

REPORT



과 목 명 : DATABASE

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이 름 : 박민혁



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# by. software 32151671 parkminhyeok

drop database if exists 박민혁;
CREATE DATABASE IF NOT EXISTS 박민혁;
USE 박민혁;

CREATE TABLE IF NOT EXISTS pmh_department (
    department_id CHAR(10) NOT NULL,
    department_name CHAR(10),
    constraint pk_department PRIMARY KEY (department_id)
);

INSERT INTO pmh_department (department_id, department_name) VALUES
    ('sf', '소프트웨어학과'),
    ('cp', '컴퓨터공학과'),
    ('ms', '모바일시스템공학과'),
    ('sj', '산업정보학과');

CREATE TABLE IF NOT EXISTS pmh_instructor (
    instructor_pid CHAR(10) NOT NULL,
    instructor_name CHAR(10) NOT NULL,
    instructor_department CHAR(10),
    constraint pk_instructor PRIMARY KEY (instructor_pid),
    constraint uniq_instructor UNIQUE KEY (instructor_name),
    constraint fk_instructor_department foreign key(instructor_department)
references pmh_department(department_id)
);

INSERT INTO pmh_instructor (instructor_pid, instructor_name,
instructor_department) VALUES
    ('aaa', '구자영', 'sf'),
    ('bbb', '우진운', 'sf'),
    ('ccc', '김두일', 'cp'),
    ('ddd', '이석균', 'sf'),
    ('eee', '송인식', 'cp'),
    ('fff', '전은실', 'ms'),
    ('ggg', '박제호', 'ms'),
    ('hhh', '박규식', 'sj'),
    ('iii', '오세종', 'sj');
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CREATE TABLE IF NOT EXISTS pmh_course (
    course_id CHAR(10) NOT NULL,
    course_name CHAR(20),
    course_instructor CHAR(10),
    course_prerequisite CHAR(10),
    PRIMARY KEY (course_id),
    Constraint fk_course_Instructor foreign key(course_instructor) references
pmh_instructor(instructor_pid),
    CONSTRAINT fk_prerequisite_Course foreign key(course_prerequisite)
references pmh_course(course_id)
);

INSERT INTO pmh_course (course_id, course_name, course_instructor,
course_prerequisite)
VALUES ('jjj', '일반화학1', 'ccc', NULL);
INSERT INTO pmh_course (course_id, course_name, course_instructor,
course_prerequisite)
VALUES ('kkk', '데이터베이스기초', 'ddd', NULL);
INSERT INTO pmh_course (course_id, course_name, course_instructor,
course_prerequisite)
VALUES ('lll', '디자인패턴', 'ggg', 'kkk');
INSERT INTO pmh_course (course_id, course_name, course_instructor,
course_prerequisite)
VALUES ('mmm', '멀티미디어시스템', 'hhh', NULL);
INSERT INTO pmh_course (course_id, course_name, course_instructor,
course_prerequisite)
VALUES ('nnn', '성공취', 'fff', NULL);
INSERT INTO pmh_course (course_id, course_name, course_instructor,
course_prerequisite)
VALUES ('ooo', '종설', 'hhh', 'mmm');
INSERT INTO pmh_course (course_id, course_name, course_instructor,
course_prerequisite)
VALUES ('ppp', '컴퓨터그래픽스', 'eee', NULL);
INSERT INTO pmh_course (course_id, course_name, course_instructor,
course_prerequisite)
VALUES ('qqq', '파이썬', 'iii', NULL);
INSERT INTO pmh_course (course_id, course_name, course_instructor,
course_prerequisite)

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VALUES ('rrr', '머신러닝', 'iii', 'qqq');
INSERT INTO pmh_course (course_id, course_name, course_instructor,
course_prerequisite)
VALUES ('sss', '클라우드', 'iii', 'rrr');

CREATE TABLE IF NOT EXISTS pmh_student (
    student_id CHAR(10) NOT NULL,
    student_name CHAR(10) NOT NULL,
    student_major CHAR(10) DEFAULT NULL,
    constraint pk_student PRIMARY KEY (student_id),
    constraint fk_student_department foreign key(student_major) references
pmh_department(department_id)
);

INSERT INTO pmh_student (student_id, student_name, student_major) VALUES
('32151671', '박민혁', 'sf'),
('32155068', '홍승기', 'cp'),
('32153180', '이상민', 'ms'),
('32151648', '박동학', 'sj');

CREATE TABLE IF NOT EXISTS pmh_course_taken (
    course_taken_no INT NOT NULL auto_increment,
    sid CHAR(10),
    cid CHAR(10),
    grade FLOAT,
    year_taken INT,
    PRIMARY KEY (course_taken_no),
    foreign key(sid) references pmh_student(student_id),
    CONSTRAINT fk_coursetaken_course foreign key(cid) references
pmh_course(course_id)
);

INSERT INTO pmh_course_taken (sid, cid, grade, year_taken) VALUES
('32151671', 'jjj', 4.5, 2020),
('32151671', 'kkk', 4.0, 2020),
('32151671', 'lll', 4.5, 2020),
('32151671', 'mmm', 4.0, 2020),
('32151671', 'nnn', 4.5, 2020),

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( '32151671', 'ooo', 4.5, 2020),
( '32151671', 'ppp', 3.5, 2020),
( '32151671', 'qqq', 2.5, 2018),
( '32151671', 'rrr', 3.5, 2019),
( '32151671', 'sss', 4.5, 2020),
( '32155068', 'sss', 4.0, 2020),
( '32151648', 'kkk', 4.5, 2020),
( '32153180', 'lll', 4.5, 2020);
```

Result

- department table

	department_id	department_name
▶	cp	컴퓨터공학과
	ms	모바일시스템공학과
	sf	소프트웨어학과
	sj	산업정보학과
●	NULL	NULL

- instructor table

	instructor_pid	instructor_name	instructor_department
▶	aaa	구자영	sf
	bbb	우진운	sf
	ccc	김두일	cp
	ddd	이석균	sf
	eee	송인식	cp
	fff	전은실	ms
	ggg	박제호	ms
	hhh	박규식	sj
	iii	오세종	sj

- course table

	course_id	course_name	course_instructor	course_prerequisite
▶	jjj	일반화학1	ccc	NULL
	kkk	데이터베이스기초	ddd	NULL
	lll	디자인패턴	ggg	kkk
	mmm	멀티미디어시스템	hhh	NULL
	nnn	성공취	fff	NULL
	ooo	종설	hhh	mmm
	ppp	컴퓨터그래픽스	eee	NULL
	qqq	파이썬	iii	NULL
	rrr	머신러닝	iii	qqq
	sss	클라우드	iii	rrr

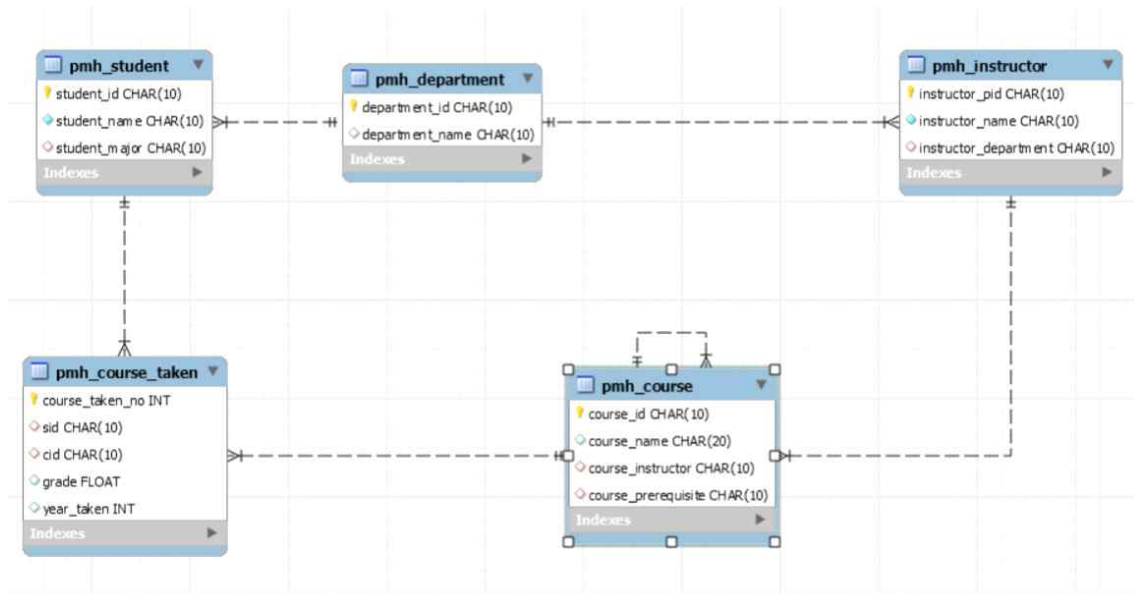
- student table

	student_id	student_name	student_major
▶	32151648	박동학	sj
	32151671	박민혁	sf
	32153180	이상민	ms
	32155068	홍승기	cp

- course_taken table

	course_taken_no	sid	cid	grade	year_taken
▶	1	32151671	jjj	4.5	2020
	2	32151671	kkk	4	2020
	3	32151671	lll	4.5	2020
	4	32151671	mmm	4	2020
	5	32151671	nnn	4.5	2020
	6	32151671	ooo	4.5	2020
	7	32151671	ppp	3.5	2020
	8	32151671	qqq	2.5	2018
	9	32151671	rrr	3.5	2019
	10	32151671	sss	4.5	2020
	11	32155068	sss	4	2020
	12	32151648	kkk	4.5	2020
	13	32153180	lll	4.5	2020

- Corw foot 기반의 모델 스키마



pmh_student table에선 student_major가 pmh_department table의 department_id를 참조한다.

pmh_course_taken table에선 sid가 pmh_student table의 student_id를 참조하고, cid가 pmh_course table의 course id를 참조한다.

pmh_course table에선 course_instructor가 pmh_instructor table의 instructor_pid를 참조하고, course_prerequisite가 pmh_course table의 course_id를 참조한다.

pmh_instructor table에선 instructor_department가 pmh_department table의 department_id를 참조한다.