



Faculty of Information Technology

Media Technologies

ICT Final's Project

Creating database management system into the television «REYDI»

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1. Define the purpose of your system.

Description: The new television "REYDI" started its activity a month ago on the initiative of businessmen in collaboration with young IT programmers named Merey and Adilya. If you combine their names (meREY + aDilya), you will get the name of television. Now television maintains its data manually in papers. An organization consists of 44 employees, who are divided by departments, such as administration, media, the department of release and analysis and so on. The administration department concludes contracts with shippers, who are providing to organization products(movies) for special prices. Also, this department pays salaries to employees and works on jurisprudence. A director manages television, signs contracts, documents and has own secretary. The secretary helps director with answering calls, taking messages and handling correspondence, maintaining diaries and arranging appointments, typing, preparing and collating reports. A workers of media department responsible for the equipment that projects movies onto a screen, editing recorded raw material into a finished product, developing concepts and layouts for project illustrations, planning, coordinating, and revising material for publication. As each department has a principal, media is controlled by head producer and subhead. A department of economic support (worker management) consists cleaners, drivers, mechanic, locksmith and fitter, who are in charge of office. They are clean the room, inspect and repair machinery, responsible for security systems and mechanical systems. A technical department has engineers, who are overseen the technical problems. For example, they oversee the installation and commissioning of new equipment, improve energy efficiency, controls the video equipment, configure and test operating systems. A department of release and analysis works directly with airtime. Its employees control all sounds, oversee network connection, controls video broadcast and responsible for broadcasting. To assist in storing all information about employees, Merey and Adilya, as programmers wants to provide an environment for "REYDI" that is convenient and efficient to use in retrieving and storing database information. So, in general the advantages of database are fast accessing of data, multiple users access the data at the same time and providing security of data. However, for the television it can be helpful in the following cases: storing the information about employees, generating receipt and other balance records, accessing information of the workers, updating them, making requires knowing about their projects and so on. Figure 1 indicates logo our organization.

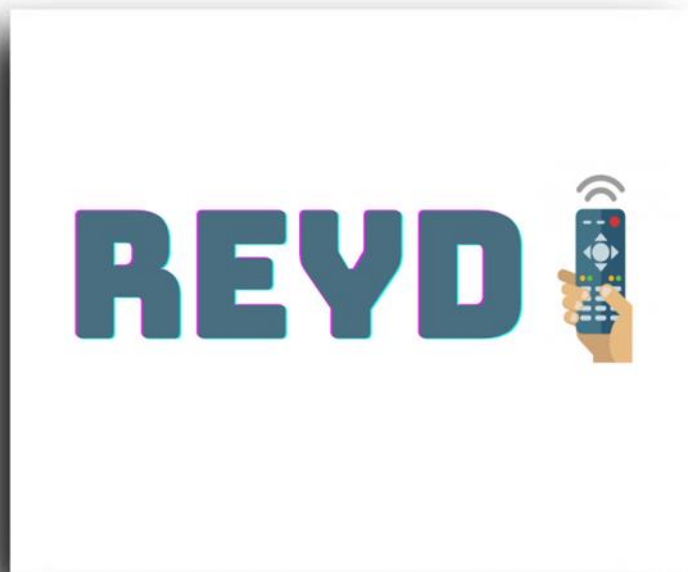


Figure 1 – Logo

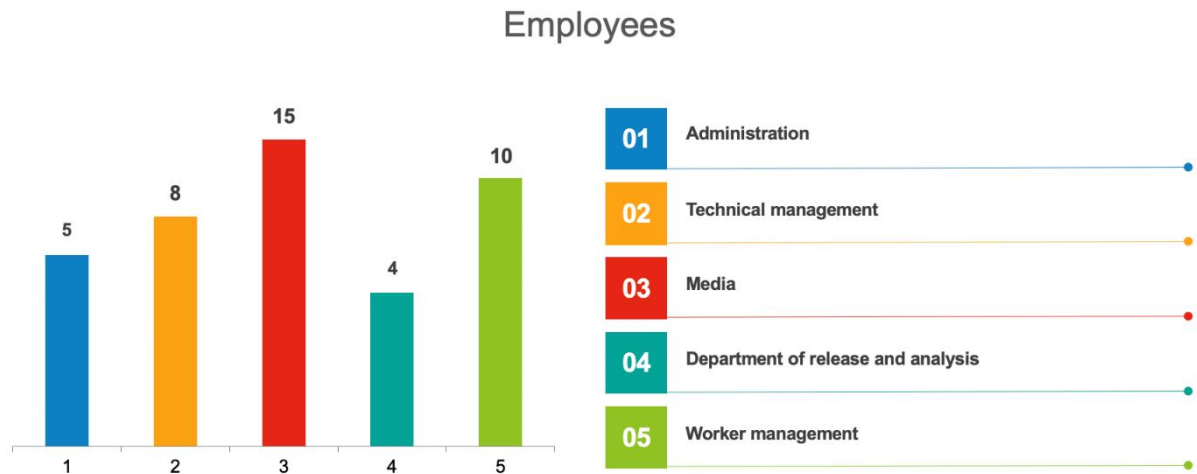


Figure 2 – Departments of employees.

Figure 2 shows quantity of employees in each department.

What is the purpose of the database? Why is it needed? What should it do?

The purpose of our database on the television «REYDI» is to develop an efficient project management system to track and control activities for employees. The database is typically designed so that it is easy to store and access information. The developed system can assist director in tracking and control of his workers and their projects in a real-time.

Who are the users and what are their information needs?

There are multiple users for this system defined by their role. The main users are director and administration department of television organization. A job of the director is to add or dismiss the employee in the system. Using this functionality, the director accesses the list of accepted workers and controls their works. The list of employees can be filtered by first name, last name, gender, job, salary, hire date and quit date.

What are the problems that the system should solve?

We have decided to create a simple database management system for new television. The ways that database improve our life: the ability to test before making changes without disturbing the persistent data; enabling data to be read as fast as possible; the ability to get instant insights into workers and TV shows; some queries grab individual pieces of data; the last one is that more and more data will be analyzed in real time.

What input data is available to the database?

The id is the employee ID that links the permanent information to the employee's entry in the database. Each employee has first name, last name, gender, job and own salary. Hire date and quit date describes whether the employee has left the work or is a currently attending worker. Job name describes which job the employee is pursuing secretary, video maker, graphic designer, driver, cleaner, head engineer and so on. Director_id, admin_id, media_id, WM_id, tech_id, R_A_id and comm_id all represent codes needed by the organization to describe the employee's job position. Work_schedule lists the number of hours the employee works weekly. A shipper, who provides to organization products(movies) has id, name of company, name of product, price for this product, quality and dubbing. A table "work" stores all information about employees, their work description and deadline for their works.

What kind of information should be stored in the database?

The database will store all the pertinent information about employees, starting from director, including people from a lot of departments like administration, media, worker management, technical management, commercial service and department of release and analysis.

Since it is television database, there will be shippers from whose TV programmes will be purchased and of course information about this programmes.

Business rules:

- Employee is managed by Director. (1:1)
- Director collaborates with Shippers. (1:M)
- Administration makes purchase Shipper's products. (1:M)
- Employee contains administration, worker management, media, commercial service, department of release and analysis and technical management. (1:1)
- Work has information of administration, worker management, media, commercial service, department of release and analysis and technical management. (1:1)

2. Create ERD using Crow's Foot notation (min.10 well-organized entities; their attributes, and types of relations);

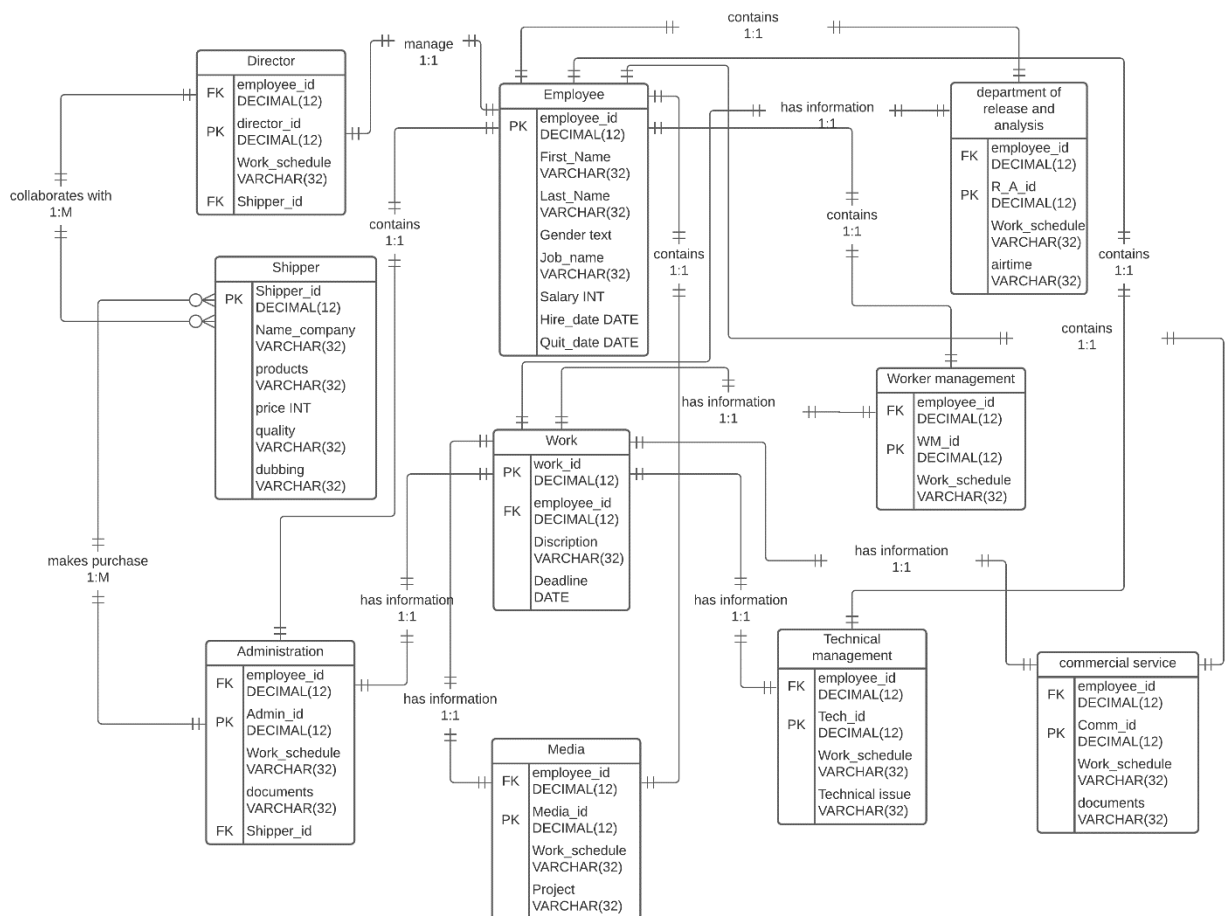


Figure 3 - The ER diagram of television “REYDI”

Figure 3 indicates the ERD of organization with using Crow's Foot notation.

3. Create database: tables with entities (tables) and constraints (PK, FK, UK, and etc.);
CODE:

```

CREATE TABLE Employee(
employee_id DECIMAL(12) primary key not null,
First_Name VARCHAR(32) not null,
Last_Name VARCHAR(32) not null ,

```

Gender Text,
Job_name VARCHAR(32) not null,
Salary INT not null,
Hire_date DATE not null,
Quit_date DATE
);

CREATE TABLE Shipper(
Shipper_id DECIMAL(12) primary key not null,
Name_company VARCHAR(32) not null,
products VARCHAR(32),
price INT,
quality VARCHAR(32),
dubbing VARCHAR(32)
);

CREATE TABLE director(
employee_id DECIMAL(12) not null,
shipper_id DECIMAL(12),
director_id DECIMAL(12) primary key not null,
Work_schedule VARCHAR(32) not null,
constraint director_employee_fk
foreign key (employee_id) **references** employee(employee_id),
constraint director_shipper_fk
foreign key(shipper_id) **references** shipper(shipper_id)
);

CREATE TABLE Administration (
employee_id DECIMAL(12) not null,
Admin_id DECIMAL(12) primary key not null,
Work_schedule VARCHAR(32) not null,
Documents VARCHAR(32),
shipper_id DECIMAL(12),
constraint Administration_employee_fk
foreign key (employee_id) **references** employee(employee_id),
constraint Administration_shipper_fk
foreign key (shipper_id) **references** Shipper(Shipper_id)
);

CREATE TABLE Media(
employee_id DECIMAL(12) not null,
Media_id DECIMAL(12) primary key not null,
Work_schedule VARCHAR(32) not null,
Project VARCHAR(32),
constraint Media_employee_fk
foreign key (employee_id) **references** employee(employee_id)
);

CREATE TABLE Worker_management(
employee_id DECIMAL(12) not null,
WM_id DECIMAL(12) primary key not null,
Work_schedule VARCHAR(32) not null,

```

constraint Worker_management_employee_fk
foreign key (employee_id) references employee(employee_id)
);

```

```

CREATE TABLE Work(
employee_id DECIMAL(12) not null,
work_id DECIMAL(12) primary key not null,
Discription VARCHAR(32),
Deadline DATE,
constraint work_employee_fk
foreign key (employee_id) references employee(employee_id)
);

```

```

CREATE TABLE Technical_management(
employee_id DECIMAL(12) not null,
Tech_id DECIMAL(12) primary key not null,
Work_schedule VARCHAR(32) not null,
Technical_issue VARCHAR(32),
constraint Technical_management_employee_fk
foreign key (employee_id) references employee(employee_id)
);

```

```

CREATE TABLE department_of_release_and_analysis(
employee_id DECIMAL(12) not null,
R_A_id DECIMAL(12) primary key not null,
Work_schedule VARCHAR(32) not null,
airtime VARCHAR(32),
constraint department_of_release_and_analysis_employee_fk
foreign key (employee_id) references employee(employee_id)
);

```

```

CREATE TABLE Commercial_service(
employee_id DECIMAL(12) not null,
Comm_id DECIMAL(12) primary key not null,
Work_schedule VARCHAR(32) not null,
documents VARCHAR(32),
constraint COMMservice_employee_fk
foreign key (employee_id) references employee(employee_id)
);

```

4. Write 5 different (add, drop and constraints) ALTER TABLE statements;

1) The director wants to introduce a new rule for employees so that they know that everyone is busy with the right salary. It states that each employee should report on the amount of work done.

CODE:

```

ALTER TABLE Work
ADD quantity_of_works INT;

```

2) The Director decided that the gender difference did not play a role in their work and considered it right to remove it from the database.

CODE:

```

ALTER TABLE employee

```

DROP COLUMN gender;

3) The organization has decided to accept only unique products from Shippers.

CODE:

ALTER TABLE Shipper

ADD CONSTRAINT UC_Product UNIQUE (products);

4) Changed DATATYPE due to the required length of report by the head of department.

CODE:

ALTER TABLE Work

ALTER COLUMN Discription TYPE TEXT;

5) Order to update in connection with the contract between the companies due to non-payment for the product.

CODE:

ALTER TABLE shipper

ALTER COLUMN price SET NOT NULL;

5. Write SQL query for DML statements (insert, delete, update). Insert - for all tables at least 10 rows, Update – for each table with a condition, Delete – for each table with a condition;

Employee

	employee_id [PK] numeric (12)	first_name character varying (32)	last_name character varying (32)	job_name character varying (32)	salary integer	hire_date date	quit_date date
1	1	Makarov	Dreyar	Director	500000	2000-01-01	[null]
2	2	Mirajane	Strauss	Secretary	200000	2005-03-15	[null]
3	3	Laxus	Dreyar	Subhead	400000	2001-02-02	[null]
4	4	Lucy	Heartfilia	Videomaker	280000	2001-12-05	[null]
5	5	Natsu	Dragneel	Grafic Designer	350000	2006-04-05	[null]
6	6	Erza	Scarlet	Lawyer	350000	2006-04-05	[null]
7	7	Gray	Fullbuster	Head producer	300000	2006-04-30	[null]
8	8	Gajeel	Redfox	Axeman	250000	2010-04-19	[null]
9	9	Juvia	Lockser	Bookkeeper	250000	2009-08-17	[null]
10	10	Wendy	Marvell	Economist	350000	2007-08-05	[null]
11	11	Cana	Alberona	Accountant	400000	2006-12-15	[null]
12	12	Elfman	Strauss	Projectionist	320000	2005-04-05	[null]
13	13	Lisanna	Strauss	Projectionist	320000	2005-04-05	[null]
14	14	Levy	McGarden	Editor	290000	2016-12-05	[null]
15	15	Gildarts	Clive	Editor	290000	2015-05-06	[null]
16	16	Freed	Justine	Editor	290000	2012-04-08	[null]
17	17	Macao	Conbolt	Decorator	300000	2007-07-25	[null]
18	18	Wakaba	Mine	Head Editor	350000	2009-04-01	[null]
19	19	Alzack	Connell	Producer	300000	2008-08-02	[null]
20	20	Bisca	Connell	Producer	300000	2012-05-03	[null]
21	21	Max	Alors	Producer	300000	2016-02-16	[null]
22	22	Nab	Lasaro	Head of department	310000	2015-08-19	[null]
23	23	Reedus	Jonah	Cleaner	100000	2013-03-13	[null]
24	24	Vijeeter	Ecor	Cleaner	100000	2012-08-23	[null]

25	25	Warren	Rocko	Cleaner	100000	2006-10-17	[null]
26	26	Laki	Olietta	Driver	130000	2011-08-25	[null]
27	27	Romeo	Conbolt	Driver	130000	2011-03-05	[null]
28	28	Mest	Gryder	Driver	130000	2016-04-26	[null]
29	29	Wan	Chanzi	Mechanic	210000	2006-04-05	[null]
30	30	Joey	Fullborn	Locksmith	220000	2007-04-01	[null]
31	31	Mickey	Chickentiger	Fitter	230000	2008-05-02	[null]
32	32	Mavis	Vermillion	Head engineer	280000	2006-02-03	[null]
33	33	Precht	Gaebolg	Lead engineer	250000	2009-01-03	[null]
34	34	Yuri	Dreyar	Energy-engineer	200000	2010-02-07	[null]
35	35	Warrod	Sequen	Engineer of repairing	240000	2001-09-08	[null]
36	36	Ren	Akatsuki	Engineer for service equ...	220000	2012-08-09	[null]
37	37	Minerva	Orland	Video-engineer	270000	2018-07-06	[null]
38	38	Yukino	Agria	System-engineer	260000	2001-11-12	[null]
39	39	Kagura	Mikazuchi	Engineer of airtime	280000	2002-10-14	[null]
40	40	Beth	Vanderwood	Engineer of airtime	280000	2003-07-16	[null]
41	41	Risley	Law	Engineer of airtime	280000	2008-01-18	[null]
42	42	Jellal	Fernandes	Engineer of airtime	280000	2009-03-16	[null]
43	43	Ultear	Milkovich	Video-engineer	290000	2006-01-13	[null]
44	44	Layla	Heartfilia	Projectionist	300000	2008-05-05	[null]

Figure 4 – List of employees

Figure 4 shows information of employee in table “employee”.

CODE:

```
INSERT INTO employee(employee_id, First_name, Last_name, Job_name, salary, Hire_date)
VALUES (1, 'Makarov', 'Dreyar', 'Director', '500000', '01.01.2000'),
(2, 'Mirajane', 'Strauss', 'Secretary', '200000', '15.03.2005'),
(3, 'Lexus', 'Dreyar', 'Subhead', '400000', '02.02.2001'),
(4, 'Lucy', 'Heartfilia', 'Videomaker', '280000', '05.12.2001'),
(5, 'Natsu', 'Dragneel', 'Grafic Designer', '350000', '05.04.2006'),
(6, 'Erza', 'Scarlet', 'Lawyer', '350000', '05.04.2006'),
(7, 'Gray', 'Fullbuster', 'Head producer', '300000', '30.04.2006'),
(8, 'Gajeel', 'Redfox', 'Axeman', '250000', '19.04.2010'),
(9, 'Juvia', 'Lockser', 'Bookkeeper', '250000', '17.08.2009'),
(10, 'Wendy', 'Marvell', 'Economist', '350000', '05.08.2007'),
(11, 'Cana', 'Alberona', 'Accountant', '400000', '15.12.2006'),
(12, 'Elfman', 'Strauss', 'Projectionist', '320000', '05.04.2005'),
(13, 'Lisanna', 'Strauss', 'Projectionist', '320000', '05.04.2005'),
(14, 'Levy', 'McGarden', 'Editor', '290000', '05.12.2016'),
(15, 'Gildarts', 'Clive', 'Editor', '290000', '06.05.2015'),
(16, 'Freed', 'Justine', 'Editor', '290000', '08.04.2012'),
(17, 'Macao', 'Conbolt', 'Decorator', '300000', '25.07.2007'),
(18, 'Wakaba', 'Mine', 'Head Editor', '350000', '01.04.2009'),
(19, 'Alzack', 'Connell', 'Producer', '300000', '02.08.2008'),
(20, 'Bisca', 'Connell', 'Producer', '300000', '03.05.2012'),
(21, 'Max', 'Alors', 'Producer', '300000', '16.02.2016'),
(22, 'Nab', 'Lasaro', 'Head of department', '310000', '19.08.2015'),
(23, 'Reedus', 'Jonah', 'Cleaner', '100000', '13.03.2013'),
```


(24,'Vijeeter ','Ecor ','Cleaner','100000','23.08.2012'),
 (25,'Warren ','Rocko ','Cleaner','100000','17.10.2006'),
 (26,'Laki ','Olietta ','Driver','130000','25.08.2011'),
 (27,'Romeo ','Conbolt','Driver','130000','05.03.2011'),
 (28,'Mest ','Gryder ','Driver','130000','26.04.2016'),
 (29,'Wan ','Chanzi ','Mechanic','210000','05.04.2006'),
 (30,'Joey ','Fullborn ','Locksmith','220000','01.04.2007'),
 (31,'Mickey ','Chickentiger ','Fitter','230000','02.05.2008'),
 (32,'Mavis ','Vermillion ','Head engineer','280000','03.02.2006'),
 (33,'Precht ','Gaebolg ','Lead engineer','250000','03.01.2009'),
 (34,'Yuri','Dreyar ','Energy-engineer','200000','07.02.2010'),
 (35,'Warrod ','Sequen ','Engineer of repairing','240000','08.09.2001'),
 (36,'Ren ','Akatsuki ','Engineer for service equipment','220000','09.08.2012'),
 (37,'Minerva','Orland ','Video-engineer','270000','06.07.2018'),
 (38,'Yukino ','Agria ','System-engineer','260000','12.11.2010'),
 (39,'Kagura ','Mikazuchi','Engineer of airtime','280000','14.10.2002'),
 (40,'Beth ','Vanderwood ','Engineer of airtime','280000','16.07.2003'),
 (41,'Risley','Law ','Engineer of airtime','280000','18.08.2008'),
 (42,'Jellal','Fernandes','Engineer of airtime','280000','16.03.2009'),
 (43,'Ultear ','Milkovich','Video-engineer','290000','13.01.2006'),
 (44,'Layla ','Heartfilia','Projectionist','300000','05.05.2008');

Shipper








Data Output		Explain	Messages	Notifications								
	shipper_id [PK] numeric (12)		name_company character varying (32)		products character varying (32)		price integer		quality character varying (32)		dubbing character varying (32)	
1		101	Netflix		Bird box		650000		Full HD		English	
2		102	Disney		Aladdin		680000		Ultra HD		English	
3		103	20th Century Fox		Deadpool		700000		Ultra HD		Russian	
4		104	Kazakhfilm		Tomiris		510000		HD		Kazakh	
5		108	Disney		The Lion King 2		630000		Full HD		English	
6		109	Paramount Pictures		Titanic		713000		Quad HD		Russian	
7		106	Marvel Studios		The Avengers		750000		Ultra HD		English	
8		107	Nurtas Production		Bride Sabina 2		540000		Full HD		Kazakh	

Figure 5 – List of shippers

Figure 5 shows information of suppliers in table “shipper”.

CODE:

INSERT INTO shipper(shipper_id, name_company, products, price, quality, dubbing)
VALUES (101, 'Netflix', 'Bird box', 650000, 'Full HD', 'English'),
 (102, 'Disney', 'Aladdin', 680000, 'Ultra HD', 'English'),
 (103, '20th Century Fox', 'Deadpool', 700000, 'Ultra HD', 'Russian'),
 (104, 'Kazakhfilm', 'Tomiris', 510000, 'HD', 'Kazakh'),
 (108, 'Disney', 'The Lion King 2', 630000, 'Full HD', 'English'),
 (109, 'Paramount Pictures', 'Titanic', 713000, 'Quad HD', 'Russian'),
 (106, 'Marvel Studios', 'The Avengers', 750000, 'Ultra HD', 'English'),
 (107, 'Nurtas Production', 'Bride Sabina 2', 540000, 'Full HD', 'Kazakh');

Director






Data Output		Explain	Messages	Notifications	
	employee_id numeric (12) 	shipper_id numeric (12) 	director_id [PK] numeric (12) 	work_schedule character varying (32) 	
1	1	101	111	Flex	
2	1	102	112	Flex	
3	1	103	113	Flex	
4	1	104	114	Flex	
5	1	106	115	Flex	
6	1	107	116	Flex	
7	1	108	117	Flex	
8	1	109	118	Flex	

Figure 6 – List of cooperation between the director and shippers.

Figure 6 shows information of cooperation of director and shippers.

CODE:

INSERT INTO director(*employee_id*, *shipper_id*, *director_id*, *work_schedule*)
VALUES

(1, 101, 111, 'Flex'),
(1, 102, 112, 'Flex'),
(1, 103, 113, 'Flex'),
(1, 104, 114, 'Flex'),
(1, 106, 115, 'Flex'),
(1, 107, 116, 'Flex'),
(1, 108, 117, 'Flex'),
(1, 109, 118, 'Flex');

Administration







		employee_id numeric (12) 	admin_id [PK] numeric (12) 	work_schedule character varying (32) 	documents character varying (32) 	shipper_id numeric (12) 
1		6	1	8 hours per day	legal documents and forms	101
2		8	2	8 hours per day	certificates	102
3		9	3	8 hours per day	incoming invoices	103
4		10	4	8 hours per day	papers	104
5		11	5	8 hours per day	financial transactions	106
6		6	6	8 hours per day	legal documents and forms	109
7		8	7	8 hours per day	certificates	108
8		9	8	8 hours per day	incoming invoices	104
9		10	9	8 hours per day	papers	103
10		11	10	8 hours per day	financial transactions	102

Figure 7 – List of information of administration.

Figure 7 shows employees, who are working in administration department.

CODE:

```

INSERT INTO administration(employee_id, shipper_id, admin_id, work_schedule, documents)
VALUES (6, 101, 1, '8 hours per day', 'legal documents and forms'),
(8, 102, 2, '8 hours per day', 'certificates'),
(9, 103, 3, '8 hours per day', 'incoming invoices'),
(10, 104, 4, '8 hours per day', 'papers'),
(11, 106, 5, '8 hours per day', 'financial transactions'),
(6, 109, 6, '8 hours per day', 'legal documents and forms'),
(8, 108, 7, '8 hours per day', 'certificates'),
(9, 104, 8, '8 hours per day', 'incoming invoices'),
(10, 103, 9, '8 hours per day', 'papers'),
(11, 102, 10, '8 hours per day', 'financial transactions');

```

Media





	 employee_id numeric (12)	 media_id [PK] numeric (12)	 work_schedule character varying (32)	 project character varying (32)
1	3	333	9-to-6 work schedule	oversees the work
2	4	334	9-to-6 work schedule	material
3	5	335	9-to-6 work schedule	project illustrations
4	7	336	9-to-6 work schedule	management of the shoot day
5	12	337	9-to-6 work schedule	projects movies
6	13	338	9-to-6 work schedule	projects movies
7	14	339	9-to-6 work schedule	material for publication
8	15	340	9-to-6 work schedule	material for publication
9	16	341	9-to-6 work schedule	material for publication
10	17	342	9-to-6 work schedule	background scenery
11	18	343	9-to-6 work schedule	manages the team
12	19	344	9-to-6 work schedule	elements of a production
13	20	345	9-to-6 work schedule	elements of a production
14	21	346	9-to-6 work schedule	elements of a production
15	44	347	9-to-6 work schedule	projects movies

Figure 8 – List of information of media.

Figure 8 shows employees, who are working in media department.

CODE:

```

INSERT INTO media(employee_id, media_id, work_schedule, project)
VALUES (3, 333, '9-to-6 work schedule', 'oversees the work '),
(4, 334, '9-to-6 work schedule', ' material '),
(5, 335, '9-to-6 work schedule', ' project illustrations'),
(7, 336, '9-to-6 work schedule', 'management of the shoot day'),
(12, 337, '9-to-6 work schedule', ' projects movies '),
(13, 338, '9-to-6 work schedule', ' projects movies '),
(14, 339, '9-to-6 work schedule', ' material for publication'),
(15, 340, '9-to-6 work schedule', ' material for publication'),

```

(16, 341, '9-to-6 work schedule', ' material for publication'),
 (17, 342, '9-to-6 work schedule', ' background scenery '),
 (18, 343, '9-to-6 work schedule', 'manages the team'),
 (19, 344, '9-to-6 work schedule', ' elements of a production'),
 (20, 345, '9-to-6 work schedule', ' elements of a production'),
 (21, 346, '9-to-6 work schedule', ' elements of a production'),
 (44, 347, '9-to-6 work schedule', ' projects movies ');

Worker Management




	 employee_id numeric (12)	 wm_id [PK] numeric (12)	 work_schedule character varying (32)
1	22	444	Mo-Fr from 9 a.m. to 6 p.m
2	23	445	We-Thu from 9 a.m. to 6 p.m
3	24	446	Fr-Sat from 9 a.m. to 6 p.m
4	25	447	Mon-Tue from 9 a.m. to 6 p.m
5	26	448	We-Thu from 9 a.m. to 6 p.m
6	27	449	Mo-Tue from 9 a.m. to 6 p.m
7	28	450	Fr-Sat from 9 a.m. to 6 p.m
8	29	451	Mo-Fr from 9 a.m. to 6 p.m
9	30	452	Mo-Fr from 9 a.m. to 6 p.m
10	31	453	Mo-Fr from 9 a.m. to 6 p.m

Figure 9 – List of information of worker management.

Figure 9 shows employees, who are working in worker management department.

CODE:

```
INSERT INTO worker_management(employee_id, WM_id, work_schedule)
VALUES (22, 444, 'Mo-Fr from 9 a.m. to 6 p.m'),
(23, 445, 'We-Thu from 9 a.m. to 6 p.m'),
(24, 446, 'Fr-Sat from 9 a.m. to 6 p.m'),
(25, 447, 'Mon-Tue from 9 a.m. to 6 p.m'),
(26, 448, 'We-Thu from 9 a.m. to 6 p.m'),
(27, 449, 'Mo-Tue from 9 a.m. to 6 p.m'),
(28, 450, 'Fr-Sat from 9 a.m. to 6 p.m'),
(29, 451, 'Mo-Fr from 9 a.m. to 6 p.m'),
(30, 452, 'Mo-Fr from 9 a.m. to 6 p.m'),
(31, 453, 'Mo-Fr from 9 a.m. to 6 p.m');
```

Department of release and analysis





	 employee_id numeric (12)	 r_a_id [PK] numeric (12)	 work_schedule character varying (32)	 airtime character varying (32)
1	39	777	8 hours per day	sounds
2	40	778	8 hours per day	network connection
3	41	779	8 hours per day	video broadcast
4	42	780	8 hours per day	broadcasting shows

Figure 10 – List of information of department of release and analysis.

Figure 10 shows employees, who are working in release and analysis department.

CODE:

INSERT INTO department_of_release_and_analysis(employee_id, R_A_id, work_schedule, airtime)

*VALUES (39, 777, '8 hours per day', 'sounds'),
(40, 778, '8 hours per day', 'network connection'),
(41, 779, '8 hours per day', 'video broadcast'),
(42, 780, '8 hours per day', 'broadcasting shows');*

Commercial service





	 employee_id numeric (12)	 comm_id [PK] numeric (12)	 work_schedule character varying (32)	 documents character varying (32)
1	2	888	Mo-Fri from 8 a.m. to 6 p.m	emails&letters

Figure 11 – List of information of commercial service.

Figure 11 shows employees, who are working in commercial service department.

CODE:

INSERT INTO commercial_service(employee_id, comm_id, work_schedule, documents)

VALUES (2, 888, 'Mo-Fri from 8 a.m. to 6 p.m', 'emails&letters');

Technical management





	 employee_id numeric (12)	 tech_id [PK] numeric (12)	 work_schedule character varying (32)	 technical_issue character varying (32)
1	32	666	8 a.m. to 6 p.m. everyday	the department
2	33	667	8 a.m. to 6 p.m. everyday	oversees the commissioning
3	34	668	8 a.m. to 6 p.m. everyday	energy efficiency
4	35	669	8 a.m. to 6 p.m. everyday	inspects&tests
5	36	670	8 a.m. to 6 p.m. everyday	assists in installing
6	37	671	8 a.m. to 6 p.m. everyday	the installation
7	38	672	8 a.m. to 6 p.m. everyday	operating systems
8	43	673	8 a.m. to 6 p.m. everyday	the maintenance

Figure 12 – List of information of technical management.

Figure 12 shows employees, who are working in technical management department.

CODE:

```
INSERT INTO technical_management(employee_id, tech_id, work_schedule, technical_issue)
VALUES (32, 666, '8 a.m. to 6 p.m. everyday', ' the department '),
(33, 667, '8 a.m. to 6 p.m. everyday', 'oversees the commissioning '),
(34, 668, '8 a.m. to 6 p.m. everyday', ' energy efficiency '),
(35, 669, '8 a.m. to 6 p.m. everyday', 'inspects&tests'),
(36, 670, '8 a.m. to 6 p.m. everyday', 'assists in installing '),
(37, 671, '8 a.m. to 6 p.m. everyday', ' the installation '),
(38, 672, '8 a.m. to 6 p.m. everyday', 'operating systems'),
(43, 673, '8 a.m. to 6 p.m. everyday', ' the maintenance ');
```

Work

Figure 13 indicates information of work activity.

Figure 13 – List of information of work.

	employee_id numeric (12)	work_id [PK] numeric (12)	discription text	deadline date	quantity_of_works integer
1	1	555	manages the te...	2020-11-30	335
2	2	556	emails & letters	2020-11-30	50
3	3	557	oversees the w...	2020-11-27	27
4	4	558	material	2020-11-20	27
5	5	559	project illustrati...	2020-11-23	27
6	6	560	legal document...	2020-11-30	27
7	7	561	management o...	2020-11-30	27
8	8	562	employment co...	2020-11-30	43
9	9	563	incoming invo...	2020-11-30	27
10	10	564	daily turnover	2020-11-30	27
11	11	565	financial transa...	2020-11-30	27
12	12	566	projects movies	2020-11-16	9
13	13	567	projects movies	2020-11-16	9
14	14	568	material for pu...	2020-11-23	9
15	15	569	material for pu...	2020-11-23	9
16	16	570	material for pu...	2020-11-23	9
17	17	571	background sc...	2020-11-24	27
18	18	572	manages the te...	2020-11-25	27
19	19	573	elements of a p...	2020-11-19	9
20	20	574	elements of a p...	2020-11-19	9

21	21	575	elements of a p...	2020-11-19	9
22	22	576	controls the te...	2020-11-30	9
23	23	577	cleans the room	2020-11-24	1
24	24	578	cleans the room	2020-11-24	1
25	25	579	cleans the room	2020-11-24	1
26	26	580	drives the car	2020-11-30	1
27	27	581	drives the car	2020-11-30	1
28	28	582	drives the car	2020-11-30	1
29	29	583	inspects and re...	2020-11-30	1
30	30	584	responsible for ...	2020-11-30	1
31	31	585	mechanical sys...	2020-11-30	1
32	32	586	the department	2020-11-23	12
33	33	587	oversees the c...	2020-11-23	12
34	34	589	energy efficiency	2020-11-23	1
35	35	590	inspects & tests	2020-11-23	1
36	36	591	assists in instal...	2020-11-23	1
37	37	592	the installation	2020-11-23	7
38	38	593	operating syste...	2020-11-23	1
39	39	594	sounds	2020-11-30	34
40	40	595	network conne...	2020-11-30	34
41	41	596	video broadcast	2020-11-30	34
42	42	597	broadcasting s...	2020-11-30	34
43	43	598	the maintenance	2020-11-23	1
44	44	599	projects movies	2020-11-16	9

CODE:

INSERT INTO work(employee_id, work_id, discription, deadline, quantity_of_works)
VALUES (1, 555, 'manages the television', '30.11.2020', 335),
(2, 556, 'emails & letters', '30.11.2020', 50),
(3, 557, 'oversees the work', '27.11.2020', 27),
(4, 558, 'material', '20.11.2020', 27),
(5, 559, 'project illustrations', '23.11.2020', 27),
(6, 560, 'legal documents and forms', '30.11.2020', 27),
(7, 561, 'management of the shoot day', '30.11.2020', 27),
(8, 562, 'employment contracts with employees', '30.11.2020', 43),
(9, 563, 'incoming invoices', '30.11.2020', 27),
(10, 564, 'daily turnover', '30.11.2020', 27),
(11, 565, 'financial transactions', '30.11.2020', 27),
(12, 566, 'projects movies', '16.11.2020', 9),
(13, 567, 'projects movies', '16.11.2020', 9),
(14, 568, 'material for publication', '23.11.2020', 9),
(15, 569, 'material for publication', '23.11.2020', 9),
(16, 570, 'material for publication', '23.11.2020', 9),
(17, 571, 'background scenery', '24.11.2020', 27),

(18, 572, 'manages the team', '25.11.2020', 27),
 (19, 573, 'elements of a production', '19.11.2020', 9),
 (20, 574, 'elements of a production', '19.11.2020', 9),
 (21, 575, 'elements of a production', '19.11.2020', 9),
 (22, 576, 'controls the team', '30.11.2020', 9),
 (23, 577, 'cleans the room', '24.11.2020', 1),
 (24, 578, 'cleans the room', '24.11.2020', 1),
 (25, 579, 'cleans the room', '24.11.2020', 1),
 (26, 580, 'drives the car', '30.11.2020', 1),
 (27, 581, 'drives the car', '30.11.2020', 1),
 (28, 582, 'drives the car', '30.11.2020', 1),
 (29, 583, 'inspects and repairs machinery', '30.11.2020', 1),
 (30, 584, 'responsible for security systems', '30.11.2020', 1),
 (31, 585, 'mechanical systems', '30.11.2020', 1),
 (32, 586, 'the department', '23.11.2020', 12),
 (33, 587, 'oversees the commissioning', '23.11.2020', 12),
 (34, 589, 'energy efficiency', '23.11.2020', 1),
 (35, 590, 'inspects & tests', '23.11.2020', 1),
 (36, 591, 'assists in installing', '23.11.2020', 1),
 (37, 592, 'the installation', '23.11.2020', 7),
 (38, 593, 'operating systems', '23.11.2020', 1),
 (39, 594, 'sounds', '30.11.2020', 34),
 (40, 595, 'network connection', '30.11.2020', 34),
 (41, 596, 'video broadcast', '30.11.2020', 34),
 (42, 597, 'broadcasting shows', '30.11.2020', 34),
 (43, 598, 'the maintenance', '23.11.2020', 1),
 (44, 599, 'projects movies', '16.11.2020', 9);

1) Staff Reduction Order was issued, which was hired until 19 April 2002. Due to corruption offences.

CODE:

UPDATE Employee

SET quit_date='27-January-2018' WHERE hire_date<'19-April-2002';

36	40	Beth	Vanderwood	Engineer of airtime	280000	2003-07-16	[null]
37	41	Risley	Law	Engineer of airtime	280000	2008-08-18	[null]
38	42	Jellal	Fernandes	Engineer of airtime	280000	2009-03-16	[null]
39	43	Ultear	Milkovich	Video-engineer	290000	2006-01-13	[null]
40	44	Layla	Heartfilia	Projectionist	300000	2008-05-05	[null]
41	1	Makarov	Dreyar	Director	500000	2000-01-01	2018-01-27
42	3	Laxus	Dreyar	Subhead	400000	2001-02-02	2018-01-27
43	4	Lucy	Heartfilia	Videomaker	280000	2001-12-05	2018-01-27
44	35	Warrod	Sequen	Engineer of repairing	240000	2001-09-08	2018-01-27

Figure 14 – List of employees, who were dismissed.

Figure 14 shows quantity of employees, who were dismissed.

2) Deletion of employees who have resigned or who have been dismissed at their own discretion.

CODE:

DELETE FROM director

WHERE employee_id=1;


```
DELETE FROM work
WHERE employee_id=1;
```

```
DELETE FROM work
WHERE employee_id=3;
```

```
DELETE FROM media
WHERE employee_id=3;
```

```
DELETE FROM work
WHERE employee_id=4;
```

```
DELETE FROM media
WHERE employee_id=4;
```

```
DELETE FROM technical_management
WHERE employee_id=35;
```

```
DELETE FROM work
WHERE employee_id=35;
```

```
DELETE FROM Employee
WHERE hire_date<'19-April-2002';
```

	employee_id [PK] numeric (12)	first_name character varying (32)	last_name character varying (32)	job_name character varying (32)	salary integer	hire_date date	quit_date date
22	25	Warren	Rocko	Cleaner	100000	2006-10-17	[null]
23	26	Laki	Olietta	Driver	130000	2011-08-25	[null]
24	27	Romeo	Conbolt	Driver	130000	2011-03-05	[null]
25	28	Mest	Gryder	Driver	130000	2016-04-26	[null]
26	29	Wan	Chanzi	Mechanic	210000	2006-04-05	[null]
27	30	Joey	Fullborn	Locksmith	220000	2007-04-01	[null]
28	31	Mickey	Chickentiger	Fitter	230000	2008-05-02	[null]
29	32	Mavis	Vermillion	Head engineer	280000	2006-02-03	[null]
30	33	Precht	Gaebolg	Lead engineer	250000	2009-01-03	[null]
31	34	Yuri	Dreyar	Energy-engineer	200000	2010-02-07	[null]
32	36	Ren	Akatsuki	Engineer for service equipm...	220000	2012-08-09	[null]
33	37	Minerva	Orland	Video-engineer	270000	2018-07-06	[null]
34	38	Yukino	Agria	System-engineer	260000	2010-11-12	[null]
35	39	Kagura	Mikazuchi	Engineer of airtime	280000	2002-10-14	[null]
36	40	Beth	Vanderwood	Engineer of airtime	280000	2003-07-16	[null]
37	41	Risley	Law	Engineer of airtime	280000	2008-08-18	[null]
38	42	Jellal	Fernandes	Engineer of airtime	280000	2009-03-16	[null]
39	43	Ultear	Milkovich	Video-engineer	290000	2006-01-13	[null]
40	44	Layla	Heartfilia	Projectionist	300000	2008-05-05	[null]

Figure 15 – List of employees which deleted from DBMS.

Figure 15 shows number of employees, who are still working.

3) Enter information about new employees into the database. Because of lack of staff.

CODE:

```
INSERT INTO employee(employee_id, First_name, Last_name, Job_name, salary, Hire_date)
```

VALUES (3, 'Milisa','Zaytseva','Subhead', '400000','28.01.2018'),
 (1,'Milinda','May', 'Director', '500000', '29.01.2018'),
 (4,'Irina','Fernandia', 'Videomaker','280000',' 27.01.2018'),
 (35,'Nigyar','Hatun','Engineer of repairing','250000','29.01.2018');

INSERT INTO technical_management(employee_id, tech_id, work_schedule, technical_issue)
VALUES (35, 669, '8 a.m. to 6 p.m. everyday', 'inspects&tests');

INSERT INTO work(employee_id, work_id, discription, deadline, quantity_of_works)
VALUES (35, 590, 'inspects & tests', '23.11.2020', 1),
 (1, 555, 'manages the television', '30.11.2020', 335),
 (3, 557, 'oversees the work', '27.11.2020', 27),
 (4, 558, 'material', '20.11.2020', 27);

INSERT INTO director(employee_id, shipper_id, director_id, work_schedule)
VALUES
 (1, 101, 111,'Flex'),
 (1, 102, 112,'Flex'),
 (1, 103, 113,'Flex'),
 (1, 104, 114,'Flex'),
 (1, 106, 115,'Flex'),
 (1, 107, 116,'Flex'),
 (1, 108, 117,'Flex'),
 (1, 109, 118,'Flex');

INSERT INTO media(employee_id, media_id, work_schedule, project)
VALUES (3, 333, '9-to-6 work schedule', 'oversees the work '),
 (4, 334, '9-to-6 work schedule', ' material ');

	employee_id [PK] numeric (12)	first_name character varying	last_name character varying (32)	job_name character varying (32)	salary integer	hire_date date	quit_date date
41	3	Milisa	Zaytseva	Subhead	400000	2018-01-28	[null]
42	1	Milinda	May	Director	500000	2018-01-29	[null]
43	4	Irina	Fernandia	Videomaker	280000	2018-01-27	[null]
44	35	Nigyar	Hatun	Engineer of repairing	250000	2018-01-29	[null]

Figure 16 – List of employees which recruited by the company.

Figure 16 shows information of freshmen.

4) Firing of staff at will be due to low salaries.

CODE:

UPDATE Employee

SET quit_date='12-November-2020' **WHERE** salary<250000;

	employee_id [PK] numeric (12)	first_name character varying (32)	last_name character varying (32)	job_name character varying (32)	salary integer	hire_date date	quit_date date
26	42	Jellal	Fernandes	Engineer of airtime	280000	2009-03-16	[null]
27	43	Ultear	Milkovich	Video-engineer	290000	2006-01-13	[null]
28	44	Layla	Heartfilia	Projectionist	300000	2008-05-05	[null]
29	3	Milisa	Zaytseva	Subhead	400000	2018-01-28	[null]
30	1	Milinda	May	Director	500000	2018-01-29	[null]
31	4	Irina	Fernandia	Videomaker	280000	2018-01-27	[null]
32	35	Nigyar	Hatun	Engineer of repairing	250000	2018-01-29	[null]
33	2	Mirajane	Strauss	Secretary	200000	2005-03-15	2020-11-12
34	23	Reedus	Jonah	Cleaner	100000	2013-03-13	2020-11-12
35	24	Vijeeter	Ecor	Cleaner	100000	2012-08-23	2020-11-12
36	25	Warren	Rocko	Cleaner	100000	2006-10-17	2020-11-12
37	26	Laki	Olietta	Driver	130000	2011-08-25	2020-11-12
38	27	Romeo	Conbolt	Driver	130000	2011-03-05	2020-11-12
39	28	Mest	Gryder	Driver	130000	2016-04-26	2020-11-12
40	29	Wan	Chanzi	Mechanic	210000	2006-04-05	2020-11-12
41	30	Joey	Fullborn	Locksmith	220000	2007-04-01	2020-11-12
42	31	Mickey	Chickentiger	Fitter	230000	2008-05-02	2020-11-12
43	34	Yuri	Dreyar	Energy-engineer	200000	2010-02-07	2020-11-12
44	36	Ren	Akatsuki	Engineer for service equipm...	220000	2012-08-09	2020-11-12

Figure 17 – List of employees which dismissed.

Figure 17 shows quantity of employees which dismissed.

5) Deletion of employees who have resigned or who have been dismissed at their own discretion.

CODE:

DELETE FROM work

WHERE employee_id BETWEEN 23 and 31;

DELETE FROM work

WHERE employee_id=34;

DELETE FROM work

WHERE employee_id =36;

DELETE FROM work

WHERE employee_id=2;

DELETE FROM commercial_service;

DELETE FROM worker_management;

DELETE FROM technical_management

WHERE employee_id=34;

DELETE FROM technical_management

WHERE employee_id=36;

DELETE FROM Employee

WHERE salary<250000;

	employee_id [PK] numeric (12)	first_name character varying (32)	last_name character varying (32)	job_name character varying (32)	salary integer	hire_date date	quit_date date
14	18	Wakaba	Mine	Head Editor	350000	2009-04-01	[null]
15	19	Alzack	Connell	Producer	300000	2008-08-02	[null]
16	20	Bisca	Connell	Producer	300000	2012-05-03	[null]
17	21	Max	Alors	Producer	300000	2016-02-16	[null]
18	22	Nab	Lasaro	Head of department	310000	2015-08-19	[null]
19	32	Mavis	Vermillion	Head engineer	280000	2006-02-03	[null]
20	33	Precht	Gaebolg	Lead engineer	250000	2009-01-03	[null]
21	37	Minerva	Orland	Video-engineer	270000	2018-07-06	[null]
22	38	Yukino	Agria	System-engineer	260000	2010-11-12	[null]
23	39	Kagura	Mikazuchi	Engineer of airtime	280000	2002-10-14	[null]
24	40	Beth	Vanderwood	Engineer of airtime	280000	2003-07-16	[null]
25	41	Risley	Law	Engineer of airtime	280000	2008-08-18	[null]
26	42	Jellal	Fernandes	Engineer of airtime	280000	2009-03-16	[null]
27	43	Ultear	Milkovich	Video-engineer	290000	2006-01-13	[null]
28	44	Layla	Heartfilia	Projectionist	300000	2008-05-05	[null]
29	3	Milisa	Zaytseva	Subhead	400000	2018-01-28	[null]
30	1	Milinda	May	Director	500000	2018-01-29	[null]
31	4	Irina	Fernandia	Videomaker	280000	2018-01-27	[null]
32	35	Nigyar	Hatun	Engineer of repairing	250000	2018-01-29	[null]

Figure 18 – List of employees, who are still working.

Figure 18 shows number of employees, who are still working.

6) Enter information about new employees into the database. Because of lack of staff.

CODE:

```
INSERT INTO employee(employee_id, First_name, Last_name, Job_name, salary, Hire_date)
VALUES (23, 'Armin','Arlert','Cleaner', '110000','16.11.2020'),
(2,'Adrian','Sousa', 'Secretary', '210000', '15.11.2020'),
(24,'Daisy','Johnson', 'Cleaner','110000','17.11.2020'),
(25,'Sky','John','Cleaner','110000','18.11.2020'),
(26,'Hurrem','Haseki','Driver','140000','18.11.2020'),
(27,'Nurbanu','Sultan','Driver','140000','18.11.2020'),
(28,'Hatidje ','Dinasty','Driver','140000','19.11.2020'),
(30,'Mihrimahe ','Hazretliri','Locksmith','230000','19.11.2020'),
(31,'Selim','Hazretli','Fitter','240000','17.11.2020'),
(34,'Mikasa','Akkerman','Energy-engineer','210000','20.11.2020'),
(36,'Levi','Akkerman','Engineer for service equipment','230000','21.11.2020'),
(29,'Eren','Jager','Mechanic','220000','22.11.2020');
```

```
INSERT INTO worker_management(employee_id, WM_id, work_schedule)
VALUES (22, 444, 'Mo-Fr from 9 a.m. to 6 p.m'),
(23, 445, 'We-Thu from 9 a.m. to 6 p.m'),
(24, 446, 'Fr-Sat from 9 a.m. to 6 p.m'),
(25, 447, 'Mon-Tue from 9 a.m. to 6 p.m'),
(26, 448, 'We-Thu from 9 a.m. to 6 p.m'),
(27, 449, 'Mo-Tue from 9 a.m. to 6 p.m'),
(28, 450, 'Fr-Sat from 9 a.m. to 6 p.m'),
(29, 451, 'Mo-Fr from 9 a.m. to 6 p.m'),
(30, 452, 'Mo-Fr from 9 a.m. to 6 p.m'),
```

(31, 453, 'Mo-Fr from 9 a.m. to 6 p.m');

INSERT INTO commercial_service(employee_id, comm_id, work_schedule, documents)

VALUES (2, 888, 'Mo-Fri from 8 a.m. to 6 p.m', 'emails&letters');

INSERT INTO technical_management(employee_id, tech_id, work_schedule, technical_issue)

VALUES (34, 668, '8 a.m. to 6 p.m. everyday', 'energy efficiency '),

(36, 670, '8 a.m. to 6 p.m. everyday', 'assists in installing ');

INSERT INTO work(employee_id, work_id, discription, deadline, quantity_of_works)

VALUES (2, 556, 'emails & letters', '30.11.2020', 50),

(23, 577, 'cleans the room', '24.11.2020', 1),

(24, 578, 'cleans the room', '24.11.2020', 1),

(25, 579, 'cleans the room', '24.11.2020', 1),

(26, 580, 'drives the car', '30.11.2020', 1),

(27, 581, 'drives the car', '30.11.2020', 1),

(28, 582, 'drives the car', '30.11.2020', 1),

(29, 583, 'inspects and repairs machinery', '30.11.2020', 1),

(30, 584, 'responsible for security systems', '30.11.2020', 1),

(31, 585, 'mechanical systems', '30.11.2020', 1),

(34, 589, 'energy efficiency', '23.11.2020', 1),

(36, 591, 'assists in installing', '23.11.2020', 1);

	employee_id [PK] numeric (12)	first_name character varying (32)	last_name character varying (32)	job_name character varying (32)	salary integer	hire_date date	quit_date date
26	42	Jellal	Fernandes	Engineer of airtime	280000	2009-03-16	[null]
27	43	Ultear	Milkovich	Video-engineer	290000	2006-01-13	[null]
28	44	Layla	Heartfilia	Projectionist	300000	2008-05-05	[null]
29	3	Milisa	Zaytseva	Subhead	400000	2018-01-28	[null]
30	1	Milinda	May	Director	500000	2018-01-29	[null]
31	4	Irina	Fernandia	Videomaker	280000	2018-01-27	[null]
32	35	Nigyar	Hatun	Engineer of repairing	250000	2018-01-29	[null]
33	23	Armin	Arlert	Cleaner	110000	2020-11-16	[null]
34	2	Adrian	Sousa	Secretary	210000	2020-11-15	[null]
35	24	Daisy	Johnson	Cleaner	110000	2020-11-17	[null]
36	25	Sky	John	Cleaner	110000	2020-11-18	[null]
37	26	Hurrem	Haseki	Driver	140000	2020-11-18	[null]
38	27	Nurbanu	Sultan	Driver	140000	2020-11-18	[null]
39	28	Hatidje	Dinasty	Driver	140000	2020-11-19	[null]
40	30	Mihrimahe	Hazretliri	Locksmith	230000	2020-11-19	[null]
41	31	Selim	Hazretli	Fitter	240000	2020-11-17	[null]
42	34	Mikasa	Akkerman	Energy-engineer	210000	2020-11-20	[null]
43	36	Levi	Akkerman	Engineer for service equipm...	230000	2020-11-21	[null]
44	29	Eren	Jager	Mechanic	220000	2020-11-22	[null]

Figure 19 – List of employees which recruited by the company.

Figure 19 shows information of freshmen.

6. Write at least 10 queries: using DISTINCT, conditions (<, >, =), OR, AND, BETWEEN, IN, LIKE, LENGHT, COUNT, MAX, MIN, SUM, AVG, INNER JOIN, LEFT JOIN,

RIGHT JOIN, FULL JOIN and etc. The queries should be coherent and complex.

1) An Order has been issued to provide information for the last year on the work of these departments: media, technical management and department of release and analysis. To see their work activity and personal information.

CODE:

SELECT

employee.first_name,employee.last_name,employee.hire_date,employee.salary,media.project,technical_management.Technical_issue,department_of_release_and_analysis.airtime

FROM Employee

FULL OUTER JOIN Media **ON** Employee.employee_id = Media.employee_id

FULL OUTER JOIN technical_management **ON** Employee.employee_id = technical_management.employee_id

FULL OUTER JOIN department_of_release_and_analysis **ON** Employee.employee_id = department_of_release_and_analysis.employee_id

WHERE hire_date **BETWEEN** '01-January-2000' **AND** '31-December-2020';

Figure 20 –List of employees.

Figure 20 shows result of query.

	first_name character varying (32)	last_name character varying (32)	hire_date date	salary integer	project character varying (32)	technical_issue character varying (32)	airtime character varying (32)
1	Kagura	Mikazuchi	2002-10-14	280000	[null]	[null]	sounds
2	Beth	Vanderwood	2003-07-16	280000	[null]	[null]	network connection
3	Risley	Law	2008-01-18	280000	[null]	[null]	video broadcast
4	Jellal	Fernandes	2009-03-16	280000	[null]	[null]	broadcasting shows
5	Mavis	Vermillion	2006-02-03	280000	[null]	the department	[null]
6	Adrian	Sousa	2020-11-15	210000	[null]	[null]	[null]
7	Nigyar	Hatun	2018-01-29	250000	[null]	inspects&tests	[null]
8	Layla	Heartfilia	2008-05-05	300000	projects movies	[null]	[null]
9	Milisa	Zaytseva	2018-01-28	400000	oversees the work	[null]	[null]
10	Mihrimahe	Hazretliri	2020-11-19	230000	[null]	[null]	[null]
11	Mikasa	Akkerman	2020-11-20	210000	[null]	energy efficiency	[null]
12	Hatidje	Dinasty	2020-11-19	140000	[null]	[null]	[null]
13	Milinda	May	2018-01-29	500000	[null]	[null]	[null]
14	Wendy	Marvell	2007-08-05	350000	[null]	[null]	[null]
15	Gajeel	Redfox	2010-04-19	250000	[null]	[null]	[null]
16	Precht	Gaebolg	2009-01-03	250000	[null]	oversees the commissioning	[null]
17	Gildarts	Clive	2015-05-06	290000	material for publication	[null]	[null]
18	Juvia	Lockser	2009-08-17	250000	[null]	[null]	[null]
19	Natsu	Dragneel	2006-04-05	350000	project illustrations	[null]	[null]
20	Levi	Akkerman	2020-11-21	230000	[null]	assists in installing	[null]
21	Cana	Alberona	2006-12-15	400000	[null]	[null]	[null]
22	Freed	Justine	2012-04-08	290000	material for publication	[null]	[null]
23	Nurbanu	Sultan	2020-11-18	140000	[null]	[null]	[null]
24	Armin	Arlert	2020-11-16	110000	[null]	[null]	[null]
25	Nab	Lasaro	2015-08-19	310000	[null]	[null]	[null]
26	Yukino	Agria	2001-11-12	260000	[null]	operating systems	[null]
27	Bisca	Connell	2012-05-03	300000	elements of a production	[null]	[null]
28	Wakaba	Mine	2009-04-01	350000	manages the team	[null]	[null]
29	Erza	Scarlet	2006-04-05	350000	[null]	[null]	[null]

30	Minerva	Orland	2018-07-06	270000	[null]	the installation	[null]
31	Eren	Jager	2020-11-22	220000	[null]	[null]	[null]
32	Lisanna	Strauss	2005-04-05	320000	projects movies	[null]	[null]
33	Elfman	Strauss	2005-04-05	320000	projects movies	[null]	[null]
34	Daisy	Johnson	2020-11-17	110000	[null]	[null]	[null]
35	Ultear	Milkovich	2006-01-13	290000	[null]	the maintenance	[null]
36	Gray	Fullbuster	2006-04-30	300000	management of the shoot day	[null]	[null]
37	Hurrem	Haseki	2020-11-18	140000	[null]	[null]	[null]
38	Macao	Conbolt	2007-07-25	300000	background scenery	[null]	[null]
39	Alzack	Connell	2008-08-02	300000	elements of a production	[null]	[null]
40	Max	Alors	2016-02-16	300000	elements of a production	[null]	[null]
41	Irina	Fernandia	2018-01-27	280000	material	[null]	[null]
42	Sky	John	2020-11-18	110000	[null]	[null]	[null]
43	Selim	Hazretli	2020-11-17	240000	[null]	[null]	[null]
44	Levy	McGarden	2016-12-05	290000	material for publication	[null]	[null]

2) Order to provide information on expenditure, maximum and minimum salary including all employees except the director for the purposes of annual statistics.

CODE:

```
SELECT SUM (salary) as Total_expenditure, MAX(salary) as Max_salary, MIN (salary) as Min_salary
FROM Employee
WHERE Job_name!='Director';
```

	total_expenditure bigint	max_salary integer	min_salary integer
1	11400000	400000	110000

Figure 21 – List of information of money.

Figure 21 shows result of query.

3) A report must be shown in alphabetical order for employees with a workload of 9 and accepted before 1 January 2010 or for employees with a workload of 1 and accepted after and including 1 January 2010 for workload comparison.

CODE:

```
SELECT employee.last_name, employee.first_name, employee.job_name, work.Discription ,
work.Deadline
FROM employee
INNER JOIN Work ON employee.employee_id=work.employee_id
WHERE (quantity_of_works=9 AND hire_date>'01-January-2010') OR (quantity_of_works=1
AND hire_date<='01-January-2010')
ORDER BY last_name, first_name;
```


	last_name character varying (32)	first_name character varying (32)	job_name character varying (32)	discription text	deadline date
1	Alors	Max	Producer	elements of a production	2020-11-19
2	Clive	Gildarts	Editor	material for publication	2020-11-23
3	Connell	Bisca	Producer	elements of a production	2020-11-19
4	Justine	Freed	Editor	material for publication	2020-11-23
5	Lasaro	Nab	Head of department	controls the team	2020-11-30
6	McGarden	Levy	Editor	material for publication	2020-11-23
7	Milkovich	Ultear	Video-engineer	the maintenance	2020-11-23

Figure 22 – List of employees which shows workload comparison.

Figure 22 shows result of query.

4) The director requires a list of the job vacancy and the number of suppliers and their goods to be shown. In order to know the budget and expenditure of television.

CODE:

```
SELECT COUNT(DISTINCT employee.job_name) as count_job, COUNT(DISTINCT
shipper.name_company) as count_shipper, COUNT(DISTINCT shipper.products) as
count_product
FROM employee
FULL JOIN shipper ON employee.employee_id=shipper.shipper_id;
```

	count_job bigint	count_shipper bigint	count_product bigint
1	30	7	8

Figure 23 – List of information which shows counter.

Figure 23 shows result of query.

5) An order has come in which requires a complete list of employees and the type of work activity which shows the workload.

CODE:

```
SELECT employee.last_name, employee.first_name, employee.job_name,
Administration.documents, media.project,
Commercial_service.documents,
Technical_management.Technical_issue, department_of_release_and_analysis.airtime,
Work.Discription
FROM employee
FULL OUTER JOIN Media ON Employee.employee_id = Media.employee_id
FULL OUTER JOIN technical_management ON Employee.employee_id =
technical_management.employee_id
FULL OUTER JOIN department_of_release_and_analysis ON Employee.employee_id =
department_of_release_and_analysis.employee_id
FULL OUTER JOIN Administration ON Employee.employee_id = Administration.employee_id
FULL OUTER JOIN Commercial_service ON Employee.employee_id =
Commercial_service.employee_id
```


FULL OUTER JOIN Work ON Employee.employee_id = Work.employee_id;

	first_name character varying (32)	last_name character varying (32)	job_name character varying (32)	documents character varying (32)	project character varying (32)	documents character varying (32)	technical_issue character varying (32)	airtime character varying (32)
1	Adrian	Sousa	Secretary	[null]	[null]	emails&letters	[null]	[null]
2	Kagura	Mikazuchi	Engineer of airtime	[null]	[null]	[null]	[null]	sounds
3	Nurbanu	Sultan	Driver	[null]	[null]	[null]	[null]	[null]
4	Armin	Arlert	Cleaner	[null]	[null]	[null]	[null]	[null]
5	Nab	Lasaro	Head of department	[null]	[null]	[null]	[null]	[null]
6	Risley	Law	Engineer of airtime	[null]	[null]	[null]	[null]	video broadcast
7	Mavis	Vermillion	Head engineer	[null]	[null]	[null]	the department	[null]
8	Nigyar	Hatun	Engineer of repairing	[null]	[null]	[null]	inspects&tests	[null]
9	Yukino	Agria	System-engineer	[null]	[null]	[null]	operating systems	[null]
10	Bisca	Connell	Producer	[null]	elements of a pro...	[null]	[null]	[null]
11	Layla	Heartfilia	Projectionist	[null]	projects movies	[null]	[null]	[null]
12	Milisa	Zaytseva	Subhead	[null]	oversees the work	[null]	[null]	[null]
13	Mihrimahe	Hazretliri	Locksmith	[null]	[null]	[null]	[null]	[null]
14	Wakaba	Mine	Head Editor	[null]	manages the team	[null]	[null]	[null]
15	Erza	Scarlet	Lawyer	legal documents an...	[null]	[null]	[null]	[null]
16	Erza	Scarlet	Lawyer	legal documents an...	[null]	[null]	[null]	[null]
17	Mikasa	Akkerman	Energy-engineer	[null]	[null]	[null]	energy efficiency	[null]
18	Hatidje	Dinasty	Driver	[null]	[null]	[null]	[null]	[null]
19	Milinda	May	Director	[null]	[null]	[null]	[null]	[null]
20	Beth	Vanderwood	Engineer of airtime	[null]	[null]	[null]	[null]	network connection
21	Wendy	Marvell	Economist	papers	[null]	[null]	[null]	[null]
22	Wendy	Marvell	Economist	papers	[null]	[null]	[null]	[null]
23	Minerva	Orland	Video-engineer	[null]	[null]	[null]	the installation	[null]
24	Eren	Jager	Mechanic	[null]	[null]	[null]	[null]	[null]
25	Lisanna	Strauss	Projectionist	[null]	projects movies	[null]	[null]	[null]
26	Elfman	Strauss	Projectionist	[null]	projects movies	[null]	[null]	[null]
27	Daisy	Johnson	Cleaner	[null]	[null]	[null]	[null]	[null]
28	Ultear	Milkovich	Video-engineer	[null]	[null]	[null]	the maintenance	[null]
29	Gajeel	Redfox	Axeman	certificates	[null]	[null]	[null]	[null]
30	Gajeel	Redfox	Axeman	certificates	[null]	[null]	[null]	[null]
31	Precht	Gaebolg	Lead engineer	[null]	[null]	[null]	oversees the co...	[null]
32	Gray	Fullbuster	Head producer	[null]	management of th...	[null]	[null]	[null]
33	Hurrem	Haseki	Driver	[null]	[null]	[null]	[null]	[null]
34	Gildarts	Clive	Editor	[null]	material for public...	[null]	[null]	[null]
35	Macao	Conbolt	Decorator	[null]	background scen...	[null]	[null]	[null]
36	Alzack	Connell	Producer	[null]	elements of a pro...	[null]	[null]	[null]
37	Max	Alors	Producer	[null]	elements of a pro...	[null]	[null]	[null]
38	Juvia	Lockser	Bookkeeper	incoming invoices	[null]	[null]	[null]	[null]
39	Juvia	Lockser	Bookkeeper	incoming invoices	[null]	[null]	[null]	[null]
40	Natsu	Dragneel	Grafic Designer	[null]	project illustrations	[null]	[null]	[null]
41	Irina	Fernandia	Videomaker	[null]	material	[null]	[null]	[null]
42	Sky	John	Cleaner	[null]	[null]	[null]	[null]	[null]
43	Levi	Akkerman	Engineer for service eq...	[null]	[null]	[null]	assists in installi...	[null]
44	Selim	Hazretli	Fitter	[null]	[null]	[null]	[null]	[null]
45	Levy	McGarden	Editor	[null]	material for public...	[null]	[null]	[null]
46	Cana	Alberona	Accountant	financial transactions	[null]	[null]	[null]	[null]
47	Cana	Alberona	Accountant	financial transactions	[null]	[null]	[null]	[null]
48	Freed	Justine	Editor	[null]	material for public...	[null]	[null]	[null]
49	Jellal	Fernandes	Engineer of airtime	[null]	[null]	[null]	[null]	broadcasting shows

Figure 24 – List of work information for employees.

Figure 24 shows result of query.

6) The director requires the id, name, surname and job name of employees, whose salary is 250000, because he wants to increase their salaries.

CODE:

```
SELECT employee_id, first_name, last_name, job_name
FROM employee
WHERE salary IN (250000);
```

	employee_id [PK] numeric (12)	first_name character varying (32)	last_name character varying (32)	job_name character varying (32)
1	8	Gajeel	Redfox	Axeman
2	9	Juvia	Lockser	Bookkeeper
3	33	Precht	Gaebolg	Lead engineer

Figure 25 – List of work information of employees.

Figure 25 shows result of query.

7) Order to provide information on average salary including all employees except the director for the purposes of annual statistics.

CODE:

```
SELECT AVG(salary) as average_salary
FROM Employee
WHERE Job_name != 'Director';
```

	average_salary numeric
1	262325.581395348837

Figure 26 – List of work information of average salary.

Figure 26 shows result of query.

8) The secretary needs to find all the details of the employees for the job name not started with the letter 'E' and arranged the list as the most recent comes first, then by name in order.

CODE:

```
SELECT * FROM employee
WHERE job_name NOT LIKE 'E%'
ORDER BY hire_date DESC, first_name;
```

	employee_id [PK] numeric (12)	first_name character varying (32)	last_name character varying (32)	job_name character varying (32)	salary integer	hire_date date	quit_date date
1	29	Eren	Jager	Mechanic	220000	2020-11-22	[null]
2	28	Hatidje	Dinasty	Driver	140000	2020-11-19	[null]
3	30	Mihrimahe	Hazretliri	Locksmith	230000	2020-11-19	[null]
4	26	Hurrem	Haseki	Driver	140000	2020-11-18	[null]
5	27	Nurbanu	Sultan	Driver	140000	2020-11-18	[null]
6	25	Sky	John	Cleaner	110000	2020-11-18	[null]
7	24	Daisy	Johnson	Cleaner	110000	2020-11-17	[null]
8	31	Selim	Hazretli	Fitter	240000	2020-11-17	[null]
9	23	Armin	Arlert	Cleaner	110000	2020-11-16	[null]
10	2	Adrian	Sousa	Secretary	210000	2020-11-15	[null]
11	37	Minerva	Orland	Video-engineer	270000	2018-07-06	[null]
12	1	Milinda	May	Director	500000	2018-01-29	[null]
13	3	Milisa	Zaytseva	Subhead	400000	2018-01-28	[null]
14	4	Irina	Fernandia	Videomaker	280000	2018-01-27	[null]
15	21	Max	Alors	Producer	300000	2016-02-16	[null]
16	22	Nab	Lasaro	Head of department	310000	2015-08-19	[null]
17	20	Bisca	Connell	Producer	300000	2012-05-03	[null]
18	8	Gajeel	Redfox	Axeman	250000	2010-04-19	[null]
19	9	Juvia	Lockser	Bookkeeper	250000	2009-08-17	[null]
20	18	Wakaba	Mine	Head Editor	350000	2009-04-01	[null]
21	33	Precht	Gaebolg	Lead engineer	250000	2009-01-03	[null]
22	19	Alzack	Connell	Producer	300000	2008-08-02	[null]
23	44	Layla	Heartfilia	Projectionist	300000	2008-05-05	[null]
24	17	Macao	Conbolt	Decorator	300000	2007-07-25	[null]
25	11	Cana	Alberona	Accountant	400000	2006-12-15	[null]
26	7	Gray	Fullbuster	Head producer	300000	2006-04-30	[null]
27	6	Erza	Scarlet	Lawyer	350000	2006-04-05	[null]
28	5	Natsu	Dragneel	Grafic Designer	350000	2006-04-05	[null]
29	32	Mavis	Vermillion	Head engineer	280000	2006-02-03	[null]
30	43	Ultear	Milkovich	Video-engineer	290000	2006-01-13	[null]
31	12	Elfman	Strauss	Projectionist	320000	2005-04-05	[null]
32	13	Lisanna	Strauss	Projectionist	320000	2005-04-05	[null]
33	38	Yukino	Agria	System-engineer	260000	2001-11-12	[null]

Figure 27 – List of work information of employees which name is not started by “E”.

Figure 27 shows result of query.

9) The director wants to retrieve the id, first name, last name, job name and quantity of work of all the employees, whose salary is less than 260000 and ordered by first name of employees.

CODE:

```
SELECT      employee.employee_id,      employee.first_name,      employee.last_name,
work.quantity_of_works
FROM employee
LEFT OUTER JOIN work ON employee.employee_id = work.employee_id
```

WHERE salary < 260000
ORDER BY employee.first_name ASC;

	employee_id numeric (12)	first_name character varying (32)	last_name character varying (32)	quantity_of_works integer
1	2	Adrian	Sousa	50
2	23	Armin	Arlert	1
3	24	Daisy	Johnson	1
4	29	Eren	Jager	1
5	8	Gajeel	Redfox	43
6	28	Hatidje	Dinasty	1
7	26	Hurrem	Haseki	1
8	9	Juvia	Lockser	27
9	36	Levi	Akkerman	1
10	30	Mihrimahe	Hazretliri	1
11	34	Mikasa	Akkerman	1
12	35	Nigyar	Hatun	1
13	27	Nurbanu	Sultan	1
14	33	Precht	Gaebolg	12
15	31	Selim	Hazretli	1
16	25	Sky	John	1

Figure 28 – List of work information of employee which salary is less than 260000.

Figure 28 shows result of query.

10) The media department needs to retrieve the name of company, quality and dubbing of products, whose length of name is more than 10, because media is going to make the advertisement.

CODE:

SELECT name_company, quality, dubbing
FROM shipper
WHERE LENGTH(products) > 10;

	name_company character varying (32)	products character varying (32)	quality character varying (32)	dubbing character varying (32)
1	Disney	The Lion King 2	Full HD	English
2	Marvel Studios	The Avengers	Ultra HD	English
3	Nurtas Production	Bride Sabina 2	Full HD	Kazakh

Figure 29 – List of work information of shippers.

Figure 29 shows result of query.

7. Write at least 5 subqueries: single-row, multiple-row and multiple-column subqueries, and etc.;

1) The secretary wants to retrieve the information (id of employee, first name, last name, job name and salary) about employees, whose salary is more than average salary of all employees.

CODE:

SELECT employee_id, first_name, last_name, job_name, salary

FROM employee

WHERE salary > (SELECT AVG(salary) FROM employee);

	employee_id [PK] numeric (12)	first_name character varying (32)	last_name character varying (32)	job_name character varying (32)	salary integer
1	5	Natsu	Dragneel	Grafic Designer	350000
2	6	Erza	Scarlet	Lawyer	350000
3	7	Gray	Fullbuster	Head producer	300000
4	10	Wendy	Marvell	Economist	350000
5	11	Cana	Alberona	Accountant	400000
6	12	Elfman	Strauss	Projectionist	320000
7	13	Lisanna	Strauss	Projectionist	320000
8	14	Levy	McGarden	Editor	290000
9	15	Gildarts	Clive	Editor	290000
10	16	Freed	Justine	Editor	290000
11	17	Macao	Conbolt	Decorator	300000
12	18	Wakaba	Mine	Head Editor	350000
13	19	Alzack	Connell	Producer	300000
14	20	Bisca	Connell	Producer	300000
15	21	Max	Alors	Producer	300000
16	22	Nab	Lasaro	Head of department	310000
17	32	Mavis	Vermillion	Head engineer	280000
18	39	Kagura	Mikazuchi	Engineer of airtime	280000
19	40	Beth	Vanderwood	Engineer of airtime	280000
20	41	Risley	Law	Engineer of airtime	280000
21	42	Jellal	Fernandes	Engineer of airtime	280000
22	43	Ultear	Milkovich	Video-engineer	290000
23	44	Layla	Heartfilia	Projectionist	300000
24	3	Milisa	Zaytseva	Subhead	400000
25	1	Milinda	May	Director	500000
26	4	Irina	Fernandia	Videomaker	280000

Figure 30 – List of work information of employees which salary is more than average salary of all employees.

Figure 30 shows result of query.

2) The administration department should find out the products of shippers, whose price is more than 700000, because they calculate costs.

CODE:

SELECT shipper_id, name_company, products, quality, dubbing

FROM shipper

WHERE shipper_id IN (SELECT shipper_id FROM shipper WHERE price > 700000);

	shipper_id [PK] numeric (12)	name_company character varying (32)	products character varying (32)	quality character varying (32)	dubbing character varying (32)
1	105	Paramount Pictures	Titanic	Quad HD	Russian
2	106	Marvel Studios	The Avengers	Ultra HD	English

Figure 31 – List of information of products where price is more than 700000.

Figure 31 shows result of query.

3) After calculating all costs, director with administration department decided to not buy movies, whose price is more than 700000.

CODE:

DELETE FROM director

WHERE shipper_id IN (SELECT shipper_id FROM shipper WHERE price > 700000);

DELETE FROM administration

WHERE shipper_id IN (SELECT shipper_id FROM shipper WHERE price > 700000);

DELETE FROM shipper

WHERE price IN (SELECT price FROM shipper WHERE price > 700000);

	shipper_id [PK] numeric (12)	name_company character varying (32)	products character varying (32)	price integer	quality character varying (32)	dubbing character varying (32)
1	101	Netflix	Bird box	650000	Full HD	English
2	102	Disney	Aladdin	680000	Ultra HD	English
3	103	20th Century Fox	Deadpool	700000	Ultra HD	Russian
4	104	Kazakhfilm	Tomiris	510000	HD	Kazakh
5	107	Nurtas Production	Bride Sabina 2	540000	Full HD	Kazakh

Figure 32 – List of information shipper which was dismissed.

Figure 32 shows result of query.

4) The director was very merciful, that's why he decided to increase the salaries of workers by 15%, whose salary is between 90000 and 210000.

CODE:

UPDATE employee

*SET salary = salary + salary * 0.15*

WHERE salary IN (SELECT salary FROM employee WHERE salary BETWEEN 90000 AND 210000);

	employee_id [PK] numeric (12)	first_name character varying (32)	last_name character varying (32)	job_name character varying (32)	salary integer
36	2	Mirajane	Strauss	Secretary	230000
37	23	Reedus	Jonah	Cleaner	115000
38	24	Vijeeter	Ecor	Cleaner	115000
39	25	Warren	Rocko	Cleaner	115000
40	26	Laki	Olietta	Driver	149500
41	27	Romeo	Conbolt	Driver	149500
42	28	Mest	Gryder	Driver	149500
43	29	Wan	Chanzi	Mechanic	241500
44	34	Yuri	Dreyar	Energy-engineer	230000

Figure 33 – List of information of employees which salary is increased.

Figure 33 shows result of query.

5) The organization made a decision to dismiss from department of release and analysis a worker named Risley, because he was lazy and didn't work.

CODE:

DELETE FROM department_of_release_and_analysis

WHERE employee_id = ANY (SELECT employee_id FROM employee WHERE first_name = 'Risley');






	 employee_id numeric (12) 	r_a_id [PK] numeric (12) 	work_schedule character varying (32) 	airtime character varying (32) 
1	39	777	8 hours per day	sounds
2	40	778	8 hours per day	network connection
3	42	780	8 hours per day	broadcasting shows

Figure 34 – List of information employee which was dismissed.

Figure 34 shows result of query.

APPENDIX A

This is pseudocode of “employee” table which shows input data.

Employee

PK: employee_id

FK:

```
If writing employee_id then (employee_id) = “DECIMAL(12)”
else show error message
  If writing First_Name then (First_Name) = “VARCHAR(32)”
else show error message
    If writing Last_Name then (Last_Name) = “VARCHAR(32)”
else show error message
      If writing job_name then (job_name) = “VARCHAR(32)”
else show error message
        If writing salary then (salary) = “INT”
else show error message
          If writing hire_date then (hire_date) = “DATE”
else show error message
            If writing quit_date then (quit_date) = “DATE”
else show error message
```

This is pseudocode of “Shipper” table which shows input data.

Shipper

PK: shipper_id

FK:

```
If writing shipper_id then (shipper_id) = “DECIMAL(12)”
else show error message
  If writing name_company then (name_company) = “VARCHAR(32)”
else show error message
    If writing products then (products) = “VARCHAR(32)”
else show error message
      If writing price then (price) = “INT”
else show error message
        If writing quality then (salary) = “VARCHAR(32)”
else show error message
          If writing dubbing then (dubbing) = “VARCHAR(32)”
else show error message
```

This is pseudocode of “Director” table which shows input data.

Director

PK: director_id

FK: shipper_id, employee_id

```
If writing employee_id then (employee_id) = “DECIMAL(12)”
else show error message
  If writing shipper_id then (shipper_id) = “DECIMAL(12)”
else show error message
```


If writing director_id then (director_id) = "DECIMAL(12)"
else show error message
 If writing work_schedule then (work_schedule) = "VARCHAR(32)"
else show error message

.This is pseudocode of "Administration" table which shows input data.

Administration

PK: admin_id
FK: shipper_id, employee_id

 If writing employee_id then (employee_id) = "DECIMAL(12)"
else show error message
 If writing shipper_id then (shipper_id) = "DECIMAL(12)"
else show error message
 If writing admin_id then (admin_id) = "DECIMAL(12)"
else show error message
 If writing work_schedule then (work_schedule) = "VARCHAR(32)"
else show error message
 If writing documents then (documents) = "VARCHAR(32)"
else show error message

.This is pseudocode of "Media" table which shows input data.

Media

PK: media_id
FK: employee_id

 If writing employee_id then (employee_id) = "DECIMAL(12)"
else show error message
 If writing media_id then (media_id) = "DECIMAL(12)"
else show error message
 If writing work_schedule then (work_schedule) = "VARCHAR(32)"
else show error message
 If writing project then (project) = "VARCHAR(32)"
else show error message

.This is pseudocode of "Worker Management" table which shows input data.

Worker Management

PK: WM_id
FK: employee_id

 If writing employee_id then (employee_id) = "DECIMAL(12)"
else show error message
 If writing WM_id then (WM_id) = "DECIMAL(12)"
else show error message
 If writing work_schedule then (work_schedule) = "VARCHAR(32)"
else show error message

This is pseudocode of “Department of release and analysis” table which shows input data.

Department of release and analysis

PK: r_a_id

FK: employee_id

If writing employee_id then (employee_id) = “DECIMAL(12)”
else show error message

If writing r_a_id then (r_a_id) = “DECIMAL(12)”
else show error message

If writing work_schedule then (work_schedule) = “VARCHAR(32)”
else show error message

If writing airtime then (airtime) = “VARCHAR(32)”
else show error message

This is pseudocode of “Commercial service” table which shows input data.

Commercial service

PK: comm_id

FK: employee_id

If writing employee_id then (employee_id) = “DECIMAL(12)”
else show error message

If writing comm_id then (comm_id) = “DECIMAL(12)”
else show error message

If writing work_schedule then (work_schedule) = “VARCHAR(32)”
else show error message

If writing documents then (documents) = “VARCHAR(32)”
else show error message

This is pseudocode of “Technical Management” table which shows input data.

Technical Management

PK: tech_id

FK: employee_id

If writing employee_id then (employee_id) = “DECIMAL(12)”
else show error message

If writing tech_id then (tech_id) = “DECIMAL(12)”
else show error message

If writing work_schedule then (work_schedule) = “VARCHAR(32)”
else show error message

If writing technical_issue then (technical_issue) = “VARCHAR(32)”
else show error message

This is pseudocode of “Work” table which shows input data.

Work

PK: work_id

FK: employee_id

```
    If writing employee_id then (employee_id) = "DECIMAL(12)"
else show error message
    If writing work_id then (work_id) = "DECIMAL(12)"
else show error message
    If writing Discription then (Discription) = "Text"
else show error message
    If writing quantity_of_works then (quantity_of_works) = "INT"
else show error message
    If writing deadline then (deadline) = "DATE"
else show error message
```

REPORT

Last name/First name	Description
Shynybayeva Adilya	<p>I was responsible for the idea, documentation, appendix and creation of the ERD diagram and business rules, moreover I completed exercises 2 to 5 and half of 6. I suggested taking a project about television, because I was familiar with the system of this organization. My prototype for business rules and the ERD diagram was the “Saryarka” TV channel. We created our own unique TV channel “REYDI”, which not only broadcasts TV productions, but also films and soap operas for teenagers. I developed a logo for the channel, and Merey and I came up with a name for our channel. My chart consists of 10 tables. The main table there is an “employee” which is connected to 6 departments and a director. This means that the “employee” stored personal information about each employee in the table. Each department has individual information about the work and the employee's schedule, and there is also a table that details the workload of each employee. “Shipper” is linked to tables such as the “director” and the “administration” (administration department), because suppliers make arrangements with directors, so contracts and payment are made through the administration. When I wrote my queries, I made an emphasis on equality between employees. I also displayed what measures could be taken for a serious mistake (dismissal). I tried to make each request complex in syntax and loaded with meaning.</p>
Orazaly Merey	<p>I would like to start this reflective report by saying that I began my project refreshing understanding of database management systems. Exactly in our project, I have taken charge of the inserting data to tables using pgAdmin4. Also, I have described the purpose, aim and description of the database in the 1st task. In addition, I have completed half of the 6th task and 7th task, that are related to JOIN operators, single-row, multiple-row and multiple-column subqueries, queries using distinct, conditions and so on.</p> <p>From creative part, I made a logo of our project, that describes the television, because TV remote was used instead the letter "i". While Adilya was responsible for documenting work, I have prepared the presentation for our project. From this final project, I have learned just how time consuming it can be to access large databases. I also learned how important it is to discuss ideas with others who are knowledgeable in the field. Undoubtedly, the experience of composing own project was priceless.</p>

CONCLUSION

To sum up, a database is a far more effective way to hold and organize data than papers. The role of these databases is very crucial for each organization that wants to keep a really good control all information about employees. Nowadays, every organization have to manages staff on a really good level as the staff has definitely the greatest role of growing up a company. Often a group of people are engaged in such projects and one of the basic requirements is a security of the system, especially the storage of data and all of the operations that will be carried out. In the future, some additional functions could be realized and added into the database code making it much more reliable and flexible, for instance, make changes in structure of department, add more information about employees, connect our television to others.

In this project we have completed accurate database about television which is easy to access and store information. The database corresponds to user requirements and it will store all the pertinent information about employees. Of course, it's not ideal and has some weaknesses or limitations, such as small data, wrong ordering, but as we aren't professional programmers, who works with database. However, for the first time, we did our best to create this project.

Moreover, the project work improved our hard skills in SQL using theoretical knowledge from lectures. We have practiced with DDL, DML statements, JOIN operators, subqueries. As a result, we learned to completely create our own database. Also, developing our soft skills, we noticed that working in pairs can increase the speed of work.

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