

Task 3 done by Yergesh Bakytzhan

1. Соедините таблицы стран (countries) и локаций (locations) с условием равенства по полям идентификатору стран (country_id).

SELECT * FROM countries INNER JOIN locations ON countries.country_id = locations.country_id

SQL Worksheet

```
1 SELECT * FROM countries INNER JOIN locations ON countries.country_id = locations.country_id
```

COUNTRY_ID	COUNTRY_NAME	REGION_ID	LOCATION_ID	STREET_ADDRESS	POSTAL_CODE	CITY	STATE_PROVINCE	COUNTRY_ID
IT	Italy	1	1000	1297 Via Cola di Rie	00989	Roma	-	IT
IT	Italy	1	1100	93891 Calle della Testa	10934	Venice	-	IT
JP	Japan	3	1200	2017 Shinjuku-ku	1689	Tokyo	Tokyo Prefecture	JP
JP	Japan	3	1300	9450 Kamiya-cho	6823	Hiroshima	-	JP
US	United States of America	2	1400	2014 Jaberwocky Rd	26192	Southlake	Texas	US
US	United States of America	2	1500	2011 Interiors Blvd	99236	South San Francisco	California	US
US	United States of America	2	1600	2007 Zagora St	50098	South Brunswick	New Jersey	US
US	United States of America	2	1700	2004 Charade Rd	98199	Seattle	Washington	US
CA	Canada	2	1800	147 Spadina Ave	M5V 2L7	Toronto	Ontario	CA

2. Соедините таблицы типов работ (jobs) и истории работ (job_history) с условием равенства по полям вида работ (job_id).

SELECT * FROM jobs INNER JOIN job_history ON jobs.job_id = job_history.job_id

SQL Worksheet

1	SELECT * FROM jobs INNER JOIN job_history ON jobs.job_id = job_history.job_id
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JOB_ID	JOB_TITLE	MIN_SALARY	MAX_SALARY	EMPLOYEE_ID	START_DATE	END_DATE	JOB_ID	DEPARTMENT_ID
AD_ASST	Administration Assistant	3000	6000	200	17-SEP-95	17-JUN-01	AD_ASST	90
AC_MGR	Accounting Manager	8200	16000	101	28-OCT-01	15-MAR-05	AC_MGR	110
AC_ACCOUNT	Public Accountant	4200	9000	101	21-SEP-97	27-OCT-01	AC_ACCOUNT	110
AC_ACCOUNT	Public Accountant	4200	9000	200	01-JUL-02	31-DEC-06	AC_ACCOUNT	90
SA_MAN	Sales Manager	10000	20000	176	01-JAN-07	31-DEC-07	SA_MAN	80
SA_REP	Sales Representative	6000	12000	176	24-MAR-06	31-DEC-06	SA_REP	80
ST_CLERK	Stock Clerk	2000	5000	114	24-MAR-06	31-DEC-07	ST_CLERK	50
ST_CLERK	Stock Clerk	2000	5000	122	01-JAN-07	31-DEC-07	ST_CLERK	50
IT_PROG	Programmer	4000	10000	102	13-JAN-01	24-JUL-06	IT_PROG	60
MK_REP	Marketing Representative	4000	9000	201	17-FEB-04	19-DEC-07	MK_REP	20

3. Соедините таблицы отделов (departments) и локаций (locations) с условием равенства по полям идентификатора локаций (location_id).

SELECT * FROM departments INNER JOIN locations ON departments.location_id = locations.location_id

SQL Worksheet

1	SELECT * FROM departments INNER JOIN locations ON departments.location_id = locations.location_id
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DEPARTMENT_ID	DEPARTMENT_NAME	MANAGER_ID	LOCATION_ID	LOCATION_ID	STREET_ADDRESS	POSTAL_CODE	CITY	STATE_PROVINCE	COUNTRY_ID
10	Administration	200	1700	1700	2004 Charade Rd	98199	Seattle	washington	US
20	Marketing	201	1800	1800	147 Spadina Ave	M5V 2L7	Toronto	Ontario	CA
30	Purchasing	114	1700	1700	2004 Charade Rd	98199	Seattle	washington	US
40	Human Resources	203	2400	2400	8204 Arthur St	-	London	-	UK
50	Shipping	121	1500	1500	2011 Interiors Blvd	99236	South San Francisco	California	US
60	IT	103	1400	1400	2014 Jabberwocky Rd	26192	Southlake	Texas	US
70	Public Relations	204	2700	2700	Schwanthalerstr. 7031	80925	Munich	Bavaria	DE
80	Sales	145	2500	2500	Hagdsalen Centre, The Oxford Science Park	OX9 92B	Oxford	Oxford	UK
90	Executive	100	1700	1700	2004 Charade Rd	98199	Seattle	washington	US
100	Finance	100	1700	1700	2004 Charade Rd	98199	Seattle	washington	US

4. Соедините таблицы отделов (departments) и истории работ (job_history) с условием равенства по полям идентификатора отдела (department_id).

SELECT * FROM departments INNER JOIN job_history ON departments.department_id = job_history.department_id

SQL Worksheet

```
1 SELECT * FROM departments INNER JOIN job_history ON departments.department_id = job_history.department_id
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DEPARTMENT_ID	DEPARTMENT_NAME	MANAGER_ID	LOCATION_ID	EMPLOYEE_ID	START_DATE	END_DATE	JOB_ID	DEPARTMENT_ID
20	Marketing	201	1800	201	17-FEB-04	19-DEC-07	MK_REP	20
50	Shipping	121	1500	114	24-MAR-06	31-DEC-07	ST_CLERK	50
50	Shipping	121	1500	122	01-JAN-07	31-DEC-07	ST_CLERK	50
60	IT	103	1400	102	13-JAN-01	24-JUL-06	IT_PROG	60
80	Sales	145	2500	176	24-MAR-06	31-DEC-06	SA_REP	80
80	Sales	145	2500	176	01-JAN-07	31-DEC-07	SA_MAN	80
90	Executive	100	1700	200	17-SEP-95	17-JUN-01	AD_ASST	90
90	Executive	100	1700	200	01-JUL-02	31-DEC-06	AC_ACCOUNT	90
110	Accounting	205	1700	101	21-SEP-97	27-OCT-01	AC_ACCOUNT	110
110	Accounting	205	1700	101	28-OCT-01	15-MAR-05	AC_MGR	110

5. Соедините левым соединением таблицы стран (countries) и локаций (locations) с условием равенства по полям идентификатору стран (country_id).

SELECT * FROM countries LEFT OUTER JOIN locations ON countries.country_id = locations.country_id

SQL Worksheet

```
1 SELECT * FROM countries LEFT OUTER JOIN locations ON countries.country_id = locations.country_id
```

COUNTRY_ID	COUNTRY_NAME	REGION_ID	LOCATION_ID	STREET_ADDRESS	POSTAL_CODE	CITY	STATE_PROVINCE	COUNTRY_ID
IT	Italy	1	1000	1297 Via Cola di Rie	00989	Roma	-	IT
IT	Italy	1	1100	93091 Calle della Testa	10934	Venice	-	IT
JP	Japan	3	1200	2017 Shinjuku-ku	1689	Tokyo	Tokyo Prefecture	JP
JP	Japan	3	1300	9450 Kamiya-cho	6823	Hiroshima	-	JP
US	United States of America	2	1400	2014 Jabbawocky Rd	26192	Southlake	Texas	US
US	United States of America	2	1500	2011 Interiors Blvd	99236	South San Francisco	California	US
US	United States of America	2	1600	2007 Zagora St	58090	South Brunswick	New Jersey	US
US	United States of America	2	1700	2004 Charade Rd	98199	Seattle	Washington	US
CA	Canada	2	1800	147 Spadina Ave	M5V 2L7	Toronto	Ontario	CA
CA	Canada	2	1900	6092 Boxwood St	Y5W 9T2	Whitehorse	Yukon	CA
CN	China	3	2000	40-5-12 Laogianggen	190518	Beijing	-	CN
IN	India	3	2100	1298 Vileparle (E)	490231	Bombay	Maharashtra	IN
AU	Australia	3	2200	12-98 Victoria Street	2901	Sydney	New South Wales	AU
SG	Singapore	3	2300	198 Clementi North	540198	Singapore	-	SG

6. Соедините левым соединением таблицы (left outer join) истории работ (job_history) и типов работ (jobs) с условием равенства по полям вида работ (job_id). При этом, для таблицы работ (jobs) поставьте лимит на количество строк (rownum) меньше десяти.

SELECT * FROM job_history j1 LEFT OUTER JOIN (SELECT * FROM jobs WHERE ROWNUM < 10) j2 ON j1.job_id = j2.job_id

SQL Worksheet

```
1 SELECT * FROM job_history j1 LEFT OUTER JOIN (SELECT * FROM jobs WHERE ROWNUM < 10) j2 ON j1.job_id = j2.job_id
```

EMPLOYEE_ID	START_DATE	END_DATE	JOB_ID	DEPARTMENT_ID	JOB_ID	JOB_TITLE	MIN_SALARY	MAX_SALARY
200	17-SEP-95	17-JUN-01	AD_ASST	90	AD_ASST	Administration Assistant	3000	6000
101	28-OCT-01	15-MAR-05	AC_MGR	110	AC_MGR	Accounting Manager	8200	16000
101	21-SEP-97	27-OCT-01	AC_ACCOUNT	110	AC_ACCOUNT	Public Accountant	4200	9000
200	01-JUL-02	31-DEC-06	AC_ACCOUNT	90	AC_ACCOUNT	Public Accountant	4200	9000
176	01-JAN-07	31-DEC-07	SA_MAN	80	SA_MAN	Sales Manager	10000	20000
176	24-MAR-06	31-DEC-06	SA_REP	80	SA_REP	Sales Representative	6000	12000
114	24-MAR-06	31-DEC-07	ST_CLERK	50	-	-	-	-
122	01-JAN-07	31-DEC-07	ST_CLERK	50	-	-	-	-
102	13-JAN-01	24-JUL-06	IT_PROG	60	-	-	-	-

7. Сделайте запрос, в котором правым соединением присоедините к таблице истории работ (job_history) таблицу типов работ (jobs) с условием на тип работы программистов (IT_PROG).

SELECT * FROM job_history RIGHT OUTER JOIN jobs ON job_history.job_id = jobs.job_id WHERE jobs.job_id = 'IT_PROG'

SQL Worksheet

1	SELECT * FROM job_history RIGHT OUTER JOIN jobs ON job_history.job_id = jobs.job_id WHERE jobs.job_id = 'IT_PROG'
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JOB_ID	JOB_TITLE	MIN_SALARY	MAX_SALARY	EMPLOYEE_ID	START_DATE	END_DATE	JOB_ID	DEPARTMENT_ID
IT_PROG	Programmer	4000	10000	102	13-JAN-01	24-JUL-06	IT_PROG	60

8. Создайте запрос, в котором будут соединяться таблицы регионов (regions) и стран (countries) левым соединением и этот набор данных нужно присоединить к таблице локаций (locations) с фильтром на страны - Канада, Мексика, США.

SELECT * FROM regions LEFT OUTER JOIN countries ON regions.region_id = countries.region_id INNER JOIN locations ON countries.country_id = locations.country_id WHERE locations.country_id = 'US' OR locations.country_id = 'CA' OR locations.country_id = 'MX'

SQL Worksheet

1	SELECT * FROM regions LEFT OUTER JOIN countries ON regions.region_id = countries.region_id INNER JOIN locations ON countries.country_id = locations.country_id WHERE locations.country_id = 'US' OR locations.country_id = 'CA' OR locations.country_id = 'MX'
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REGION_ID	REGION_NAME	COUNTRY_ID	COUNTRY_NAME	REGION_ID	LOCATION_ID	STREET_ADDRESS	POSTAL_CODE	CITY	STATE_PROVINCE	COUNTRY_ID
2	Americas	US	United States of America	2	1400	2014 Jabberwocky Rd	26192	Southlake	Texas	US
2	Americas	US	United States of America	2	1500	2011 Interiors Blvd	99236	South San Francisco	California	US
2	Americas	US	United States of America	2	1600	2007 Zagora St	50000	South Brunswick	New Jersey	US
2	Americas	US	United States of America	2	1700	2004 Charade Rd	98199	Seattle	Washington	US
2	Americas	CA	Canada	2	1800	147 Spadina Ave	M5V 2L7	Toronto	Ontario	CA
2	Americas	CA	Canada	2	1900	6092 Boxwood St	Y5W 9T2	Whitehorse	Yukon	CA
2	Americas	MX	Mexico	2	3200	Mariano Escobedo 9991	11932	Mexico City	Districto Federal,	MX

9. Соедините полным соединением таблицы стран (countries) и локаций (locations) с условием равенства по полям идентификатору стран (country_id) и условием включения стран Бразилии и Аргентины.

SELECT * FROM countries FULL OUTER JOIN locations ON countries.country_id = locations.country_id WHERE countries.country_id IN ('AR', 'BR')

SQL Worksheet

```
1 SELECT * FROM countries FULL OUTER JOIN locations ON countries.country_id = locations.country_id WHERE countries.country_id IN ('AR', 'BR')
```

COUNTRY_ID	COUNTRY_NAME	REGION_ID	LOCATION_ID	STREET_ADDRESS	POSTAL_CODE	CITY	STATE_PROVINCE	COUNTRY_ID
BR	Brazil	2	2800	Rua Frei Caneca 1360	01307-002	Sao Paulo	Sao Paulo	BR
AR	Argentina	2	-	-	-	-	-	-

10. Выберите данные по полю наименования отдела (department_name) из таблицы отделов (departments) с фильтром идентификатора локаций (location_id) равный 1700. И вычтите выборку с полем наименования отдела (department_name) из таблицы отделов (departments) с фильтром идентификатора локаций (location_id) не равный 1700.

SELECT department_name, location_id FROM departments WHERE location_id = 1700 MINUS SELECT department_name, location_id FROM departments WHERE location_id <> 1700

SQL Worksheet

```
1 SELECT department_name, location_id FROM departments WHERE location_id = 1700 MINUS SELECT department_name, location_id FROM departments WHERE location_id <> 1700
```

DEPARTMENT_NAME	LOCATION_ID
Accounting	1700
Administration	1700
Benefits	1700
Construction	1700
Contracting	1700
Control And Credit	1700
Corporate Tax	1700
Executive	1700
Finance	1700
Government Sales	1700
IT Helpdesk	1700

11. Используя операторы над множествами, выведите список должностей отделов 10, 50 и 20 в таком же порядке отделов.

```
select distinct emp.job_id, emp.department_id from employees emp where  
emp.department_id=10
```

union all

```
select distinct emp.job_id, emp.department_id from employees emp where  
emp.department_id=50
```

union all

```
select distinct emp.job_id, emp.department_id from employees emp where  
emp.department_id=20
```

SQL Worksheet

```
1 select distinct emp.job_id, emp.department_id from employees emp where emp.department_id=10  
2  
3 union all  
4  
5 select distinct emp.job_id, emp.department_id from employees emp where emp.department_id=50  
6  
7 union all  
8  
9 select distinct emp.job_id, emp.department_id from employees emp where emp.department_id=20  
10
```

JOB_ID	DEPARTMENT_ID
AD_ASST	10
SH_CLERK	50
ST_MAN	50
ST_CLERK	50
MK_MAN	20
MK_REP	20