3) Подготовить DDL скрипты и создать свою базу в СУБД.

**create** **schema** **if** **not** **exists** pm

**create** **table** **if** **not** **exists** pm.project (

project\_id **integer** **not** **null** **primary** **key**,

project\_name **varchar**(128) **not** **null**,

project\_priority **integer** **not** **null**,

project\_status **integer** **not** **null**

)

**create** **table** **if** **not** **exists** pm.users\_team (

cmd\_id **integer** **primary** **key**,

cmd\_name **varchar**(128),

project\_id **integer**,

**foreign** **key** (project\_id) **references** pm.project (project\_id),

team\_lid **varchar**(128) **not** **null**,

users\_cnt **integer** **not** **null**

)

**create** **table** **if** **not** **exists** pm.**user** (

user\_id **integer** **not** **null** **primary** **key**,

user\_name **varchar**(128) **not** **null**,

cmd\_id **integer**,

**foreign** **key** (cmd\_id) **references** pm.users\_team (cmd\_id)

)

**create** **table** **if** **not** **exists** pm.project\_user (

user\_id **integer** **primary** **key**,

**foreign** **key** (user\_id) **references** pm.**user** (user\_id),

project\_id **integer**,

**foreign** **key** (project\_id) **references** pm.project (project\_id)

)

**create** **table** **if** **not** **exists** pm.project\_materials (

project\_id **integer** **primary** **key**,

**foreign** **key** (project\_id) **references** pm.project (project\_id),

project\_disc **varchar**(512) **not** **null**,

project\_doc **varchar**(512) **not** **null**

)

**create** **table** **if** **not** **exists** pm.project\_changes (

project\_id **integer** **primary** **key**,

**foreign** **key** (project\_id) **references** pm.project (project\_id),

user\_id **integer**,

**foreign** **key** (user\_id) **references** pm.**user** (user\_id),

last\_chng\_time **date** **not** **null**

)

**create** **table** **if** **not** **exists** pm.project\_deadlines (

project\_id **integer** **primary** **key**,

**foreign** **key** (project\_id) **references** pm.project (project\_id),

start\_date **date** **not** **null**,

deadline\_date **date**

)

**create** **table** **if** **not** **exists** pm.used\_systems (

project\_id **integer** **primary** **key**,

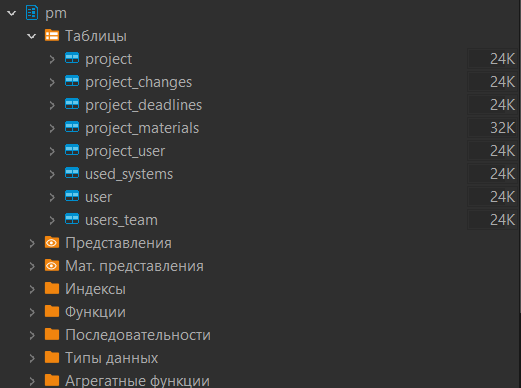
**foreign** **key** (project\_id) **references** pm.project (project\_id),

main\_language **varchar**(128) **not** **null**,

add\_language **varchar**(128),

add\_systems **varchar**(128)

)



4) Наполнить созданную базу данными, ~10 записей в каждой таблице. По крайней мере по 1 строке в каждой таблице должно быть добавлено с использованием INSERT.

**insert** **into** pm.project (project\_id, project\_name, project\_priority, project\_status)

**values**

(0, '"Квантория"', 5, 0),

(1, '"Цифровой переворот"', 4, 0),

(2, '"Интеллектуальный прорыв"', 2, 1),

(3, '"Оптимизация техпроцессов"', 9, 3),

(4, '"Платформа инноваций"', 1, 1),

(5, '"Кибербезопасность+"', 0, 2),

(6, '"Интегральные решения"', 6, 1),

(7, '"Приложения будущего"', 7, 0),

(8, '"Автоматизированные системы"', 8, 2),

(9, '"Нейронные сети для анализа данных"', 3, 0)

**insert** **into** pm.users\_team (cmd\_id, cmd\_name, project\_id, team\_lid, users\_cnt) **values**

(0, 'ПКЛПО', 9, 'Екатерина Иванова', 3),

(1, **null**, 3, 'Александр Федоров', 2)

**insert** **into** pm.**user** (user\_id, user\_name, cmd\_id) **values**

(0, 'Андрей Беляков', **null**),

(1, 'Екатерина Иванова', 0),

(2, 'Владимир Смирнов', 0),

(3, 'Ольга Ковалева', 0),

(4, 'Денис Петров', **null**),

(5, 'Марина Сергеева', **null**),

(6, 'Игорь Морозов', 1),

(7, 'Татьяна Павлова', **null**),

(8, 'Александр Федоров', 1),

(9, 'Наталья Шестакова', **null**)

**insert** **into** pm.project\_user (user\_id, project\_id) **values**

(0, 2),

(1, 9),

(2, 9),

(3, 9),

(4, 4),

(5, 1),

(6, 3),

(7, 3),

(8, 3),

(9, 4)

**insert** **into** pm.project\_materials (project\_id, project\_disc, project\_doc) **values**

(0, 'https://jija.com/project0', 'https://docs.google.com/project0'),

(1, 'https://jija.com/project0', 'https://docs.google.com/project1'),

(2, 'https://jija.com/project2', 'https://docs.google.com/project2'),

(3, 'https://jija.com/project3', 'https://docs.google.com/project3'),

(4, 'https://jija.com/project4', 'https://docs.google.com/project4'),

(5, 'https://jija.com/project5', 'https://docs.google.com/project5'),

(6, 'https://jija.com/project6', 'https://docs.google.com/project6'),

(7, 'https://jija.com/project7', 'https://docs.google.com/project7'),

(8, 'https://jija.com/project8', 'https://docs.google.com/project8'),

(9, 'https://jija.com/project9', 'https://docs.google.com/project9')

**insert** **into** pm.project\_changes (project\_id, user\_id, last\_chng\_time) **values**

(0, 2, '2023-01-01'),

(1, 5, '2023-02-01'),

(2, 0, '2023-01-11'),

(3, 7, '2023-03-03'),

(4, 9, '2022-11-01'),

(5, 5, '2023-01-23'),

(6, 5, '2023-02-28'),

(7, 4, '2023-04-03'),

(8, 1, '2023-04-11'),

(9, 3, '2023-05-24')

**insert** **into** pm.project\_deadlines (project\_id, start\_date, deadline\_date) **values**

(0, '2022-01-01', '2024-01-01'),

(2, '2022-02-01', **null**),

(3, '2022-03-01', **null**),

(4, '2022-04-01', **null**),

(5, '2022-05-01', '2023-12-01'),

(6, '2022-06-01', '2024-12-01'),

(7, '2022-07-01', '2024-04-01'),

(8, '2022-08-01', '2024-06-06'),

(9, '2022-09-01', '2023-07-01')

**insert** **into** pm.used\_systems (project\_id, main\_language, add\_language, add\_systems)

**values**

(0, 'C#', 'C++', 'Azure'),

(1, 'C++', **null**, 'GitLab'),

(2, 'C++', **null**, **null**),

(3, 'Python', **null**, **null**),

(4, 'GO', 'Pyhon', **null**),

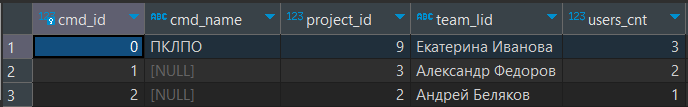
(5, 'Rock', 'C++', 'Aboba'),

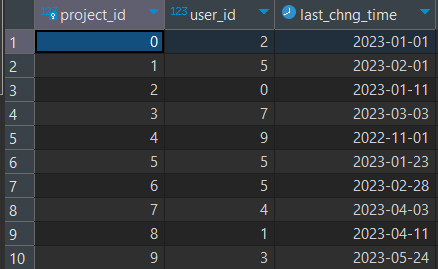
(6, 'Ruby', 'Java', 'GitLab'),

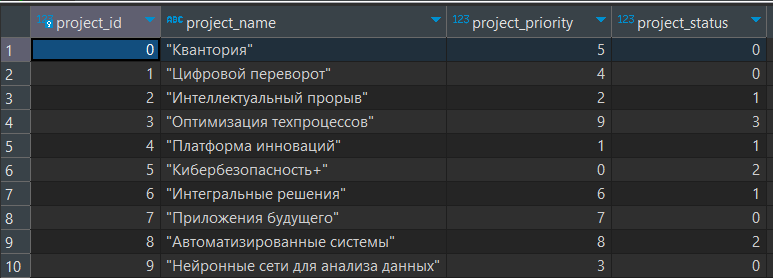
(7, 'C++', 'C#', 'Azure'),

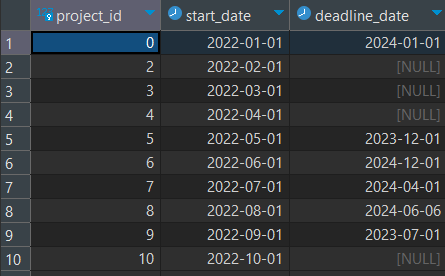
(8, 'C#', **null**, 'GitLab'),

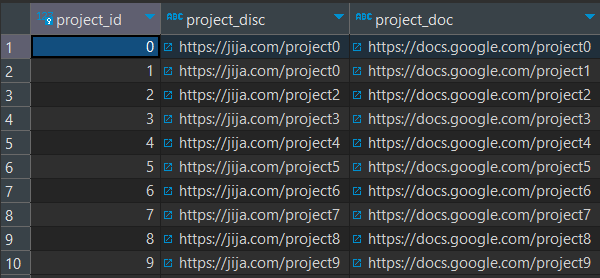
(9, 'C#', **null**, **null**)

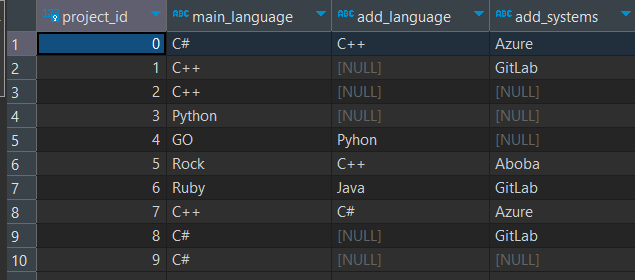


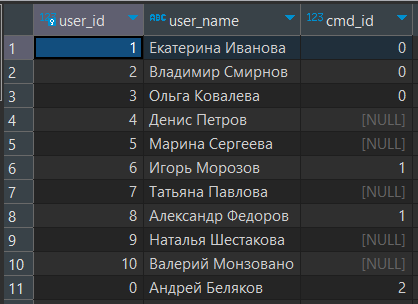












5) Написать не менее 10 INSERT, SELECT, UPDATE, DELETE запросов. Загуглить, что такое CRUD-запросы. Найти соответствие

**select** \* **from** pm.**user**

**select** \* **from** pm.project\_changes

**order** **by** pm.project\_changes.last\_chng\_time

**insert** **into** pm.**user** (user\_id, user\_name, cmd\_id) **values**

(10, 'Валерий Монзовано', **null**)

**insert** **into** pm.project\_user (user\_id, project\_id) **values**

(10, 4)

**delete** **from** pm.project

**where** pm.project.project\_status = 4

**update** pm.**user**

**set** cmd\_id = 2

**where** user\_id = 0

**insert** **into** pm.users\_team (cmd\_id, cmd\_name, project\_id, team\_lid, users\_cnt) **values**

(2, **null**, (**select** project\_id **from** pm.project\_user **where** pm.project\_user.user\_id = 0),

(**select** user\_name **from** pm.**user** **where** pm.**user**.user\_id = 0), 1)

**update** pm.project\_user

**set** project\_id = 0

**where** project\_id = 4

**select** user\_name **from** pm.**user**

**where** cmd\_id **notnull**

**select** cmd\_name **from** pm.users\_team

**where** cmd\_name **notnull**

6) Написать осмысленные SELECT запросы

**select** project\_name **as** **name**, project\_status **as** status **from** pm.project p

**group** **by** project\_status, project\_name **having** project\_status >= 1

**select** user\_name **as** **name**,

(**select** cmd\_name **from** users\_team ut

**where** ut.cmd\_id = u.cmd\_id) **as** command\_name **from** pm.**user** u

**where** cmd\_id **notnull**

**select** (**select** user\_name **from** pm.**user** u **where** u.user\_id = pc.user\_id) **as** **name** ,

last\_chng\_time **as** change\_time, **row\_number**() **over**() **as** **numeric** **from** pm.project\_changes pc

**select** (**select** project\_name **from** pm.project p **where** p.project\_id = pc.project\_id) **as** name\_of\_project,

(**select** user\_name **from** pm.**user** u **where** u.user\_id = pc.user\_id) **as** name\_of\_last\_editor,

**lag**(user\_id) **over**() **as** id\_of\_previous\_editor **from** pm.project\_changes pc

**order** **by** id\_of\_previous\_editor **desc**

