QUESTIONS:-

Scientists	
SSN INTEGER (PK)	
Name TEXT	

AssignedTo	
Scientist INTEGER (PK) (FK)	
Project TEXT (PK) (FK)	

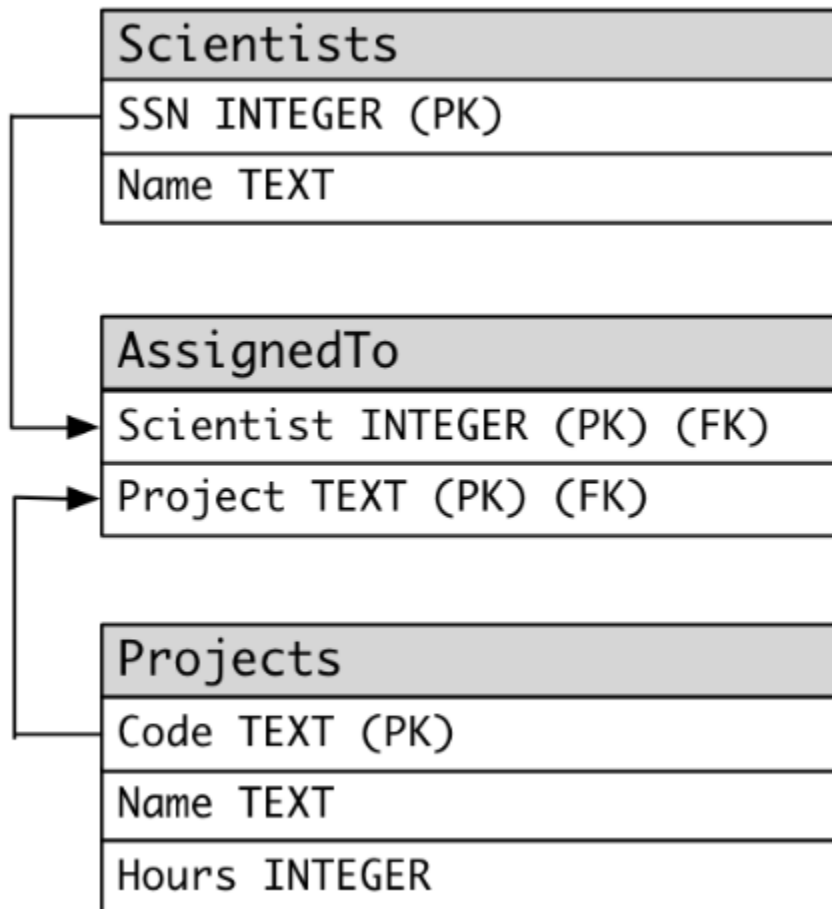| Projects	
Code TEXT (PK)	
Name TEXT	
Hours INTEGER	

CODE:-

```sql
create database alpha;
use alpha;
create table Scientists (
  SSN int,
  Name Char(30) not null,
  Primary Key (SSN)
);
```

```sql
 9 • ⊖  Create table Projects (
10           Code Char(4),
11           Name Char(50) not null,
12           Hours int,
13           Primary Key (Code)
14      );
15
16 • ⊖  create table AssignedTo (
17           Scientist int not null,
18           Project char(4) not null,
19           Primary Key (Scientist, Project),
20           Foreign Key (Scientist) references Scientists (SSN),
21           Foreign Key (Project) references Projects (Code)
22      );
23
24      INSERT INTO Scientists(SSN,Name)
25        VALUES(123234877,'Michael Rogers'),
26          (152934485,'Anand Manikutty'),
27          (222364883, 'Carol Smith'),
28          (326587417,'Joe Stevens'),

29          (332154719,'Mary-Anne Foster'),
30          (332569843,'George ODonnell'),
31          (546523478,'John Doe'),
32          (631231482,'David Smith'),
33          (654873219,'Zacary Efron'),
34          (745685214,'Eric Goldsmith'),
35          (845657245,'Elizabeth Doe'),
36          (845657246,'Kumar Swamy'),
37          (1646132,'AMAN'),
38          (1234646,'GERARD');
39
```

```sql
40  •    INSERT INTO Projects ( Code,Name,Hours)
41       VALUES ('AeH1','Winds: Studying Bernoullis Principle', 156),
42              ('AeH2','Aerodynamics and Bridge Design',189),
43              ('AeH3','Aerodynamics and Gas Mileage', 256),
44              ('AeH4','Aerodynamics and Ice Hockey', 789),
45              ('AeH5','NUCLEAR BOMB', 98),
46              ('AeH6','Aerodynamics of Air Hockey',89),
47              ('Ast1','A Matter of Time',112),
48              ('Ast2','A Puzzling Parallax', 299),
49              ('Ast3','Build Your Own Telescope', 6546),
50              ('Bte1','Juicy: Extracting Apple Juice with Pectinase', 321),
51              ('Bte2','A Magnetic Primer Designer', 9684),
52              ('Bte3','Bacterial Transformation Efficiency', 321),
53              ('Che1','Boston', 545),
54              ('Che2','A Soluble Separation Solution', 778);
55
56  •    INSERT INTO AssignedTo ( Scientist, Project)
57        VALUES (123234877,'AeH1'),
58         (152934485,'AeH3'),

60         (326587417,'Ast3'),
61         (332154719,'Bte1'),
62         (546523478,'Che1'),
63         (631231482,'Ast3'),
64         (654873219,'Che1'),
65         (745685214,'AeH3'),
66         (845657245,'Ast1'),
67         (845657246,'Ast2'),
68         (332569843,'AeH4');
```

1)List all the scientists; names, their projects; names, and the hours worked by that scientist on each project, in alphabetical order of project name, then scientist name.

```
69 ●        SELECT    S.Name, P.Name, P.Hours
70      FROM    Scientists S
71              INNER JOIN AssignedTo A ON S.SSN=A.Scientist
72              INNER JOIN Projects P ON A.Project=P.Code
73      ORDER BY P.Name ASC. S.Name ASC:
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content

Name	Name	Hours
Elizabeth Doe	A Matter of Time	112
Kumar Swamy	A Puzzling Parallax	299
Anand Manikutty	Aerodynamics and Gas Mileage	256
Eric Goldsmith	Aerodynamics and Gas Mileage	256
George ODonnell	Aerodynamics and Ice Hockey	789
John Doe	Boston	545
Zacary Efron	Boston	545
Carol Smith	Build Your Own Telescope	6546
David Smith	Build Your Own Telescope	6546
Joe Stevens	Build Your Own Telescope	6546
Mary-Anne Foster	Juicy: Extracting Apple Juice ...	321
Michael Rogers	Winds: Studying Bernoullis Pri...	156

2)Select the project names which are not assigned yet.

```
74 ●    SELECT Name
75       FROM Projects
76       WHERE Code NOT In
77    ⊖ (
78       SELECT Project
79             FROM AssignedTo
80       );
```

Result Grid | ⊞ | ↔ Filter Rows:

Name
▶ Aerodynamics and Bridge Design
NUCLEAR BOMB
Aerodynamics of Air Hockey
A Magnetic Primer Designer
Bacterial Transformation Efficiency
A Soluble Separation Solution

3)Add an entry to the database of scientist "Henry" to the Scientists table and Projects table assign him a project of any Biomedical project and timing of your choice.

```
81 •        INSERT INTO Scientists(SSN,Name)
82             VALUES(1321154,'Henry');
83 •           select * from Scientists;
84             INSERT INTO AssignedTo ( Scientist
```

SSN	Name
▶ 1234646	GERARD
1321154	Henry
1646132	AMAN
123234877	Michael Rogers
152934485	Anand Manikutty
222364883	Carol Smith
326587417	Joe Stevens
332154719	Mary-Anne Foster
332569843	George ODonnell
546523478	John Doe
631231482	David Smith
654873219	Zacary Efron
745685214	Eric Goldsmith
845657245	Elizabeth Doe
845657246	Kumar Swamy
NULL	NULL

5)Please provide the details of Scientists who have taken less than 30 hours for their project

```
84 ●        INSERT INTO AssignedTo ( Scientist, Project)
85          VALUES (1321154,'Bte3');
86 ●        select * from AssignedTo;
```

Result Grid | Filter Rows: | Edit:

Scientist	Project
▶ 123234877	AeH1
152934485	AeH3
745685214	AeH3
332569843	AeH4
845657245	Ast1
845657246	Ast2
222364883	Ast3
326587417	Ast3
631231482	Ast3
332154719	Bte1
1321154	Bte3
546523478	Che1
654873219	Che1
NULL	NULL

4)Update the hours taken for Project "Boston" to 50 hours.

```
88 ●    update projects
89      set hours=50
90      where name='Boston';
91 ●    select *from projects where name="Boston";
```

Result Grid | Filter Rows: | Edit:

Code	Name	Hours
▸ Che1	Boston	50
NULL	NULL	NULL

50

6)Please provide the details of the Scientist names who have not been assigned any project yet.

```
92 ●     SELECT    S.Name,S.SSN
93        FROM      Scientists S
94                  INNER JOIN AssignedTo A ON S.SSN=A.Scientist
95                  INNER JOIN Projects P ON A.Project=P.Code
96                  where p.hours<300;
```

| Result Grid | | Filter Rows: | | Export: | Wrap Cell Content: |

Name	SSN
▶ Michael Rogers	123234877
Anand Manikutty	152934485
Eric Goldsmith	745685214
Elizabeth Doe	845657245
Kumar Swamy	845657246
John Doe	546523478
Zacary Efron	654873219

7)Delete the record Project "Nuclear_Bomb" from Projects table.

```
98  •              delete FROM PROJECTS WHERE NAME='NUCLEAR BOMB';
99  •              SELECT *FROM PROJECTS;
```

Result Grid | Filter Rows: | Edit: | Export/Import:

Code	Name	Hours
AeH1	Winds: Studying Bernoullis Principle	156
AeH2	Aerodynamics and Bridge Design	189
AeH3	Aerodynamics and Gas Mileage	256
AeH4	Aerodynamics and Ice Hockey	789
AeH6	Aerodynamics of Air Hockey	89
Ast1	A Matter of Time	112
Ast2	A Puzzling Parallax	299
Ast3	Build Your Own Telescope	6546
Bte1	Juicy: Extracting Apple Juice with Pectinase	321
Bte2	A Magnetic Primer Designer	9684
Bte3	Bacterial Transformation Efficiency	321
Che1	Boston	50
Che2	A Soluble Separation Solution	778
NULL	NULL	NULL

8)Decrease the time taken for each project by 2 hours.

```
100 ●          update projects
101            set hours=hours-2;
102 ●          select *from projects;
```

Code	Name	Hours
AeH1	Winds: Studying Bernoullis Principle	154
AeH2	Aerodynamics and Bridge Design	187
AeH3	Aerodynamics and Gas Mileage	254
AeH4	Aerodynamics and Ice Hockey	787
AeH6	Aerodynamics of Air Hockey	87
Ast1	A Matter of Time	110
Ast2	A Puzzling Parallax	297
Ast3	Build Your Own Telescope	6544
Bte1	Juicy: Extracting Apple Juice with Pectinase	319
Bte2	A Magnetic Primer Designer	9682
Bte3	Bacterial Transformation Efficiency	319
Che1	Boston	48
Che2	A Soluble Separation Solution	776
NULL	NULL	NULL

9)Find the hours taken for all projects which were assigned to scientist "Gerard".

```
103 •    SELECT SUM(Hours) FROM Scientists INNER JOIN AssignedTo
104      ON Scientists.SSN = AssignedTo.scientist AND scientists.Name = 'GERARD'
105      INNER JOIN Projects ON AssignedTo.Project = Projects.Code GROUP BY scientists.Name;
106 •     select * from AssignedTo;
```

Scientist	Project
123234877	AeH1
152934485	AeH3
745685214	AeH3
332569843	AeH4
845657245	Ast1
845657246	Ast2
222364883	Ast3
326587417	Ast3
631231482	Ast3
332154719	Bte1
1321154	Bte3
546523478	Che1
654873219	Che1
NULL	NULL

10)Provide the details of the scientist who have taken maximum Projects.

```sql
07  SELECT * FROM Scientists INNER JOIN AssignedTo
08      ON Scientists.SSN = AssignedTo.scientist
09      INNER JOIN Projects ON AssignedTo.Project = Projects.Code WHERE Scientists.SSN =
10      (SELECT Scientist FROM AssignedTo GROUP BY Scientist ORDER BY COUNT(Scientist) DESC LIMIT 1);
11  SELECT * FROM Scientists;
```

SSN	Name
1234646	GERARD
1321154	Henry
1646132	AMAN
123234877	Michael Rogers
152934485	Anand Manikutty
222364883	Carol Smith
326587417	Joe Stevens
332154719	Mary-Anne Foster
332569843	George ODonnell
546523478	John Doe
631231482	David Smith
654873219	Zacary Efron
745685214	Eric Goldsmith
845657245	Elizabeth Doe
845657246	Kumar Swamy
NULL	NULL