🔗 FOREIGN KEY

IGN KEY

FOREIGN KEY

"student" jadvali   "course" jadvali

id
name
course_id

id
name

FOREIGN KEY

"student" jadvali

1	Sardor	4
2	Eshmat	NULL
3	Toshmat	1
4	Elyor	4
5	Ogabek	5
6	Shaxboz	NULL
7	Ulugbek	2
8	Botir	4
9	Sarvar	5
10	Muhiddin	3

"course" jadvali
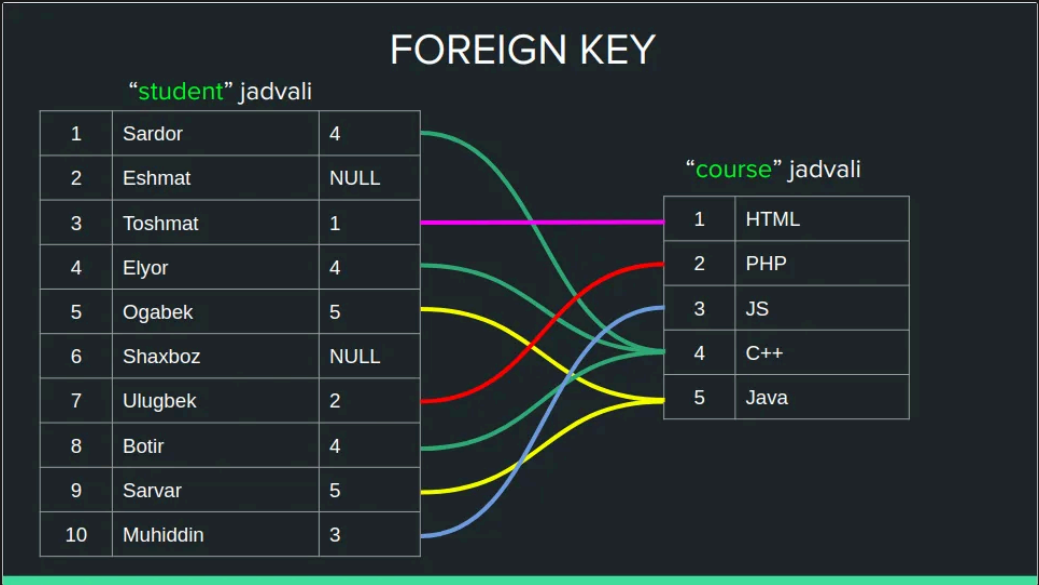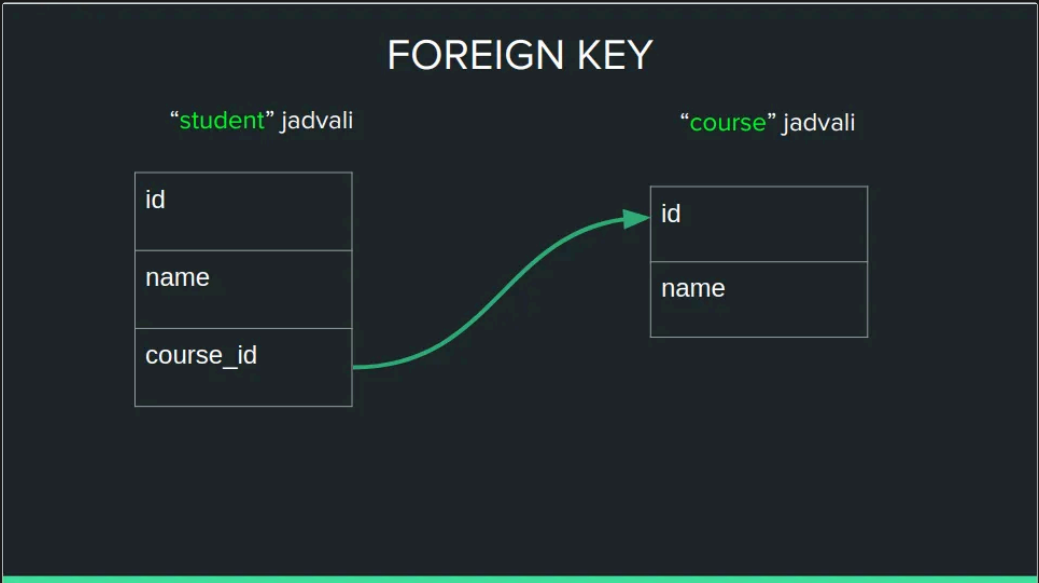
1	HTML
2	PHP
3	JS
4	C++
5	Java

FOREIGN KEY - ikkita jadvalni bir biriga bog'lashda ishlatiladigan index hisoblanadi. FOREIGN KEY orqali bog`lanayotgan ustunlarning tipi bir xil bo`lishi shart. 1-usul CREATE TABLE student (id int unsigned NOT NULL AUTO_INCREMENT, name varchar(30) NOT NULL, course_id INT DEFAULT NULL, PRIMARY KEY (id), FOREIGN KEY(course_id) REFERENCES course(id)); 2-usul. FOREIGN KEY indeximizga o`zimiz xohlagan nom berish CREATE TABLE student ( id int unsigned NOT NULL AUTO_INCREMENT, name varchar(30) NOT NULL, course_id int DEFAULT NULL FOREIGN KEY REFERENCES course(id), PRIMARY KEY (id), CONSTRAINT FK_student_c FOREIGN KEY(course_id) REFERENCES course(id) ); FOREIGN KEYi yo`q bo`lgan jadvaldagi ustunga foreign key qo`shish: ALTER TABLE student ADD FOREIGN KEY (course_id) REFERENCES course(id); -- index ga nom o`zimiz xohlagan nom berib qo`shish ALTER TABLE student ADD CONSTRAINT FK_student_c FOREIGN KEY (course_id) REFERENCES course(id); FOREIGN KEY ni o`chirish: ALTER TABLE Orders DROP FOREIGN KEY FK_student_c;

CASCADE actionlar

Biror ma`lumot UPDATE yoki DELETE bo`lganda, FOREIGN KEY bilan bog`langan jadvallardagi ma`lumotlarga ham ta`sir qilish mumkin. Yani bitta qatorni o`chirmoqchimiz, lekin undagi biror ustun boshqa jadvalga FOREIGN KEY bilan bog`langan. Yuqoridagi "student" va "course" jadvallarini misol qilishimiz mumkin. Agar "course" jadvalidan "HTML" qiymatli qatorni o`chirmoqchimiz. "student" jadvalida "HTML" ning id si ishlatilgan bo`lsa , o`sha barcha ishlatilgan qatorlarni ham o`chirishni xohlayapmiz. Ya`ni "HTML" kursiga boradigan barcha studenlarni o`chirmoqchimiz. Shunday holda ON DELETE [action_nomi] dan foydalanamiz. Ya`ni bog`langan jadvalda birortasi o`chirilsa, ikkichi jadvaldan ham shu ma`lumotga bog`liq bo`lganlarini ham o`chiradi. Uning uchun jadvalimizni quyidagicha hosil qilishimiz kerak CREATE TABLE course (id int NOT NULL AUTO_INCREMENT PRIMARY KEY, name varchar(50) NOT NULL); CREATE TABLE student (id int unsigned NOT NULL AUTO_INCREMENT, name varchar(30) NOT NULL, course_id int DEFAULT NULL, PRIMARY KEY (id), CONSTRAINT FK_student_c FOREIGN KEY(course_id) REFERENCES course(id)); "course" jadvaliga : INSERT INTO course (name) VALUES ("HTML"); INSERT INTO course (name) VALUES ("PHP"); INSERT INTO course (name) VALUES ("JS"); INSERT INTO course (name) VALUES ("C++"); INSERT INTO course (name) VALUES ("Java"); INSERT INTO course (name) VALUES ("CSS"); "student" jadvaliga : INSERT INTO student (name, course_id) VALUES ("Sardor", 4); INSERT INTO student (name, course_id) VALUES ("Eshmat", NULL); INSERT INTO student (name, course_id) VALUES ("Toshmat", 1); INSERT INTO student (name, course_id) VALUES ("Elyor", 4); INSERT INTO student (name, course_id) VALUES ("Ogabek", 5); INSERT INTO student (name, course_id) VALUES ("Shaxboz", NULL); INSERT INTO student (name, course_id) VALUES ("Ulugbek", 2); INSERT INTO student (name, course_id) VALUES ("Botir", 4); INSERT INTO student (name, course_id) VALUES ("Sarvar", 5); INSERT INTO student (name, course_id) VALUES ("Muhiddin", 3); INSERT INTO student (name, course_id) VALUES ("Jasur", NULL); INSERT INTO student (name, course_id) VALUES ("Samandar", 2);

Actionlar

ON DELETE RESTRICT (DEFAULT)

Yuqoridagi "course" va "student" jadvallarini hosil qildik. "student" jadvalida "course_id" ustunini FOREIGN KEY bilan "student" jadvaliga bog`ladik. Va shu foreign key ustunda ON DELETE actioniga hechnarsa yozmadik. Agar hechnarsa yozmasak ON DELETE RESTRICT deb qabul qiladi. Bu degani agarda "course" jadvalidan biror ma`lumot o`chirilmoqchi bo`lsa va o`sha o`chirilmoqchi bo`lgan ma`lumot "student" jadvalidagi "course_id" ustuni bilan bog`langan bo`lsa, "course" jadvalidan bu ma`lumotni o`chirishga ruxsat etilmaydi. SELECT * FROM course; +----+------+ | id | name | +----+-----+ | 1 | HTML | | 2 | PHP | <---> shu qatorni o`chirishni xohlaymiz | 3 | JS | | 4 | C++ | | 5 | Java | | 6 | CSS | +----+------+ SELECT * FROM student; +----+------+-----------+ | id | name | course_id | +----+----------+-----------+ | 1 | Sardor | 4 | | 2 | Eshmat | NULL | | 3 | Toshmat | 1 | | 4 | Elyor | 4 | | 5 | Ogabek | 5 | | 6 | Shaxboz | NULL | | 7 | Ulugbek | 2 | | 8 | Botir | 4 | | 9 | Sarvar | 5 | | 10 | Muhiddin | 3 | | 11 | Jasur | NULL | | 12 | Samandar | 2 | <---> 2 id li course shu qatorda ishlatilgan +----+----------+-----------+ DELETE FROM course WHERE id = 2; Va quyidagicha xatolik chiqadi: [23000][1451] Cannot delete or update a parent row: a foreign key constraint fails (`dars2`.`student`, CONSTRAINT `student_ibfk_1` FOREIGN KEY (`course_id`) REFERENCES `course` (`id`)) Ya`ni o`chirishga ruxsat bermaydi.

ON DELETE CASCADE

Oldingi FOREIGN KEY ni o`chiramiz: ALTER TABLE student DROP FOREIGN KEY FK_student_c; Endi yangi FOREIGN KEY qo`shamiz: ALTER TABLE student ADD CONSTRAINT FK_student_c FOREIGN KEY (course_id) REFERENCES course(id) ON DELETE CASCADE; Yuqoridagi "course" va "student" jadvallarini hosil qildik va "student" jadvalida "course_id" ustunini FOREIGN KEY bilan "student" jadvaliga bog`ladik. Va shu foreign key ustunda ON DELETE CASCADE qo`lladik. Bu degani agarda "course" jadvalidan biror ma`lumot o`chirilsa, o`sha o`chirilgan ma`lumot "student" jadvali bilan bog`langan bo`lsa, "student" jadvalidagi bog`langan ma`lumot ham o`chirilsin degani. DELETE FROM course WHERE id = 2; "course" jadvalidan ID si 2 ga teng bo`lgan ma`lumotni o`chiramiz. "student" jadvalidagi "course_id" ustuni "course" jadvali bilan bog`langan. "course_id" ustunida 2 ga teng bo`lgan qator bor bo`lsa barchasi o`chib ketadi. Sababi FOREIGN KEY orqali ikkita jadvalni bir-biriga bog`laganimizda ON DELETE CASCADE deb ko`rsatib ketgan edik. SELECT * FROM student; +----+----------+-----------+ | id | name | course_id | +----+----------+-----------+ | 1 | Sardor | 4 | | 2 | Eshmat | NULL | | 3 | Toshmat | 1 | | 4 | Elyor | 4 | | 5 | Ogabek | 5 | | 6 | Shaxboz | NULL | | 8 | Botir | 4 | | 9 | Sarvar | 5 | | 10 | Muhiddin | 3 | | 11 | Jasur | NULL | +----+----------+-----------+ "student" jadvalidan "course_id" si 2ga teng bo`lganlar ham o`chirildi.

ON DELETE SET NULL

```sql
CREATE TABLE student ( id int unsigned NOT NULL AUTO_INCREMENT, name varchar(30) NOT NULL, course_id int DEFAULT NULL, PRIMARY KEY (id), CONSTRAINT FK_student_c FOREIGN KEY(course_id) REFERENCES course(id) ON DELETE SET NULL );
```

Bu holatda "course" jadvalidan biror ma`lumot o'chirmoqchi bo`lsak va bu ma`lumot "student" jadvalidagi "course_id" ustuni bilan bog`langan bo`lsa, "course" jadvalidan ma`lumotni o`chiradi. Lekin "student" jadvalidagi "course_id" ustunidagi qiymatni NULL ga aylantiradi. SELECT * FROM student +----+----------+-----------+ | id | name | course_id | +----+----------+-----------+ | 8 | Sardor | 4 | | 9 | Eshmat | NULL | | 10 | Toshmat | 1 | | 11 | Elyor | 4 | | 12 | Ogabek | 5 | | 13 | Shaxboz | NULL | | 14 | Ulugbek | 1 | | 15 | Botir | 4 | | 16 | Sarvar | 5 | | 17 | Muhiddin | 3 | <----> shu qatorni o`chirmoqchimiz | 18 | Jasur | NULL | | 20 | Samandar | NULL | +----+----------+-----------+ DELETE FROM course WHERE id = 3; SELECT * FROM student +----+----------+-----------+ | id | name | course_id | +----+----------+-----------+ | 8 | Sardor | 4 | | 9 | Eshmat | NULL | | 10 | Toshmat | 1 | | 11 | Elyor | 4 | | 12 | Ogabek | 5 | | 13 | Shaxboz | NULL | | 14 | Ulugbek | 1 | | 15 | Botir | 4 | | 16 | Sarvar | 5 | | 17 | Muhiddin | NULL | <----> NULL ga aylandi | 18 | Jasur | NULL | | 20 | Samandar | NULL | +----+----------+-----------+ "course" jadvalidan 3-idli ma`lumot ham o`chdi.