Name: Urooba Gohar
Roll No: 22P-9216
Section: BSCS-6A

Database Systems Lab 2

Task 1:

Display any two columns from employees table.

Ans:

To select any two columns from the employees table, we use the "select" keyword. Then we choose any two columns of our choice, here I've chosen "employee_id" and "first_name".

Following is the query:

```
--22P-9216
select employee_id, first_name from Employees
```

Following is the result:

SQL | Fetched 50 rows in 0.0

	EMPLOYEE_ID	FIRST_NAME
1	174	Ellen
2	166	Sundar
3	130	Mozhe
4	105	David
5	204	Hermann
6	116	Shelli
7	167	Amit
8	172	Elizabeth
9	192	Sarah
10	151	David
11	129	Laura
12	169	Harrison

Task 2:

Display Hire_date from employees table, name it as Joining Date.

Ans:

To display hire_date as “joining date” from the Employees table, we use “select”. Then we replace “hire_date” with “joining date” and display it.

Following is the query:

```
--22P-9216
select hire_date as "joining date" from Employees
```

Following is the result:

	joining date
1	17-JUN-03
2	21-SEP-05
3	13-JAN-01
4	03-JAN-06
5	21-MAY-07
6	25-JUN-05
7	05-FEB-06
8	07-FEB-07
9	17-AUG-02
10	16-AUG-02

Task 3:

Display the first_name, last_name of Employees together in one column named “FULL NAME”.

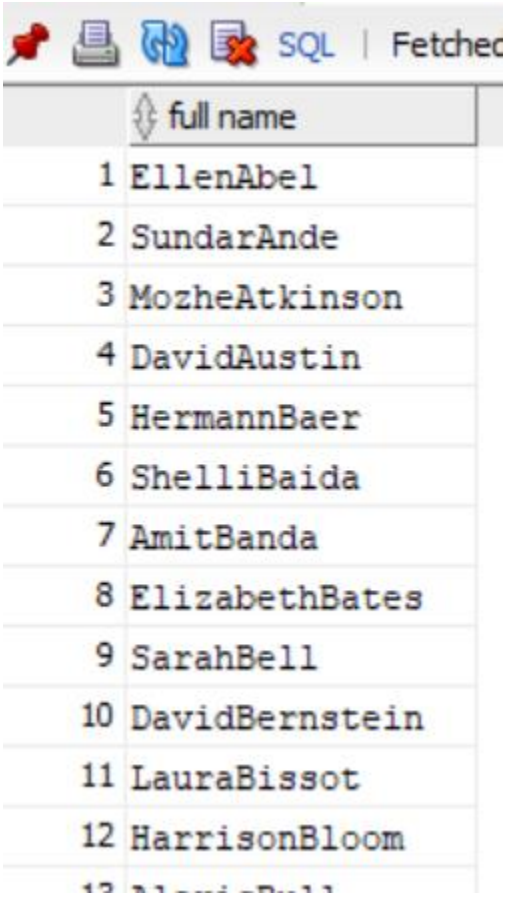
Ans:

To display the first_name and last_name of Employees together in one column named “full name”, we use the select keyword to choose first and last name. Then we use the concatenation operator “||” to write the names together under one name, i-e: “full name”.

Following is the query:

```
heet | Query Builder
--22P-9216
select FIRST_NAME || LAST_NAME as "full name" from Employees
```

Following is the result:



	full name
1	EllenAbel
2	SundarAnde
3	MozheAtkinson
4	DavidAustin
5	HermannBaer
6	ShelliBaida
7	AmitBanda
8	ElizabethBates
9	SarahBell
10	DavidBernstein
11	LauraBissot
12	HarrisonBloom

Task 4:

List all Employees having annual salary greater than 20, 000 and lesser than 30,000.

Ans:

To list the employees will salary greater than 20,000 and lesser than 30,000, we use the select keyword and use the comparison operators, i-e: “>” and “<”.

Following is the query:

```
--22P-9216
select * from Employees where salary > '20000' AND salary < '30000'
```

Following is the result:

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
1	100	Steven	King	SKING	515.123.4567	17-JUN-03	AD_PRES	24000	(null)	(null)	90

Task 5:

List employee_id and first_name of employees from department#60 to department #100.

Ans:

To list the employee_id and first_name of the employees from dept 60 and 100, we use the “select” keyword. To filter the rows on the basis of range of elements, we use the “between” keyword.

Following is the query:

```
--22P-9216
select employee_id, first_name from Employees where department_id BETWEEN 60 AND 100
```

Following is the result:

	EMPLOYEE_ID	FIRST_NAME
1	100	Steven
2	101	Neena
3	102	Lex
4	103	Alexander
5	104	Bruce
6	105	David
7	106	Valli
8	107	Diana
9	108	Nancy
10	109	Daniel
11	110	John
12	111	Ismael
13	112	Jose Manuel
14	113	Luis
15	145	John

Task 6:

List all the employees with no commission.

Ans:

To list all the employees with no commission, we us the “select” keyword. Then we use the “NULL” search condition to filter the fields with NULL values.

Following is the query:

```
--22P-9216
select * from Employees where COMMISSION_PCT is NULL
```

Following is the result:

Query Result

SQL | Fetched 50 rows in 0.016 seconds

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
1	100	Steven	King	SKING	515.123.4567	17-JUN-03	AD_PRES	24000	(null)	(null)	90
2	101	Neena	Kochhar	NKOCHHAR	515.123.4568	21-SEP-05	AD_VP	17000	(null)	100	90
3	102	Lex	De Haan	LDEHAAN	515.123.4569	13-JAN-01	AD_VP	17000	(null)	100	90
4	103	Alexander	Hunold	AHUNOLD	590.423.4567	03-JAN-06	IT_PROG	9000	(null)	102	60
5	104	Bruce	Ernst	BERNST	590.423.4568	21-MAY-07	IT_PROG	6000	(null)	103	60
6	105	David	Austin	DAUSTIN	590.423.4569	25-JUN-05	IT_PROG	4800	(null)	103	60
7	106	Valli	Pataballa	VPATABAL	590.423.4560	05-FEB-06	IT_PROG	4800	(null)	103	60
8	107	Diana	Lorentz	DLORENTZ	590.423.5567	07-FEB-07	IT_PROG	4200	(null)	103	60
9	108	Nancy	Greenberg	NGREENBE	515.124.4569	17-AUG-02	FI_MGR	12008	(null)	101	100
10	109	Daniel	Faviet	DFAVIET	515.124.4169	16-AUG-02	FI_ACCOUNT	9000	(null)	108	100
11	110	John	Chen	JCHEN	515.124.4269	28-SEP-05	FI_ACCOUNT	8200	(null)	108	100
12	111	Ismael	Sciarra	ISCIARRA	515.124.4369	30-SEP-05	FI_ACCOUNT	7700	(null)	108	100
13	112	Jose Manuel	Urman	JMURMAN	515.124.4469	07-MAR-06	FI_ACCOUNT	7800	(null)	108	100
14	113	Luis	Popp	LPOPP	515.124.4567	07-DEC-07	FI_ACCOUNT	6900	(null)	108	100
15	114	Den	Raphaely	DRAPHEAL	515.127.4561	07-DEC-02	PU_MAN	11000	(null)	100	30

Task 7:

List all employees in order of their decreasing salaries.

Ans:

To list all the employees in order of their decreasing salaries, we use the “select” keyword. Then we use the “order by” clause to arrange the result in the descending order for which we use the “desc” keyword.

Following is the query:

```
--22P-9216
select * from Employees ORDER BY salary desc;
```

Following is the result:

SQL | Fetched 50 rows in 0.016 seconds

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
1	100	Steven	King	SKING	515.123.4567	17-JUN-03	AD_PRES	24000	(null)	(null)	90
2	101	Neena	Kochhar	NKOCHHAR	515.123.4568	21-SEP-05	AD_VP	17000	(null)	100	90
3	102	Lex	De Haan	LDEHAAN	515.123.4569	13-JAN-01	AD_VP	17000	(null)	100	90
4	145	John	Russell	JRUSSEL	011.44.1344.429268	01-OCT-04	SA_MAN	14000	0.4	100	80
5	146	Karen	Partners	KPARTNER	011.44.1344.467268	05-JAN-05	SA_MAN	13500	0.3	100	80
6	201	Michael	Hartstein	MHARTSTE	515.123.5555	17-FEB-04	MK_MAN	13000	(null)	100	20
7	108	Nancy	Greenberg	NGREENBE	515.124.4569	17-AUG-02	FI_MGR	12008	(null)	101	100
8	205	Shelley	Higgins	SHIGGINS	515.123.8080	07-JUN-02	AC_MGR	12008	(null)	101	110
9	147	Alberto	Errazuriz	AERRAZUR	011.44.1344.429278	10-MAR-05	SA_MAN	12000	0.3	100	80
10	168	Lisa	Ozer	LOZER	011.44.1343.929268	11-MAR-05	SA_REP	11500	0.25	148	80
11	114	Den	Raphaely	DRAPHEAL	515.127.4561	07-DEC-02	PU_MAN	11000	(null)	100	30
12	148	Gerald	Cambrault	GCAMBRAU	011.44.1344.619268	15-OCT-07	SA_MAN	11000	0.3	100	80
13	174	Ellen	Abel	EABEL	011.44.1644.429267	11-MAY-04	SA_REP	11000	0.3	149	80

Task 8:

Print an employee name (first letter capital) and job_id(lower Case).

Ans:

To print the employee name where it has first letter capital and job_id where it has all letters in lower case, we use the “select” keyword for listing. Then we use “initcap” keyword to convert the first letter of a word to capital. We use “lower” keyword to convert all letters of a word to small.

Following is the query:

```
--22P-9216
SELECT INITCAP('Steven' || ' ' || 'King') AS employee_name, LOWER('AD_PRES') AS job_id FROM employees
```

Following is the result:

	EMPLOYEE_NAME	JOB_ID
1	Steven King	ad_pres
2	Steven King	ad_pres
3	Steven King	ad_pres
4	Steven King	ad_pres
5	Steven King	ad_pres
6	Steven King	ad_pres
7	Steven King	ad_pres
8	Steven King	ad_pres
9	Steven King	ad_pres
10	Steven King	ad_pres

Task 9:

For all employees employed for more than 100 months, display the employee number, hire date, number of months employed, first Friday after hire date and last day of the month hired.

Ans:

For all employees employed for more than 100 months, we have used the “select” keyword to display the employee_id, hire_date, number of months employed, first Friday after hire date, and last day of month hired. Then we’ve used the “MONTHS_BETWEEN()” function to calculate the number of months an employee has been employed since their hire date until the current date and we’ve displayed it as “Number of Months Employed”. Here “TRUNC()” is used to convert float to integer. After that, we’ve used the “NEXT_DAY()” function to find the first Friday that occurs after the hire date and we’ve displayed it as “First Friday after hire date”. We’ve used “LAST_DAY()” function to find the last day of the month hired and we’ve displayed it as “Last Day of the month hired”.

Following is the query:

```
--22P-9216
select employee_id, hire_date, TRUNC(MONTHS_BETWEEN(SYSDATE, hire_date)) as "Number Of Months Employeed",
NEXT_DAY(hire_date, 'FRIDAY') as "First Friday After Hire Date",
LAST_DAY(hire_date) as "Last Day Of The Month Hired"
from employees
where MONTHS_BETWEEN(SYSDATE, hire_date) > 100;
```

Following is the result:

Fetched 50 rows in 0.012 seconds

	EMPLOYEE_ID	HIRE_DATE	Number Of Months Employeed	First Friday After Hire Date	Last Day Of The Month Hired
1	100	17-JUN-03	259	20-JUN-03	30-JUN-03
2	101	21-SEP-05	232	23-SEP-05	30-SEP-05
3	102	13-JAN-01	288	19-JAN-01	31-JAN-01
4	103	03-JAN-06	228	06-JAN-06	31-JAN-06
5	104	21-MAY-07	212	25-MAY-07	31-MAY-07
6	105	25-JUN-05	235	01-JUL-05	30-JUN-05
7	106	05-FEB-06	227	10-FEB-06	28-FEB-06
8	107	07-FEB-07	215	09-FEB-07	28-FEB-07
9	108	17-AUG-02	269	23-AUG-02	31-AUG-02
10	109	16-AUG-02	269	23-AUG-02	31-AUG-02
11	110	28-SEP-05	232	30-SEP-05	30-SEP-05
12	111	30-SEP-05	232	07-OCT-05	30-SEP-05
13	112	07-MAR-06	226	10-MAR-06	31-MAR-06
14	113	07-DEC-07	205	14-DEC-07	31-DEC-07
15	114	07-DEC-02	265	13-DEC-02	31-DEC-02
16	115	18-MAY-03	260	23-MAY-03	31-MAY-03
17	116	24-DEC-05	229	30-DEC-05	31-DEC-05
18	117	24-JUL-05	234	29-JUL-05	31-JUL-05
19	118	15-NOV-06	218	17-NOV-06	30-NOV-06
20	119	10-AUG-07	209	17-AUG-07	31-AUG-07
21	120	18-JUL-04	246	23-JUL-04	31-JUL-04

Task 10:

Comparing the hire dates for all employees who started in 2003, display the employee number, hire date, and month started using the conversion and date functions.

Ans:

To compare the hire dates for all employees who started in 2003, we use “EXTRACT()” function which filters employees who were hired in the year 2003. Also we have used “TO_CHAR()” function to convert the hire date into a month name and then we’ve displayed the employee number, hire date, and month started.

Following is the query:

```
--22P-9216
SELECT employee_id, hire_date, TO_CHAR(hire_date, 'Month') AS "Month Started" from employees where EXTRACT(YEAR FROM hire_date) = 2003;
```

Following is the result:

	EMPLOYEE_ID	HIRE_DATE	Month Started
1	100	17-JUN-03	June
2	115	18-MAY-03	May
3	122	01-MAY-03	May
4	137	14-JUL-03	July
5	141	17-OCT-03	October
6	200	17-SEP-03	September

Task 11:

Find the next ‘Monday’ considering today’s date as date.

Ans:

To find the next Monday, we use the “NEXT_DAY()” function and display it as “Next Monday”.

Following is the query:

```
--22P-9216
select NEXT_DAY(SYSDATE, 'MONDAY') as "Next Monday" from Employees
```

Following is the result:

	Next Monday
1	03-FEB-25
2	03-FEB-25
3	03-FEB-25
4	03-FEB-25
5	03-FEB-25
6	03-FEB-25
7	03-FEB-25
8	03-FEB-25
9	03-FEB-25
10	03-FEB-25
11	03-FEB-25
12	03-FEB-25

Task 12:

List all Employees who have an ‘A’ in their last names.

Ans:

To list all employees having “a” in their last names, we use the pattern match search condition, i-e: like.

Following is the query:

```
--22P-9216
select * from Employees where last_name like '%A%'
```

Following is the result:

SQL | All Rows Fetched: 4 in 0.003 seconds

	EMPLOYEE_ID	FIRST_NAME	LAST_NAME	EMAIL	PHONE_NUMBER	HIRE_DATE	JOB_ID	SALARY	COMMISSION_PCT	MANAGER_ID	DEPARTMENT_ID
1	105	David	Austin	DAUSTIN	590.423.4569	25-JUN-05	IT_PROG	4800	(null)	103	60
2	130	Mozhe	Atkinson	MATKINSO	650.124.6234	30-OCT-05	ST_CLERK	2800	(null)	121	50
3	166	Sundar	Ande	SANDE	011.44.1346.629268	24-MAR-08	SA_REP	6400	0.1	147	80
4	174	Ellen	Abel	EABEL	011.44.1644.429267	11-MAY-04	SA_REP	11000	0.3	149	80

Task 13:

Show all employees’ last three letters of first name.

Ans:

To show all employees’ last three letters of first name, we use the “SUBSTR()” function which is used to extract a substring from a string. “-3” is used to extract the last 3 characters only.

Following is the query:

```
--22P-9216
select first_name, SUBSTR(first_name,-3) from Employees
```

Following is the result:

	FIRST_NAME	SUBSTR(FIRST_NAME,-3)
1	Ellen	len
2	Sundar	dar
3	Mozhe	zhe
4	David	vid
5	Hermann	ann
6	Shelli	lli
7	Amit	mit
8	Elizabeth	eth
9	Sarah	rah
10	David	vid
11	Laura	ura
12	Harrison	son
13	Alexis	xis
14	Anthony	ony
15	Gerald	ald
16	Nanette	tte
17	John	ohn
18	Kelly	lly
19	Karen	ren
20	Curtis	tis
21	Lex	Lex
22	Julia	lia
23	Jennifer	fer
24	Louise	ise
25	Bruce	uce