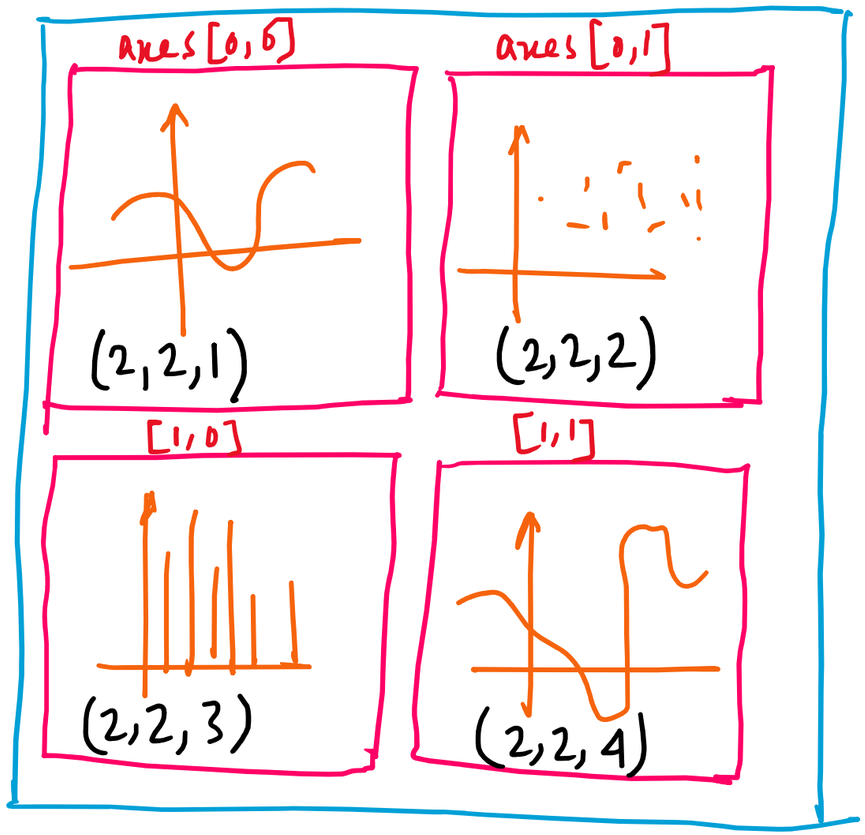




Horizontal Bar plot



plt.subplot(2,2)



plt.subplot(3,2)