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Exercise 1: The data on visits to doctor's office are presented below. Use proc sql to complete the assignment that follows.

```
data docvisits;
input patientID$ weekday$ score;
cards;
101 Monday 10
101 Friday 15
112 Tuesday 11
123 Monday 9
123 Tuesday 10
123 Friday 9
104 Friday 23
104 Saturday 20
157 Tuesday 10
157 Thursday 18
157 Saturday 21
;
```

Part a:

```
/* (a) Compute the number of patients. */
proc sql;
select count (distinct patientID)
 as count
 from docvisits;
quit;
```

Output:

The SAS System

count
5

The SAS System

count
5

Part b:

```
/* (b) List patient IDs and the total number of visits for each patient. */
proc sql;
select patientID, count (distinct weekday)
 as count
 from docvisits
 group by patientID;
quit;
```

Output:

The SAS System

patientID	count
101	2
104	2
112	1
123	3
157	3

The SAS System

patientID	count
101	2
104	2
112	1
123	3
157	3

Part c:

```
/* (c) List the days of the week that visits were on and the total number of patients who
visited each day. */
proc sql;
select weekday, count (distinct patientID)
 as count
 from docvisits
 group by weekday;
quit;
```

Output:

The SAS System

weekday	count
Friday	3
Monday	2
Saturday	2
Thursday	1
Tuesday	3

The SAS System

weekday	count
Friday	3
Monday	2
Saturday	2
Thursday	1
Tuesday	3

Exercise 2:

```
data record;
input ID$ Gender$ Age Score;
cards;
259632 F 56 58
259632 F 56 41
259632 F 56 39
577763 F 67 40
577763 F 67 50
577763 F 67 39
577763 F 67 33
279645 M 52 24
279645 M 52 65
279645 M 52 66
279645 M 52 74
279645 M 52 85
694797 F 48 37
694797 F 48 85
684516 M 57 81
760076 M 62 45
760076 M 62 35
760076 M 62 38
760076 M 62 65
745795 F 74 85
745795 F 74 82
745795 F 74 77
745795 F 74 81
506301 M 78 70
506301 M 78 70
506301 M 78 71
506301 M 78 67
406126 M 62 60
406126 M 62 50
477908 M 70 50
477908 M 70 63
```

```
477908 M 70 51
;
title 'Exercise 2';
```

Part a:

```
/* (a) How many patients are in this data set? */
proc sql;
 select count (distinct ID) as PatientCount
  from record;
quit;
```

Output:

Exercise 2

PatientCount
10

The number of patients in the data set are 10.

Part b:

```
/* (b) How many patients by gender?*/
proc sql;
 select gender, count (distinct ID) as count
  from record
   group by gender;
quit;
```

Output:

Exercise 2

Gender	count
F	4
M	6

There are 4 female patients, and 6 male patients.

Part c:

```
/* (c) How many patients older than 65? */
proc sql;
 select count (distinct ID) as SeniorCount
  from record
   where Age>65;
quit;
```

Output:

Exercise 2

SeniorCount
4

There are 4 patients over the age of 65.

Part d:

```
/* (d) How many women older than 65?*/
proc sql;
 select count (distinct ID) as F_SeniorCount
  from record
   where Age>65 and gender='F';
quit;
```

Output:

Exercise 2

F_SeniorCount
2

Answer: There

Part e:

```
/* (e) How many doctor visits for each patient? */
proc sql;
select ID, count(ID) as VisitCount
 from record
  group by ID;
quit;
```

Output:

Exercise 2

ID	VisitCount
259632	3
279645	5
406126	2
477908	3
506301	4
577763	4
684516	1
694797	2
745795	4
760076	4

Part f:

```
/* (f) How many doctor visits for each patient with medical test score above 50? */
proc sql;
select ID, count(ID) as ScoreOver50Count
 from record
  where Score > 50
  group by ID;
quit;
```

Output:

Exercise 2

ID	ScoreOver50Count
259632	1
279645	4
406126	1
477908	2
506301	4
684516	1
694797	1
745795	4
760076	1

Part g:

```
/* (g) What are minimum, mean, and maximum scores for each patient? */
 proc sql;
 select ID, min(Score) as MinScore
   from record
   group by ID;
 quit;

proc sql;
 select ID, mean(Score) as AvgScore
   from record
   group by ID;
 quit;

 proc sql;
 select ID, max(Score) as MaxScore
   from record
   group by ID;
 quit;
```

Output:

Exercise 2

ID	MinScore
259632	39
279645	24
406126	50
477908	50
506301	67
577763	33
684516	81
694797	37
745795	77
760076	35

Exercise 2

ID	AvgScore
259632	46
279645	62.8
406126	55
477908	54.66667
506301	69.5
577763	40.5
684516	81
694797	61
745795	81.25
760076	45.75

Exercise 2

ID	MaxScore
259632	58
279645	85
406126	60
477908	63
506301	71
577763	50
684516	81
694797	85
745795	85
760076	65

Part h:

```
/* (h) List patients who have mean scores for all their visits larger than 45?*/
proc sql;
 select ID, mean(score) as AvgScoreOver45
   from record
   group by ID
        having mean(score)>70;
quit;
```

Output:

Exercise 2

ID	AvgScoreOver45
684516	81
745795	81.25