SQL 1 ✗

```
1    select link from Hyperlinks
```

	link
4	four.html
5	five.html
6	one.html
7	two.html
8	four.html

8 rows returned in 1ms from: select link from Hyperlinks

```
1    select Url,Word from Keywords
```

	Url	Word
5	two.html	Beijing
6	two.html	Paris
7	three.hmtl	Chicago
8	three.hmtl	Beijing
9	four.html	Chicago

13 rows returned in 1ms from: select Url,Word from Keywords

SQL 1 ✕

```
1    select * from Hyperlinks
```

	Url	link
5	four.html	five.html
6	five.html	one.html
7	five.hmtl	two.html
8	five.hmtl	four.html

8 rows returned in 1ms from: select * from Hyperlinks

```
1    select link from Hyperlinks
```

	link
5	five.html
6	one.html
7	two.html
8	four.html

8 rows returned in 1ms from: select link from Hyperlinks

```
1    select Url,Word from Keywords
```

	Url	Word
5	two.html	Beijing
6	two.html	Paris
7	three.hmtl	Chicago
8	three.hmtl	Beijing
9	four.html	Chicago

13 rows returned in 1ms from: select Url,Word from Keywords

```
1    select distinct link from Hyperlinks
```

	link
1	two.html
2	three.html
3	four.html
4	five.html
5	one.html

5 rows returned in 1ms from: select distinct link from Hyperlinks

```
1    select Url from Keywords
2    where word='Paris'
```

	Url
1	one.html
2	two.html
3	four.hmtl

```
3 rows returned in 2ms from: select Url from Keywords
where word='Paris'
```

SQL 1 ✗

```
1    select Url,Freq from Keywords
2    where word='Paris'
3    order by Freq desc
```

	Url	Freq
1	one.html	5
2	four.hmtl	2
3	two.html	1

```
3 rows returned in 3ms from: select Url,Freq from Keywords
where word='Paris'
order by Freq desc
```

SQL 1 X

```sql
1    select Count(*) From Keywords
2    where Word='Paris'
```

	Count(*)
1	3

1 rows returned in 1ms from: select Count(*) From Keywords
where Word='Paris'

SQL 1 X

```sql
1    Select Sum(Freq) From Keywords
2    where Word='Paris'
```

	Sum(Freq)
1	8

1 rows returned in 0ms from: Select Sum(Freq) From Keywords
where Word='Paris'

SQL 1 ✕

```
1    select Count(*) from Hyperlinks
2    group by Url
```

	Count(*)
1	2
2	1
3	1
4	2
5	1

```
6 rows returned in 1ms from: select Count(*) from
Hyperlinks
group by Url
```

SQL 1 ✕

```
1    select Url,Count(*) from Hyperlinks
2    group by Url
```

	Url	Count(*)
1	five.hmtl	2
2	five.html	1
3	four.html	1
4	one.html	2
5	three.hmtl	1

```
6 rows returned in 1ms from: select Url,Count(*) from
Hyperlinks
group by Url
```

SQL 1 ✕

```
1    select * from Keywords,Hyperlinks
2    Where Keywords.Word='Bogota'
```

	Url	Word	Freq	Url	link
1	five.hmtl	Bogota	2	one.html	two.html
2	two.hmtl	Bogota	3	one.html	two.html
3	five.hmtl	Bogota	2	one.html	three.html
4	two.hmtl	Bogota	3	one.html	three.html
5	five.hmtl	Bogota	2	two.hmtl	four.html

```
16 rows returned in 1ms from: select * from
Keywords,Hyperlinks
Where Keywords.Word='Bogota'
```

```
1    select * from Hyperlinks,Keywords
2    where Keywords.Word='Bogota'
```

	Url	link	Url	Word	Freq
1	one.html	two.html	five.hmtl	Bogota	2
2	one.html	two.html	two.hmtl	Bogota	3
3	one.html	three.html	five.hmtl	Bogota	2
4	one.html	three.html	two.hmtl	Bogota	3
5	two.hmtl	four.html	five.hmtl	Bogota	2

```
16 rows returned in 2ms from: select * from
Hyperlinks,Keywords
where Keywords.Word='Bogota'
```

```
1   select * from Hyperlinks,Keywords
2   where Keywords.Word='Bogota'
```
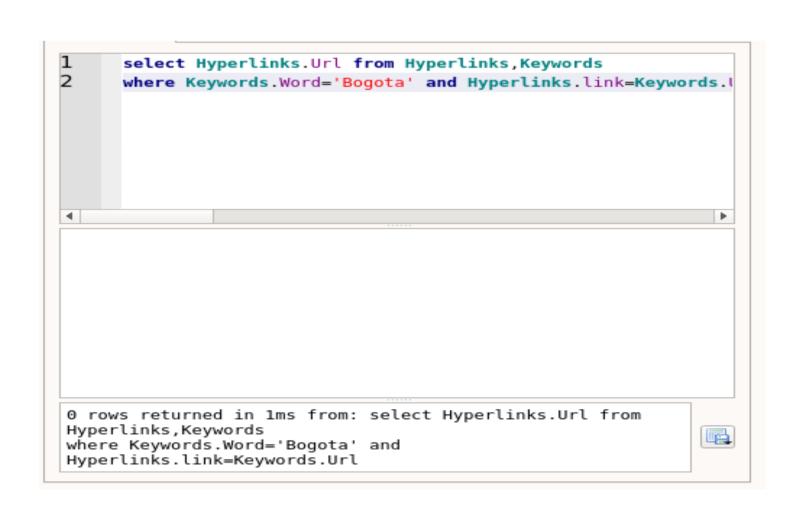
	Url	link	Url	Word	Freq
1	one.html	two.html	five.hmtl	Bogota	2
2	one.html	two.html	two.hmtl	Bogota	3
3	one.html	three.html	five.hmtl	Bogota	2
4	one.html	three.html	two.hmtl	Bogota	3
5	two.hmtl	four.html	five.hmtl	Bogota	2

```
16 rows returned in 2ms from: select * from
Hyperlinks,Keywords
where Keywords.Word='Bogota'
```

```
1   select * from Hyperlinks,Keywords
2   where Hyperlinks.Url=Keywords.Url
```

	Url	link	Url	Word	Freq
1	one.html	two.html	one.html	Beijing	3
2	one.html	two.html	one.html	Paris	5
3	one.html	three.html	one.html	Beijing	3
4	one.html	three.html	one.html	Paris	5
5	two.hmtl	four.html	two.hmtl	Bogota	3

```
12 rows returned in 1ms from: select * from
Hyperlinks,Keywords
where Hyperlinks.Url=Keywords.Url
```

```
1  select * from Hyperlinks,Keywords
2  where Keywords.Word='Bogota' AND  Hyperlinks.link=Keyword
```

0 rows returned in 2ms from: select * from
Hyperlinks,Keywords
where Keywords.Word='Bogota' AND
Hyperlinks.link=Keywords.Url

```
1  select Hyperlinks.Url from Hyperlinks,Keywords
2  where Keywords.Word='Bogota' and Hyperlinks.link=Keywords.U
```

0 rows returned in 1ms from: select Hyperlinks.Url from
Hyperlinks,Keywords
where Keywords.Word='Bogota' and
Hyperlinks.link=Keywords.Url

```
1   update Keywords set Freq=4
2   where Url='two.html' AND Word='Bogota'
```

Query executed successfully: update Keywords set Freq=4
where Url='two.html' AND Word='Bogota' (took 0ms, 0 rows
affected)

web.py > ...
```python
1    import sqlite3
2    def webData(db,url,links,freq):
3        con=sqlite3.connect(db)
4        cursorobj=con.cursor
5        for word in freq:
6            record=(url,word,freq[word])
7            cur.execute("INSERT INTO KEYWORDS VALUES(?,?,?)")
8        for link in links:
9            record=(ur,link)
10           cursorobj.execute("INSERT INTO Keywords VALUES (?,?)",record)
11       con.commit()
12       con.close
```

```python
import sqlite3
con=sqlite3.connect('Table.db')
cursorobj=con.cursor()
cursorobj.execute("SELECT * FROM Keywords")
cursorobj.fetchall()
for record in cursorobj:
    print(record)
```

```python
lines=['First Line\n','Second\n','\n','and Fourth.\n']
newlines=[]
for i in range(len(lines)):
    newlines.append(lines[i][:-1])
print(newlines)
```

```
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$ /usr/bin/python3 /home/waqar/Documents/compre.py
['First Line', 'Second', '', 'and Fourth.']
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$
```

```python
lines=['First Line\n','Second\n','\n','and Fourth.\n']
newlines=[line[:-1] for line in lines]
print(newlines)
```

```
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$ /usr/bin/python3 /home/waqar/Documents/compre.py
['First Line', 'Second', '', 'and Fourth.']
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$ /usr/bin/python3 /home/waqar/Documents/com.py
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$ /usr/bin/python3 /home/waqar/Documents/com.py
['First Line', 'Second', '', 'and Fourth.']
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$ []
```

com.py > ...

```python
s=[i for i in range(0,20,2)]
print(s)
```

```
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$ /usr/bin/python3 /home/waqar/Documents/com.py
[0, 2, 4, 6, 8, 10, 12, 14, 16, 18]
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$
```

```python
com.py > ...
1    x=[len(word) for word in ['Hawk','Hen','Hawk','Hyena']]
2    print(x)
```
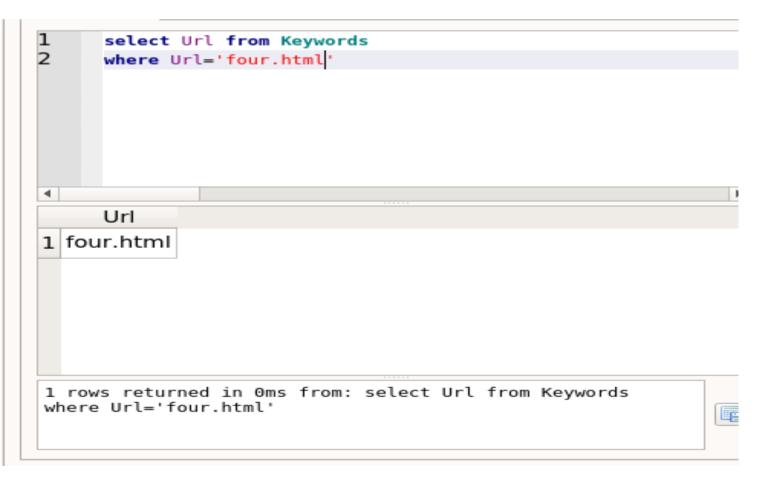
```
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$ /usr/bin/python3 /home/waqar/Documents/com.py
[4, 3, 4, 5]
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$
```

```python
com.py > ⊙ occurence
1    words=['one','three','one','three','three','five','one','five']
2    def occurence(words):
3        return[(word  words: list
4    print(occurence(words))
```

```
aqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$ /usr/bin/python3 /home/waqar/Documents/com.py
(['one', 'three', 'one', 'three', 'three', 'five', 'one', 'five'], 1)]
aqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$
```

```python
lines=['First Line\n','Second\n','\n','and Fourth.\n']
newlines=[line[:-1] for line in lines if line!='\n']
print(newlines)
```

```
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$ /usr/bin/python3 /home/waqar/Documents/com.py
['First Line', 'Second', 'and Fourth.']
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$
```

com.py > ...

```python
s=['hawk','hen','hawk','hyena']
x=[word.capitalize() for word in s]
print(x)
z=[(word,len(word)) for word in s]
print(z)
p=[[(c,word) for c in s] for word in s]
print(p)
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   2: Python   + ⊓ 🗑 ⌃

```
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$ /usr/bin/python3 /home/waqar/Documents/com.py
['Hawk', 'Hen', 'Hawk', 'Hyena']
[('hawk', 4), ('hen', 3), ('hawk', 4), ('hyena', 5)]
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$ /usr/bin/python3 /home/waqar/Documents/com.py
['Hawk', 'Hen', 'Hawk', 'Hyena']
[('hawk', 4), ('hen', 3), ('hawk', 4), ('hyena', 5)]
[[('hawk', 'hawk'), ('hen', 'hawk'), ('hawk', 'hawk'), ('hyena', 'hawk')], [('hawk', 'hen'), ('hen', 'hen'), ('hawk', 'he
n'), ('hyena', 'hen')], [('hawk', 'hawk'), ('hen', 'hawk'), ('hawk', 'hawk'), ('hyena', 'hawk')], [('hawk', 'hyena'), ('h
en', 'hyena'), ('hawk', 'hyena'), ('hyena', 'hyena')]]
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$
```

```python
words=['one','three','one','three','three','five','one','five']
def occurence(words):
    return[(words,1)]
print(occurence(words))
intermediate=[occurence(words) for word in words]
print(intermediate)
```

PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   2: Python   + ▢ 🗑 ∧

waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$ /usr/bin/python3 /home/waqar/Documents/com.py
[(['one', 'three', 'one', 'three', 'three', 'five', 'one', 'five'], 1)]
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$ /usr/bin/python3 /home/waqar/Documents/com.py
[(['one', 'three', 'one', 'three', 'three', 'five', 'one', 'five'], 1)]
[[(['one', 'three', 'one', 'three', 'three', 'five', 'one', 'five'], 1)], [(['one', 'three', 'one', 'three', 'three', 'fi
ve', 'one', 'five'], 1)], [(['one', 'three', 'one', 'three', 'three', 'five', 'one', 'five'], 1)], [(['one', 'three', 'on
e', 'three', 'three', 'five', 'one', 'five'], 1)], [(['one', 'three', 'one', 'three', 'three', 'five', 'one', 'five'], 1)
], [(['one', 'three', 'one', 'three', 'three', 'five', 'one', 'five'], 1)], [(['one', 'three', 'one', 'three', 'three', '
five', 'one', 'five'], 1)], [(['one', 'three', 'one', 'three', 'three', 'five', 'one', 'five'], 1)]]
waqar@waqar-HP-Compaq-6730b-GW687AV:~/Documents$

```sql
select Url from Keywords
where Url='four.html'
```

Url
1 four.html

1 rows returned in 0ms from: select Url from Keywords
where Url='four.html'

SQL 1 ✕

```
1    select Url from Keywords
2    where Url=(select Url from Keywords)
```

	Url
1	one.html
2	one.html

2 rows returned in 2ms from: select Url from Keywords
where Url=(select Url from Keywords)

SQL 1 ✕

```
1    SELECT Url,Word, COUNT(*)
2    FROM Keywords
3    GROUP BY Word
4    HAVING COUNT(*) >= 3
```

	Url	Word	COUNT(*)
1	three.hmtl	Beijing	3
2	four.html	Chicago	3
3	four.hmtl	Paris	3

3 rows returned in 1ms from: SELECT Url,Word, COUNT(*)
FROM Keywords
GROUP BY Word
HAVING COUNT(*) >= 3

SQL 1 ✗

```sql
1   SELECT Url,Word,Freq, COUNT(*)
2   FROM Keywords
3   GROUP BY Word
4   HAVING COUNT(*) >= 3 or COUNT(*)>=5
```

	Url	Word	Freq	COUNT(*)
1	three.hmtl	Beijing	6	3
2	four.html	Chicago	3	3
3	four.hmtl	Paris	2	3

```
3 rows returned in 2ms from: SELECT Url,Word,Freq, COUNT(*)
FROM Keywords
GROUP BY Word
HAVING COUNT(*) >= 3 or COUNT(*)>=5
```

SQL 1 ✗

```sql
1   SELECT Url
2   FROM Hyperlinks
3   GROUP BY Url
4   HAVING ( COUNT(Url) > 2 )
```

```
0 rows returned in 1ms from: SELECT Url
FROM Hyperlinks
GROUP BY Url
HAVING ( COUNT(Url) > 2 )
```

```
1    SELECT distinct Url
2    from Hyperlinks
3    where Url='two.html'
```

0 rows returned in 1ms from: SELECT distinct Url
from Hyperlinks
where Url='two.html'

```
1    ECT Word From Keywords
2    up by url
3    ing count(2)
```

	Word
1	Bogota
2	Naibori
3	Chicago
4	Chicago
5	Paris

8 rows returned in 1ms from: SELECT Word From Keywords
group by url
Having count(2)

```
1   SELECT Url From Keywords
2   WHERE URl=(select Url From Hyperlinks)
```

	Url
1	one.html
2	one.html

2 rows returned in 1ms from: SELECT Url From Keywords
WHERE URl=(select Url From Hyperlinks)

SQL 1 X

```
1   select * from Hyperlinks,Keywords
2   where Keywords.Word='Bogota' AND  Hyperlinks.link=Keywords
```

0 rows returned in 2ms from: select * from
Hyperlinks,Keywords
where Keywords.Word='Bogota' AND
Hyperlinks.link=Keywords.Url