Q.1 **Create a 'student' database with (sid, sname, city, age must > 6).**

- **Insert 7 records.**
- **Create user defined function disp_Stud (con, query).**
- **It contains two passing parameters: Connection and the Query.**
- **Find all the details of students whose name's second and last letter is 'a'.**
- **Ex. Rama, Radha, Mahira... and display records in table format.**

SQL

CREATE:-

```
import sqlite3 as MHJ118

conn=MHJ118.connect('HAMZA118.db')

print("YOUR DATABASE HAS BEEN OPENED SUCCESSFULLY")

conn.execute("'CREATE TABLE STUDENT118
(SID NUMERIC PRIMARY KEY,
 SNAME TEXT,
CITY TEXT,
AGE NUMERIC CHECK (AGE>6));'")

print("Table is CREATE SUCCESSFULLY")

conn.close
```

```
===== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.py ====
YOUR DATABASE HAS BEEN OPENED SUCCESSFULLY
Table is CREATE SUCCESSFULLY
```

INSERTING DATA:-

```
import sqlite3 as MHJ118

conn=MHJ118.connect('HAMZA118.db')

print("YOUR DATABASE HAS BEEN OPENED SUCCESSFULLY")


conn.execute("'INSERT INTO STUDENT118 VALUES(101,'HAMZA','NAVSARI',19);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close

conn.execute("'INSERT INTO STUDENT118 VALUES(102,'ZAID','BILIMORE',18);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close
```

```
conn.execute("'INSERT INTO STUDENT118 VALUES(103,'ZEBA','SURAT',20);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close

conn.execute("'INSERT INTO STUDENT118 VALUES(104,'ATIK','GANDEVI',22);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close

conn.execute("'INSERT INTO STUDENT118 VALUES(105,'RAMA','BILIMORE',17);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close

conn.execute("'INSERT INTO STUDENT118 VALUES(106,'RADHA','NAVSARI',16);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close

conn.execute("'INSERT INTO STUDENT118 VALUES(107,'MAHIRA','SURAT',21);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close
```

```
===== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.py ====
YOUR DATABASE HAS BEEN OPENED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
```

```
===== RESTART: C:\Users\Lenovo\Desktop\python handing\JOURNAL-4\HAMZA118.py =
YOUR DATABASE HAS BEEN OPENED SUCCESSFULLY
(101, 'HAMZA', 'NAVSARI', 19)
(102, 'ZAID', 'BILIMORE', 18)
(103, 'ZEBA', 'SURAT', 20)
(104, 'ATIK', 'GANDEVI', 22)
(105, 'RAMA', 'BILIMORE', 17)
(106, 'RADHA', 'NAVSARI', 16)
(107, 'MAHIRA', 'SURAT', 21)
```

UDF FUNCTION:-

```
import sqlite3 as MHJ118

def disp_stud(conn,query):
        c=conn.execute(query)
        for i in c:
                print(i)

disp_stud(conn=MHJ118.connect('HAMZA118.db'),query="select * from student118 where SNAME like '_a%a';")
```

```
===== RESTART: C:\Users\Lenovo\Desktop\python handing\JOURNAL-4\HAMZA118.py ====
disp_stud(conn=MHJ118.connect('HAMZA118.db'),query="select * from student118 where SNAME like '_a%a';")

(101, 'HAMZA', 'NAVSARI', 19)
(105, 'RAMA', 'BILIMORE', 17)
(106, 'RADHA', 'NAVSARI', 16)
(107, 'MAHIRA', 'SURAT', 21)
```

Q.2 **Create COLLEGE database and perform following tasks.**

- **Create following table using SQLite and then close the connection.**
- **Student (roll_no INTEGER Primary key, name text(20), city text(20), age INTEGER) .**
- **Insert 10 student records for Student table.**
- **Display all records of the Student table using cursor.**
- **Export the Student table to CSV file.**

SQL

Connecting SQLITE3:-

```
import sqlite3 as MHJ118

conn=MHJ118.connect('COLLEGE.db')
print("Your Database is Created Successfully")
```

```
==== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.2.py ===
Your Database is Created Successfully
```

CREATE:-

```
import sqlite3 as MHJ118

conn=MHJ118.connect('COLLEGE.db')
print("Your Database is Created Successfully")

conn.execute('''create table STUDENT118
(
roll_no integer primary key,
name text(20),
city text(20),
age integer
);''')

print("Your Table is Create successfully")

conn.close
```

```
==== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.2.py =
Your Database is Created Successfully
Your Table is Create successfully
```

INSERTING DATA:-

```
import sqlite3 as MHJ118

conn=MHJ118.connect('COLLEGE.db')
print("Your Database is Created Successfully")
```

```
conn.execute("'INSERT INTO STUDENT118 VALUES(101,'HAMZA','NAVSARI',19);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close

conn.execute("'INSERT INTO STUDENT118 VALUES(102,'ZAID','BILIMORE',18);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close

conn.execute("'INSERT INTO STUDENT118 VALUES(103,'ZEBA','SURAT',20);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close

conn.execute("'INSERT INTO STUDENT118 VALUES(104,'ATIK','GANDEVI',22);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close

conn.execute("'INSERT INTO STUDENT118 VALUES(105,'RAMA','BILIMORE',17);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close

conn.execute("'INSERT INTO STUDENT118 VALUES(106,'RADHA','NAVSARI',16);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close

conn.execute("'INSERT INTO STUDENT118 VALUES(107,'MAHIRA','SURAT',21);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close

conn.execute("'INSERT INTO STUDENT118 VALUES(108,'SURGE','NAVSARI',19);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close

conn.execute("'INSERT INTO STUDENT118 VALUES(109,'COLLEX','SURAT',23);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close

conn.execute("'INSERT INTO STUDENT118 VALUES(110,'DEV','BILIMORE',21);'")
conn.commit()
print("RECORD INSERTED SUCCESSFULLY")
conn.close
```

```
==== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.2.py =
Your Database is Created Successfully
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
RECORD INSERTED SUCCESSFULLY
```

```
==== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.2.py ===
Your Database is Created Successfully
(101, 'HAMZA', 'NAVSARI', 19)
(102, 'ZAID', 'BILIMORE', 18)
(103, 'ZEBA', 'SURAT', 20)
(104, 'ATIK', 'GANDEVI', 22)
(105, 'RAMA', 'BILIMORE', 17)
(106, 'RADHA', 'NAVSARI', 16)
(107, 'MAHIRA', 'SURAT', 21)
(108, 'SURGE', 'NAVSARI', 19)
(109, 'COLLEX', 'SURAT', 23)
(110, 'DEV', 'BILIMORE', 21)
```

CURSOR:-

```
import sqlite3 as MHJ118

conn=MHJ118.connect('COLLEGE.db')
print("Your Database is Created Successfully")
b=conn.cursor()
c=b.execute('"SELECT * FROM STUDENT118;"')

for i in c:
   print(i)
conn.close
```

```
==== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.2.py ===
Your Database is Created Successfully
(101, 'HAMZA', 'NAVSARI', 19)
(102, 'ZAID', 'BILIMORE', 18)
(103, 'ZEBA', 'SURAT', 20)
(104, 'ATIK', 'GANDEVI', 22)
(105, 'RAMA', 'BILIMORE', 17)
(106, 'RADHA', 'NAVSARI', 16)
(107, 'MAHIRA', 'SURAT', 21)
(108, 'SURGE', 'NAVSARI', 19)
(109, 'COLLEX', 'SURAT', 23)
(110, 'DEV', 'BILIMORE', 21)
```

Python to CSVFile:-

```
import sqlite3 as MHJ118

import csv

conn=MHJ118.connect('COLLEGE.db')

c=conn.execute("select * from STUDENT118;")

a=["Roll_no","Name","City","Age"]

with open('college.csv','w') as f:
        w=csv.writer(f)
        w.writerow(a)
        for i in c:
                w.writerow(i)
print("Your csv File is create successfully")
conn.close
```

```
================== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.2.py =
Your csv File is create successfully
```

	A	B	C	D
1	Roll_no	Name	City	Age
2				
3	101	HAMZA	NAVSARI	19
4				
5	102	ZAID	BILIMORE	18
6				
7	103	ZEBA	SURAT	20
8				
9	104	ATIK	GANDEVI	22
10				
11	105	RAMA	BILIMORE	17
12				
13	106	RADHA	NAVSARI	16
14				
15	107	MAHIRA	SURAT	21
16				
17	108	SURGE	NAVSARI	19
18				
19	109	COLLEX	SURAT	23
20				
21	110	DEV	BILIMORE	21

Q.3 **Write a python program to implement CREATE, INSERT and SELECT operation on Employee database using sqlite3 library.**

- **Use Empdetail (empno, name, city, designation, salary, dateofjoin) table.**
- **Insert at-least 10 records.**
- **Display all records of the Employee table using cursor.**
- **Export the Employee table to CSV file .**
- **Write a python code to write the data frame in the csv file.**
- **Name csv file as "studentinfo.csv". and also create Bar chart for the same.**

SQL

CREATE:-

```
import sqlite3 as MHJ118

conn=MHJ118.connect('HAMZA118_2.db')
print("Your Database is create successfully")

conn.execute('''create table EMPDETAIL
(
empno numeric PRIMARY KEY,
name text,
city text,
designation text,
salary numeric,
dateofjoin date
);''')

print("Your Table is created Successfully")

conn.close
```

```
==== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.3.py ==
Your Database is create successfully
Your Table is created Successfully
```

INSERTING DATA:-

```
import sqlite3 as MHJ118

conn=MHJ118.connect('HAMZA118_2.db')
print("Your Database is create successfully")

conn.execute('''insert into EMPDETAIL values(101,'hamza','navsari','hr',70000,'12/12/2021');''')
conn.commit()
print("record is insert successfully")
conn.close

conn.execute('''insert into EMPDETAIL values(102,'zaid','bilimora','manager',40000,'02/09/2022');''')
conn.commit()
print("record is insert successfully")
conn.close
```

```
conn.execute("'insert into EMPDETAIL values(103,'atik','surat','accountant',60000,'07/04/2022');'")
conn.commit()
print("record is insert successfully")
conn.close

conn.execute("'insert into EMPDETAIL values(104,'dev','gandevi','clerk',60000,'15/05/2021');'")
conn.commit()
print("record is insert successfully")
conn.close

conn.execute("'insert into EMPDETAIL values(105,'muju','Rajkot','peon',30000,'17/04/2020');'")
conn.commit()
print("record is insert successfully")
conn.close

conn.execute("'insert into EMPDETAIL values(106,'surge','Rajkot','hr',100000,'20/04/2021');'")
conn.commit()
print("record is insert successfully")
conn.close

conn.execute("'insert into EMPDETAIL values(107,'collex','surat','manager',45000,'02/02/2022');'")
conn.commit()
print("record is insert successfully")
conn.close

conn.execute("'insert into EMPDETAIL
values(108,'sahil','bilimora','accountant',90000,'19/07/2020');'")
conn.commit()
print("record is insert successfully")
conn.close

conn.execute("'insert into EMPDETAIL values(109,'yash','navsari','clerk',450000,'20/09/2021');'")
conn.commit()
print("record is insert successfully")
conn.close

conn.execute("'insert into EMPDETAIL values(110,'musheb','gandevi','peon',35000,'07/12/2022');'")
conn.commit()
print("record is insert successfully")
conn.close
```

```
================= RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.3.py =
Your Database is create successfully
record is insert successfully
record is insert successfully
record is insert successfully
record is insert successfully
record is insert successfully
record is insert successfully
record is insert successfully
record is insert successfully
record is insert successfully
```

```
================= RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.3.py =
Your Database is create successfully
(101, 'hamza', 'navsari', 'hr', 70000, '12/12/2021')
(102, 'zaid', 'bilimora', 'manager', 40000, '02/09/2022')
(103, 'atik', 'surat', 'accountant', 60000, '07/04/2022')
(104, 'dev', 'gandevi', 'clerk', 60000, '15/05/2021')
(105, 'muju', 'Rajkot', 'peon', 30000, '17/04/2020')
(106, 'surge', 'Rajkot', 'hr', 100000, '20/04/2021')
(107, 'collex', 'surat', 'manager', 45000, '02/02/2022')
(108, 'sahil', 'bilimora', 'accountant', 90000, '19/07/2020')
(109, 'yash', 'navsari', 'clerk', 450000, '20/09/2021')
(110, 'musheb', 'gandevi', 'peon', 35000, '07/12/2022')
```

Cursor:-

```
import sqlite3 as MHJ118

conn=MHJ118.connect('HAMZA118_2.db')
print("Your Database is create successfully")

b=conn.cursor()

c=b.execute("select * from EMPDEATIL;")
for i in c:
    print(i)
```

```
================= RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.3.py =
Your Database is create successfully
(101, 'hamza', 'navsari', 'hr', 70000, '12/12/2021')
(102, 'zaid', 'bilimora', 'manager', 40000, '02/09/2022')
(103, 'atik', 'surat', 'accountant', 60000, '07/04/2022')
(104, 'dev', 'gandevi', 'clerk', 60000, '15/05/2021')
(105, 'muju', 'Rajkot', 'peon', 30000, '17/04/2020')
(106, 'surge', 'Rajkot', 'hr', 100000, '20/04/2021')
(107, 'collex', 'surat', 'manager', 45000, '02/02/2022')
(108, 'sahil', 'bilimora', 'accountant', 90000, '19/07/2020')
(109, 'yash', 'navsari', 'clerk', 450000, '20/09/2021')
(110, 'musheb', 'gandevi', 'peon', 35000, '07/12/2022')
```

Export the Employee table to CSV file:-

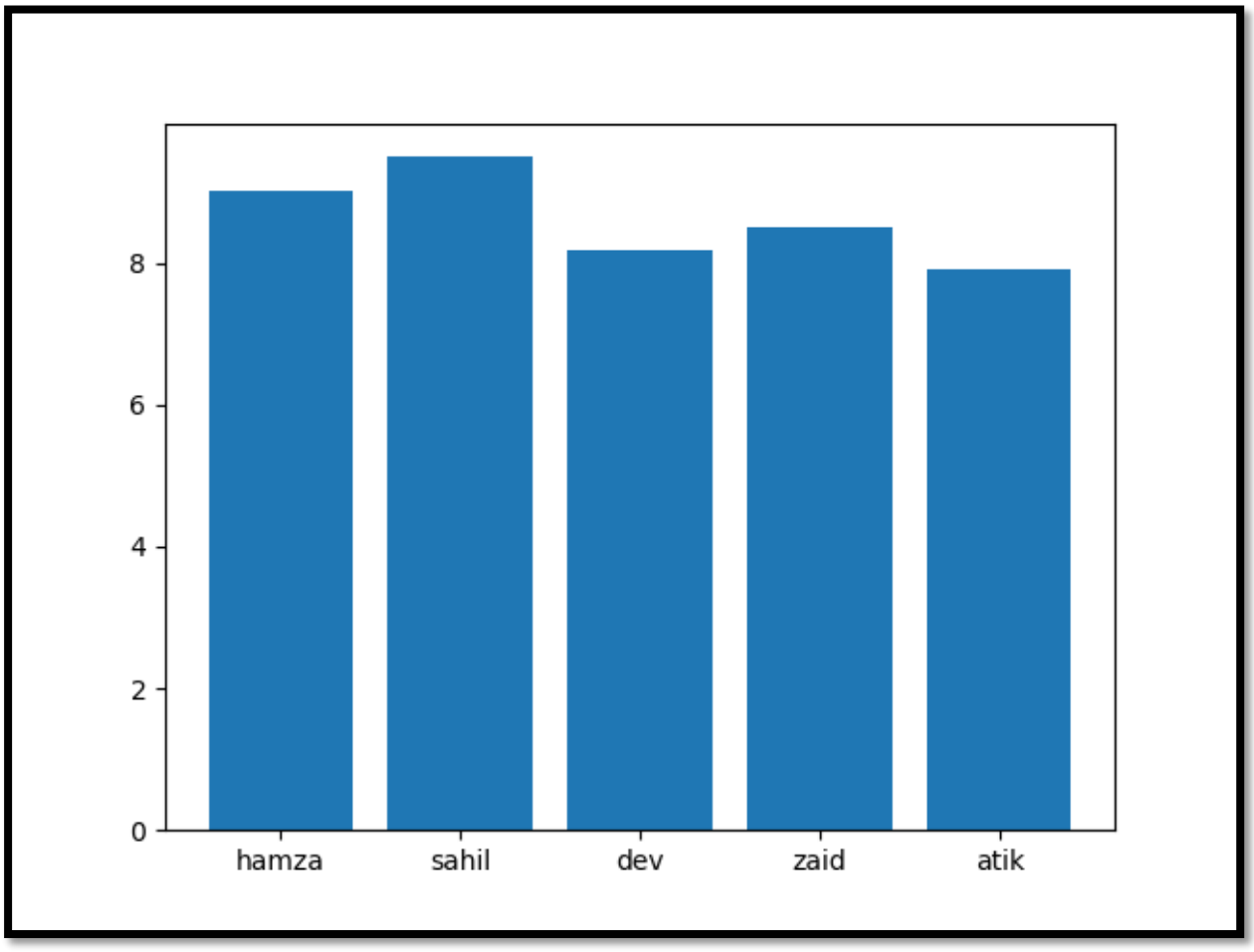
```
import sqlite3 as MHJ118

import csv

conn=MHJ118.connect('HAMZA118_2.db')

c=conn.execute('''select * from EMPDETAIL;''')

a=["Empno","name","city","designation","salary","dateofjoin"]

with open('Employee.csv','w') as f:
    w=csv.writer(f)
    w.writerow(a)
    for i in c:
        w.writerow(i)
print("Your csv File is SUCCESSFULLY Made")
conn.close
```

```
==== RESTART: C:\Users\Lenovo\Desktop\python handing\JOURNAL-4\HAMZA118.4.py ==
Your csv File is SUCCESSFULLY Made
```

	A	B	C	D	E	F
1	Empno	name	city	designatio	salary	dateofjoin
2						
3	101	hamza	navsari	hr	70000	12/12/2021
4						
5	102	zaid	bilimora	manager	40000	2/9/2022
6						
7	103	atik	surat	accountan	60000	7/4/2022
8						
9	104	dev	gandevi	clerk	60000	15/05/2021
10						
11	105	muju	Rajkot	peon	30000	17/04/2020
12						
13	106	surge	Rajkot	hr	100000	20/04/2021
14						
15	107	collex	surat	manager	45000	2/2/2022
16						
17	108	sahil	bilimora	accountan	90000	19/07/2020
18						
19	109	yash	navsari	clerk	450000	20/09/2021
20						
21	110	musheb	gandevi	peon	35000	7/12/2022

DataFrame & Create Bar chart for the same:-

```
import matplotlib.pyplot as MHJ118
import pandas as pd
name=['hamza','sahil','dev','zaid','atik']
city=['navsari','bilimora','gandevi','surat','Rajkot']
cgpa=[9.01,9.50,8.19,8.51,7.91]
data={'name':name,
'city':city,
'Cgpa':cgpa}
d=pd.DataFrame(data)
d.to_csv('studentinfo.csv')
MHJ118.bar(name,cgpa)
MHJ118.show()
```



Q.4	**Write a Python Script to do followings on student (Rollno, Name, Sub1, Sub2, Sub3, Total) Table** • **Insert at least 5 to 10 records.** • **Update the Specific record value.** • **Delete the record Specific record.** • **Display student detail who got highest total marks.**

SQL	**CREATE:-**
	
	import sqlite3 as MHJ118
	
	conn=MHJ118.connect('HAMZA118_3.db')
	print("Your database is successfully create")
	
	conn.execute("'create table student118
	(
	rollno numeric,
	name text,
	sub1 numeric,
	sub2 numeric,
	sub3 numeric,
	total numeric
	);"')
	
	print("Your table is create successfully")
	conn.close
	
	`========== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.4.py =`
	`Your database is successfully create`
	`Your table is create successfully`
	
	Insert at least 5 to 10 records:-
	
	import sqlite3 as MHJ118
	
	conn=MHJ118.connect('HAMZA118_3.db')
	print("Your database is successfully create")
	
	conn.execute("'insert into student118 values(118,'hamza',97,93,99,289)"')
	conn.commit()
	print("Your data is successfully inserted")
	conn.close
	
	conn.execute("'insert into student118 values(119,'zaid',77,73,79,229)"')
	conn.commit()
	print("Your data is successfully inserted")
	conn.close
	
	conn.execute("'insert into student118 values(120,'atik',87,83,89,259)"')
	conn.commit()

```
print("Your data is successfully inserted")
conn.close

conn.execute("'insert into student118 values(121,'dev',67,63,69,199)'")
conn.commit()
print("Your data is successfully inserted")
conn.close

conn.execute("'insert into student118 values(122,'sahil',99,98,99,296)'")
conn.commit()
print("Your data is successfully inserted")
conn.close

conn.execute("'insert into student118 values(123,'muju',57,53,59,169)'")
conn.commit()
print("Your data is successfully inserted")
conn.close

conn.execute("'insert into student118 values(124,'surge',100,99,99,298)'")
conn.commit()
print("Your data is successfully inserted")
conn.close

conn.execute("'insert into student118 values(125,'collex',32,33,39,104)'")
conn.commit()
print("Your data is successfully inserted")
conn.close

conn.execute("'insert into student118 values(126,'yash',61,62,63,186)'")
conn.commit()
print("Your data is successfully inserted")
conn.close

conn.execute("'insert into student118 values(127,'ray',27,23,29,79)'")
conn.commit()
print("Your data is successfully inserted")
conn.close
```

```
================== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.4.py ==
Your database is successfully create
Your data is successfully inserted
Your data is successfully inserted
Your data is successfully inserted
Your data is successfully inserted
Your data is successfully inserted
Your data is successfully inserted
Your data is successfully inserted
Your data is successfully inserted
Your data is successfully inserted
```

Update the Specific record value.:-

```
import sqlite3 as MHJ118

conn=MHJ118.connect('HAMZA118_3.db')
print("Your database is successfully create")

c=conn.execute("update student118 set rollno='101' where rollno='127';")
conn.commit()
print ("Record UPDATE Successfully")
print("Total numbers of rows updated:",conn.total_changes)
conn.close
```

```
================== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.4.py =
Your database is successfully create
Record UPDATE Successfully
Total numbers of rows updated: 1
```

```
================== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.4.py =
Your database is successfully create
(118, 'hamza', 97, 93, 99, 289)
(119, 'zaid', 77, 73, 79, 229)
(120, 'atik', 87, 83, 89, 259)
(121, 'dev', 67, 63, 69, 199)
(122, 'sahil', 99, 98, 99, 296)
(123, 'muju', 57, 53, 59, 169)
(124, 'surge', 100, 99, 99, 298)
(125, 'collex', 32, 33, 39, 104)
(126, 'yash', 61, 62, 63, 186)
(101, 'ray', 27, 23, 29, 79)
```

Delete the record Specific record.:-

```
import sqlite3 as MHJ118

conn=MHJ118.connect('HAMZA118_3.db')
print("Your database is successfully create")

c=conn.execute("delete from student118 where rollno='101';")
conn.commit()
print ("Record Delete Successfully")
print("Total numbers of rows updated:",conn.total_changes)
conn.close
```

```
================== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.4.py =
Your database is successfully create
Record Delete Successfully
Total numbers of rows updated: 1
```

```
================== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.4.py ==
Your database is successfully create
(118, 'hamza', 97, 93, 99, 289)
(119, 'zaid', 77, 73, 79, 229)
(120, 'atik', 87, 83, 89, 259)
(121, 'dev', 67, 63, 69, 199)
(122, 'sahil', 99, 98, 99, 296)
(123, 'muju', 57, 53, 59, 169)
(124, 'surge', 100, 99, 99, 298)
(125, 'collex', 32, 33, 39, 104)
(126, 'yash', 61, 62, 63, 186)
```

Display student detail who got highest total marks:-

```
import sqlite3 as MHJ118

conn=MHJ118.connect('HAMZA118_3.db')
print("Your database is successfully create")

c=conn.execute("select max(total) from student118;")
for i in c:
        print(i)
conn.close
```

```
================== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.4.py =
Your database is successfully create
(298,)
```

Q.5 **Create CSV File for Product Selling for 6 Months. ProductName,Jan,Feb,Mar,Apr,May**

- **Add at-least 10 Records for 5 different products.**
- **Create Python script to perform following task.**
  - **a. Read data in Dataframe.**
  - **b. Add columns and calculate total_sell, average_sell.**
  - **c. Plot Total sell and average sell together on Line chart with proper Legends, titles and lables.**
  - **d. Export final dataframe to csv named sell_analysis.csv**

SQL **Add at-least 10 Records for 5 different products:-**

	A	B	C	D	E	F	G
1	Productname	jan	feb	mar	apr	may	june
2	tv	10	1	5	6	7	19
3	table	20	30	40	50	30	10
4	pen	100	249	320	129	150	300
5	pencil	200	349	432	320	399	430
6	mouse	21	10	21	31	41	32
7	fan	5	19	8	14	13	1
8	keyboard	5	19	8	14	13	1
9	ac	1	2	9	4	2	11
10	phone	1	1	1	1	1	1
11	cover	2	3	5	8	2	1

Read data in Dataframe:-

```
import csv
import pandas as pd
row=[]
with open('products_selling.csv','r') as f:
        read=csv.DictReader(f)
        for i in read:
                row.append(i)
df=pd.DataFrame(row)
print(df)
```

```
==== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.5.py =
  Productname  jan  feb  mar  apr  may june
0          tv   10    1    5    6    7   19
1       table   20   30   40   50   30   10
2         pen  100  249  320  129  150  300
3      pencil  200  349  432  320  399  430
4       mouse   21   10   21   31   41   32
5         fan    5   19    8   14   13    1
6    keyboard    5   19    8   14   13    1
7          ac    1    2    9    4    2   11
8       phone    1    1    1    1    1    1
9       cover    2    3    5    8    2    1
```

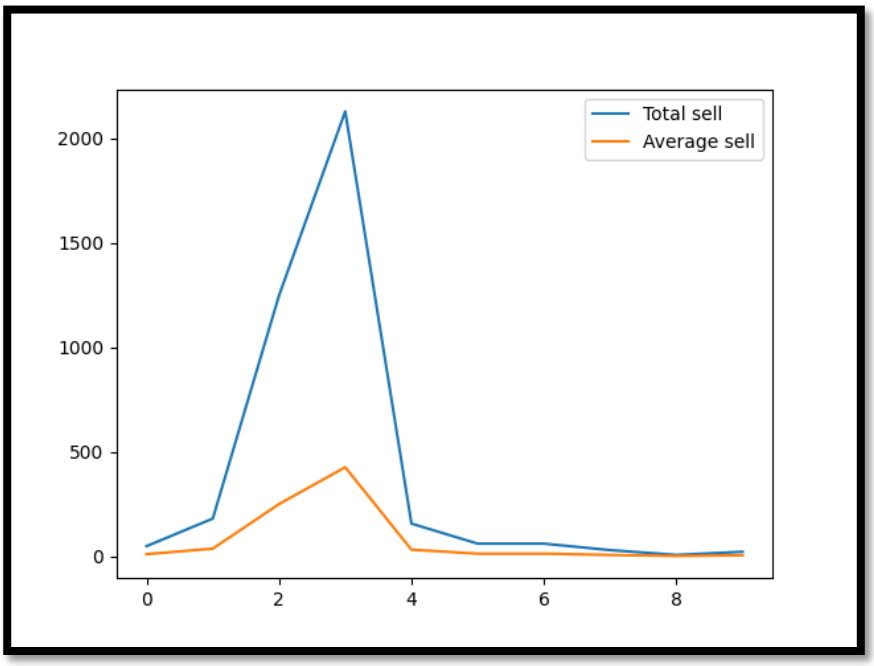
Add columns and calculate total_sell, average_sell:-

```
import csv
import pandas as pd
row=[]
with open('products_selling.csv','r') as f:
        read=csv.DictReader(f)
        for i in read:
                row.append(i)
df=pd.read_csv('products_selling.csv',dtype={'Productname':'string','jan':'int64','feb':'int64','mar':'int6
4'
,'apr':'int64','may':'int64','june':'int64'})
df['total']=df['jan']+df['feb']+df['mar']+df['apr']+df['may']+df['june']
df['average']=df['total']/5
print(df)
```

```
================= RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.5.py =
  Productname  jan  feb  mar  apr  may  june  total  average
0          tv   10    1    5    6    7    19     48      9.6
1       table   20   30   40   50   30    10    180     36.0
2         pen  100  249  320  129  150   300   1248    249.6
3      pencil  200  349  432  320  399   430   2130    426.0
4       mouse   21   10   21   31   41    32    156     31.2
5         fan    5   19    8   14   13     1     60     12.0
6    keyboard    5   19    8   14   13     1     60     12.0
7          ac    1    2    9    4    2    11     29      5.8
8       phone    1    1    1    1    1     1      6      1.2
9       cover    2    3    5    8    2     1     21      4.2
```

Plot Total sell and average sell together on Line chart with proper Legends, titles and lables:-

```
import csv
import pandas as pd
import matplotlib.pyplot as po
row=[]
with open('products_selling.csv','r') as f:
        read=csv.DictReader(f)
        for i in read:
                row.append(i)
df=pd.read_csv('products_selling.csv',dtype={'Productname':'string','jan':'int64','feb':'int64','mar':'int6
4'
,'apr':'int64','may':'int64','june':'int64'})
df['total']=df['jan']+df['feb']+df['mar']+df['apr']+df['may']+df['june']
df['average']=df['total']/5
print(df)
t=df['total']
a=df['average']
po.plot(t)
po.plot(a)
po.legend(['Total sell','Average sell'])
po.show()
```



Export final dataframe to csv named sell_analysis.csv:-

```
import csv
import pandas as pd
import matplotlib.pyplot as po
row=[]
with open('products_selling.csv','r') as f:
        read=csv.DictReader(f)
        for i in read:
                row.append(i)
df=pd.read_csv('products_selling.csv',dtype={'Productname':'string','jan':'int64','feb':'int64','mar':'int6
4
,'apr':'int64','may':'int64','june':'int64'})
df['total']=df['jan']+df['feb']+df['mar']+df['apr']+df['may']+df['june']
df['average']=df['total']/5
print(df)
df.to_csv('sell_analysis.csv')
```

	A	B	C	D	E	F	G	H	I	J
1		Productna	jan	feb	mar	apr	may	june	total	average
2	0	tv	10	1	5	6	7	19	48	9.6
3	1	table	20	30	40	50	30	10	180	36
4	2	pen	100	249	320	129	150	300	1248	249.6
5	3	pencil	200	349	432	320	399	430	2130	426
6	4	mouse	21	10	21	31	41	32	156	31.2
7	5	fan	5	19	8	14	13	1	60	12
8	6	keyboard	5	19	8	14	13	1	60	12
9	7	ac	1	2	9	4	2	11	29	5.8
10	8	phone	1	1	1	1	1	1	6	1.2
11	9	cover	2	3	5	8	2	1	21	4.2

Q.6

Sales (Sid, year, totalsales)

- **Create above table into a SQLite database with appropriate constraints.**
- **Insert at least 10 records into the sales table.**
- **Export sales table data into sales.csv file.**
- **Write a python script that read the sales.csv file and plot a bar chart that shows totalsales of the year. Also decorate the chart with appropriate title, lables, colours,legend.**

SQL

CREATE:-

```
import sqlite3 as MHJ118
conn=MHJ118.connect('HAMZA118_4.db')
print("YOUR database is opened")

conn.execute("'create table sales
(
sid text primary key,
year numeric,
totalsales numeric
);'")
print("Your table is create successfully")
```

```
=== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118..6.py =
YOUR database is opened
Your table is create successfully
```

INSERTING DATA:-

```
conn.execute("insert into sales values(101,2021,100000);")
conn.commit()
print("YOUR Data is Record successfully")
conn.close

conn.execute("insert into sales values(102,2022,200000);")
conn.commit()
print("YOUR Data is Record successfully")
conn.close

conn.execute("insert into sales values(103,2019,200000);")
conn.commit()
print("YOUR Data is Record successfully")
conn.close

conn.execute("insert into sales values(104,2023,150000);")
conn.commit()
print("YOUR Data is Record successfully")
conn.close

conn.execute("insert into sales values(105,2020,230000);")
```

```
conn.commit()
print("YOUR Data is Record successfully")
conn.close

conn.execute("insert into sales values(106,2021,350000);")
conn.commit()
print("YOUR Data is Record successfully")
conn.close

conn.execute("insert into sales values(107,2018,750000);")
conn.commit()
print("YOUR Data is Record successfully")
conn.close


conn.execute("insert into sales values(108,2017,950000);")
conn.commit()
print("YOUR Data is Record successfully")
conn.close


conn.execute("insert into sales values(109,2020,300000);")
conn.commit()
print("YOUR Data is Record successfully")
conn.close

conn.execute("insert into sales values(110,2023,550000);")
conn.commit()
print("YOUR Data is Record successfully")
conn.close
```

```
=== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118..6.py =
YOUR database is opened
YOUR Data is Record successfully
YOUR Data is Record successfully
YOUR Data is Record successfully
YOUR Data is Record successfully
YOUR Data is Record successfully
YOUR Data is Record successfully
YOUR Data is Record successfully
YOUR Data is Record successfully
YOUR Data is Record successfully
YOUR Data is Record successfully
```

Export sales table data into sales.csv file:-

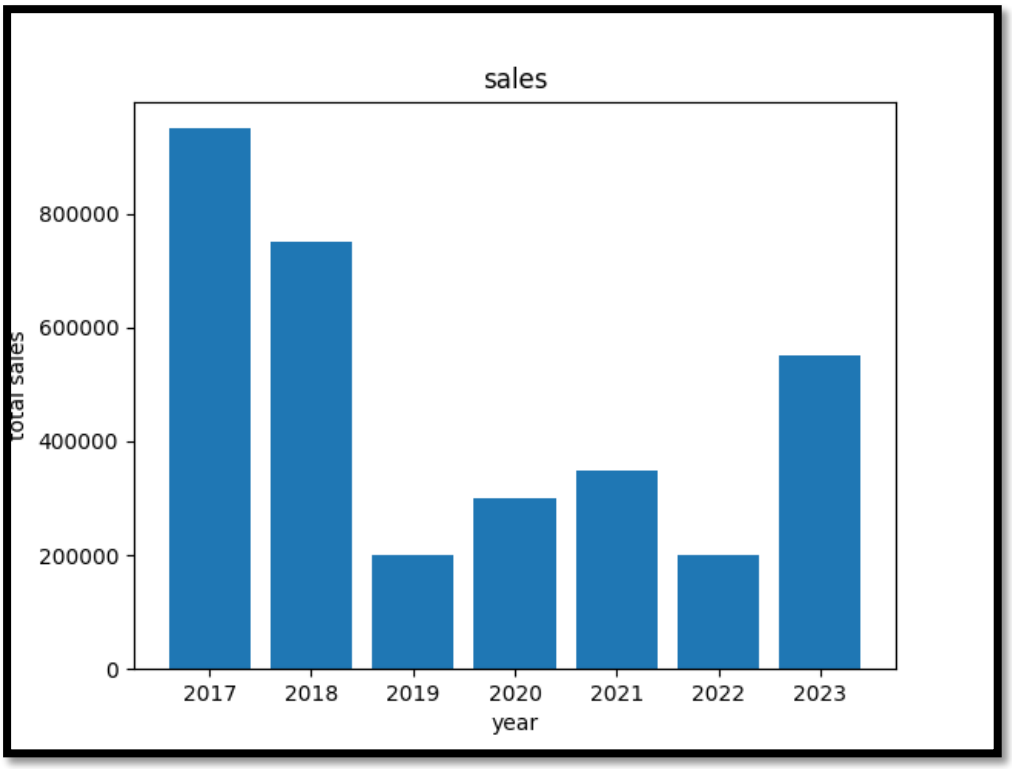
```
import sqlite3 as MHJ118
import csv
conn=MHJ118.connect('HAMZA118_4.db')
print("YOUR database is opened")
c=conn.execute('select * from sales;')
with open('sales.csv','w') as f:
        w=csv.writer(f)
        for i in c:
                w.writerow(i)
print("YOUR csv fie is create successfully")
```

```
================== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118..6.py =
YOUR database is opened
YOUR csv fie is create successfully
```

	A	B	C
1	101	2021	100000
2			
3	102	2022	200000
4			
5	103	2019	200000
6			
7	104	2023	150000
8			
9	105	2020	230000
10			
11	106	2021	350000
12			
13	107	2018	750000
14			
15	108	2017	950000
16			
17	109	2020	300000
18			
19	110	2023	550000

The chart with appropriate title, lables, colours,legend:-

```
import sqlite3 as MHJ118
import matplotlib.pyplot as img
conn=MHJ118.connect('HAMZA118_4.db')
print("YOUR database is opened")
b=conn.cursor()
c=conn.execute("select * from sales;")
x=[]
y=[]
for i in c:
        x.append(i[1])
        y.append(i[2])
img.bar(x,y)
img.xlabel('year')
img.ylabel('total sales')
img.title('sales')
img.show()
```



Q.7 **Write Python Script to do followings onitem.csv (Item_no, Item_name, Price, Qty, total)**

- **Write item's detail in the item.csv file.**
- **Calculate total =price * Qty**
- **Using data frame display item name and price whose price is between 1000 to 5000.**
- **Display alternate records from item.csv file.**
- **Display items whose price is minimum, maximum.**
- **Sort the data according to itemname wise.**
- **Display items rows between 3th to 7th row.**
- **Display last 6 rows**

SQL

Create csv file:-

```
import csv

fields=['iteam_on','iteam_name','price','qty_total']
rows=[['101','tv','50000','10'],
          ['102','table','500','15'],
          ['103','mouse','600','5'],
          ['104','ac','40000','2'],
          ['105','fan','1500','8'],
          ['106','keyboard','700','8'],
          ['107','ligth_bulb','100','4'],
          ['108','cover','300','3'],
          ['109','phone','30000','1'],
          ['110','pen','10','100']]

with open('onitem.csv','w') as f:
        w=csv.writer(f)
        w.writerow(fields)
        w.writerows(rows)
print("Your csv file create successfully")
```

```
================= RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.7.py =
Your csv file create successfully
```

```
==== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.7.py =
   iteam_on  iteam_name  price  qty_total
0       101          tv  50000         10
1       102       table    500         15
2       103       mouse    600          5
3       104          ac  40000          2
4       105         fan   1500          8
5       106    keyboard    700          8
6       107  ligth_bulb    100          4
7       108       cover    300          3
8       109       phone  30000          1
9       110         pen     10        100
```

Write item's detail in the item.csv file.:-

```
import pandas as pd

df=pd.read_csv('onitem.csv')

df['total_price']=df['price']*df['qty_total']

df.to_csv('onitem2.csv', index=False)

print("Your csv file is create successfully")
```

```
================= RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.7.py =
Your csv file create successfully
```

	A	B	C	D	E
1	iteam_on	iteam_nar	price	qty_total	total_price
2	101	tv	50000	10	500000
3	102	table	500	15	7500
4	103	mouse	600	5	3000
5	104	ac	40000	2	80000
6	105	fan	1500	8	12000
7	106	keyboard	700	8	5600
8	107	ligth_bulb	100	4	400
9	108	cover	300	3	900
10	109	phone	30000	1	30000
11	110	pen	10	100	1000

Calculate total =price * Qty:-

```
import pandas as pd

df=pd.read_csv('onitem.csv')


df['total_price']=df['price']*df['qty_total']

df.to_csv('onitem2.csv', index=False)
```

```
================= RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.7.py =
   iteam_on  iteam_name  price  qty_total  total_price
0       101          tv  50000         10       500000
1       102       table    500         15         7500
2       103       mouse    600          5         3000
3       104          ac  40000          2        80000
4       105         fan   1500          8        12000
5       106    keyboard    700          8         5600
6       107  ligth_bulb    100          4          400
7       108       cover    300          3          900
8       109       phone  30000          1        30000
9       110         pen     10        100         1000
```

Using data frame display item name and price whose price is between 1000 to 5000.:-

```
import csv
import pandas as pd
row=[]
with open('onitem2.csv','r') as f:
        read=csv.DictReader(f)
        for i in read:
                row.append(i)
df=pd.read_csv('onitem2.csv',dtype={'iteam_on':'int64','iteam_name':'string','price':'int64','qty_total':'int64','total_price':'int64'})
print(df[(df['price']>=1000) & (df['price']<=5000)])
```

```
================== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.7.py =
   iteam_on iteam_name  price  qty_total  total_price
4       105        fan   1500          8        12000
```

Display alternate records from item.csv file.:-

```
import csv
import pandas as pd
row=[]
with open('onitem2.csv','r') as f:
        read=csv.DictReader(f)
        for i in read:
                row.append(i)
df=pd.read_csv('onitem2.csv',dtype={'iteam_on':'int64','iteam_name':'string','price':'int64','qty_total':'int64','total_price':'int64'})
Length = len(df)
print(df.iloc[0:Length:2])
```

```
================== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.7.py =
   iteam_on  iteam_name  price  qty_total  total_price
0       101          tv  50000         10       500000
2       103       mouse    600          5         3000
4       105         fan   1500          8        12000
6       107  ligth_bulb    100          4          400
8       109       phone  30000          1        30000
```

Display items whose price is minimum, maximum:-

```
import csv
import pandas as pd

row=[]
with open('onitem2.csv','r') as f:
        read=csv.DictReader(f)
        for i in read:
                row.append(i)
df=pd.read_csv('onitem2.csv',dtype={'iteam_on':'int64','iteam_name':'string','price':'int64','qty_total':'int64','total_price':'int64'})
```

```
print("maximum:")
print("-----------------------------------------")
print(df.max())
print("minimum:")
print("-----------------------------------------")
print(df.min())
```

```
================= RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.7.py ==
maximum:
-----------------------------------------
iteam_on          110
iteam_name         tv
price           50000
qty_total         100
total_price    500000
dtype: object
minimum:
-----------------------------------------
iteam_on       101
iteam_name      ac
price           10
qty_total        1
total_price    400
dtype: object
```

Sort the data according to itemname wise:-

```
import csv
import pandas as pd
row=[]
with open('onitem2.csv','r') as f:
        read=csv.DictReader(f)
        for i in read:
                row.append(i)
df=pd.read_csv('onitem2.csv',dtype={'iteam_on':'int64','iteam_name':'string','price':'int64','qty_total':'i
nt64','total_price':'int64'})
print(df.sort_values(by=['iteam_name']))
```

```
================= RESTART: C:/Users/Lenovo/Desktop/python
   iteam_on  iteam_name  price  qty_total  total_price
3       104          ac  40000          2        80000
7       108       cover    300          3          900
4       105         fan   1500          8        12000
5       106    keyboard    700          8         5600
6       107  ligth_bulb    100          4          400
2       103       mouse    600          5         3000
9       110         pen     10        100         1000
8       109       phone  30000          1        30000
1       102       table    500         15         7500
0       101          tv  50000         10       500000
```

Display items rows between 3th to 7th row:-

```
import csv
import pandas as pd
row=[]
with open('onitem2.csv','r') as f:
        read=csv.DictReader(f)
        for i in read:
                row.append(i)
df=pd.read_csv('onitem2.csv',dtype={'iteam_on':'int64','iteam_name':'string','price':'int64','qty_total':'int64','total_price':'int64'})
r=df.iloc[3:7]
print(r)
```

```
================== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.7.py =
   iteam_on  iteam_name  price  qty_total  total_price
3       104          ac  40000          2        80000
4       105         fan   1500          8        12000
5       106    keyboard    700          8         5600
6       107  ligth_bulb    100          4          400
```

Display last 6 rows:-

```
import csv
import pandas as pd
row=[]
with open('onitem2.csv','r') as f:
        read=csv.DictReader(f)
        for i in read:
                row.append(i)
df=pd.read_csv('onitem2.csv',dtype={'iteam_on':'int64','iteam_name':'string','price':'int64','qty_total':'int64','total_price':'int64'})
print(df.tail(6))
```

```
================== RESTART: C:/Users/Lenovo/Desktop/python handing/JOURNAL-4/HAMZA118.7.py =
   iteam_on  iteam_name  price  qty_total  total_price
4       105         fan   1500          8        12000
5       106    keyboard    700          8         5600
6       107  ligth_bulb    100          4          400
7       108       cover    300          3          900
8       109       phone  30000          1        30000
9       110         pen     10        100         1000
```