**관계형 데이터베이스 스키마**

2018111374 박세연

**회원(member)**

|  |  |  |  |
| --- | --- | --- | --- |
| 회원번호(id) | 이름(name) | 연락처(phone) | 친구(friend) |
| CHAR(8) | VARCHAR(20) | VARCHAR(13) | VARCHAR(20) |
| NOT NULL | NOT NULL |  |  |
| PK |  |  |  |
|  |  |  | FK |
| 20200001 | 박세연 | 010-1234-5678 | 김하나, 김두리 |
| 20200002 | 나태한 | 010-2020-2021 | 김민지 |

id NOT NULL

name NOT NULL

PRIMARY KEY(id)

FOREIGN KEY(friend) REFERENCES friend

**친구(friend)**

|  |  |
| --- | --- |
| 회원번호(id) | 친구회원번호(friend\_id) |
| CHAR(8) | CHAR(8) |
| NOT NULL | NOT NULL |
| PK | PK |
| FK |  |
| 20200001 | 20200013 |
| 20200001 | 20200014 |

id NOT NULL

friend\_id NOT NULL

PRIMARY KEY(id, friend\_id)

FOREIGN KEY(id) REFERENCES member(id)

친구 회원번호는 회원 테이블의 회원번호에 있는 것이어야 함.

**도서(book)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 도서번호(id) | 도서명  (name) | 저자  (author) | 출판사(publisher) | 분야  (genre) | 등록일자(regdate) | 최신도서(newbook) |
| CHAR(8) | VARCHAR(20) | VARCHAR(20) | VARCHAR(20) | VARCHAR(10) | DATE | CHAR(4) |
| NOT NULL | NOT NULL | NOT NULL |  | NOT NULL |  |  |
| PK |  |  |  |  |  |  |
|  |  | FK |  |  |  | FK |
| 20200001 | 트렌드 코리아 2021 | 김난도, 전미영 | 미래의창 | 경제경영 | 2020-10-01 | yes |
| 20190001 | 죽음 1 | 베르나르 베르베르 | 열린책들 | 소설 | 2019-12-01 | no |

id NOT NULL

name NOT NULL

author NOT NULL

genre NOT NULL

PRIMARY KEY(id)

FOREIGN KEY(newbook) REFERENCES book(regdate)

FOREIGN KEY(author) REFERENCES author(author)

**저자(author)**

|  |  |
| --- | --- |
| 도서번호(id) | 저자(author) |
| CHAR(8) | VARCHAR(20) |
| NOT NULL | NOT NULL |
| PK |  |
| FK |  |
| 20200001 | 김하나 |
| 20200001 | 김두리 |

id NOT NULL

author NOT NULL

PRIMARY KEY(id)

FOREIGN KEY(id) REFERENCES book(id)

**대출(borrow)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 도서번호  (book\_id) | 회원번호  (member\_id) | 대출일자  (brw\_date) | 반납예정일(exp\_rtn\_date) | 반납일  (rtn\_date) |
| CHAR(8) | CHAR(8) | DATE | DATE | DATE |
| NOT NULL | NOT NULL | NOT NULL | NOT NULL |  |
| PK | PK |  |  |  |
| FK | FK |  | FK | FK |
| 20190001 | 20200001 | 2020-11-01 | 2020-11-15 | 2020-11-13 |
| 20200001 | 20200002 | 2020-11-03 | 2020-11-17 | 2020-11-14 |

book\_id NOT NULL

member\_id NOT NULL

brw\_date NOT NULL

exp\_rtn\_date NOT NULL

PRIMARY KEY(book\_id, member\_id)

FOREIGN KEY(book\_id) REFERENCES book(id)

FOREIGN KEY(member\_id) REFERENCES member(id)

FOREIGN KEY(exp\_rtn\_date) REFERENCES borrow(brw\_date)

FOREIGN KEY(rtn\_date) REFERENCES return(rtn\_date)

**예약(reservation)**

|  |  |
| --- | --- |
| 도서번호(book\_id) | 회원번호(member\_id) |
| CHAR(8) | CHAR(8) |
| NOT NULL | NOT NULL |
| PK | PK |
| FK | FK |
| 20200003 | 20200013 |
| 20180002 | 20200004 |

book\_id NOT NULL

member\_id NOT NULL

PRIMARY KEY(book\_id, member\_id)

FOREIGN KEY(book\_id) REFERENCES book(id)

FOREIGN KEY(member\_id) REFERENCES member(id)

**반납(return)**

|  |  |  |
| --- | --- | --- |
| 도서번호(book\_id) | 회원번호(member\_id) | 반납일(rtn\_date) |
| CHAR(8) | CHAR(8) | DATE |
| NOT NULL | NOT NULL | NOT NULL |
| PK | PK |  |
| FK | FK |  |
| 20200001 | 20200015 | 2020-11-28 |
| 20180003 | 20190023 | 2020-1-25 |

book\_id NOT NULL

member\_id NOT NULL

rtn\_date NOT NULL

PRIMARY KEY(book\_id, member\_id)

FOREIGN KEY(book\_id) REFERENCES book(id)

FOREIGN KEY(member\_id) REFERENCES member(id)

**추천(recommend)**

|  |  |  |
| --- | --- | --- |
| 도서번호(book\_id) | 회원번호(member\_id) | 후기글(review) |
| CHAR(8) | CHAR(8) | VARCHAR(100) |
| NOT NULL | NOT NULL | NOT NULL |
| FK | FK |  |
| 20200001 | 20200023 | So amazing! |
| 20200002 | 20190046 | There is a reason to be a best seller. |

book\_id NOT NULL

member\_id NOT NULL

review NOT NULL

FOREIGN KEY(book\_id) REFERENCES book(id)

FOREIGN KEY(member\_id) REFERENCES member(id)

**연장(extension)**

|  |  |  |
| --- | --- | --- |
| 도서번호(book\_id) | 원래반납예정일(org\_rtn\_date) | 연장신청일(ext\_date) |
| CHAR(8) | DATE | DATE |
| NOT NULL | NOT NULL | NOT NULL |
| PK | PK |  |
| FK | FK |  |
|  |  | org\_rtn\_date >= ext\_date |
| 20200001 | 2020-11-15 | 2020-11-13 |
| 20190001 | 2020-12-01 | 2020-11-28 |

book\_id NOT NULL

org\_rtn\_date NOT NULL

ext\_date NOT NULL

PRIMARY KEY(book\_id, org\_rtn\_date)

FOREIGN KEY(book\_id) REFERENCES book(id)

FOREIGN KEY(org\_rtn\_date) REFERENCES borrow(exp\_rtn\_date)

CHECK(org\_rtn\_date >= ext\_date)