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| **《数据库系统原理》实验报告（）** | | | | | |
| **题目：**DML语言实验 | | | | | |
| 学号 |  | 姓名 |  | 日期 | 2025年4月15日 |
| **实验环境：5.7.25-OceanBase\_CE-v4.2.1.10** | | | | | |
| **实验步骤及结果截图：**  **1** | | | | | |
| CREATE TABLE category (      No INTEGER PRIMARY KEY NOT NULL,      Name VARCHAR(100) NOT NULL  );  CREATE TABLE books (      No INTEGER PRIMARY KEY NOT NULL,      Title VARCHAR(100) NOT NULL,      Author VARCHAR(100) NOT NULL,      publication\_year INTEGER NOT NULL,      C\_no INTEGER NOT NULL,      FOREIGN KEY (C\_no) REFERENCES category(No)  );  CREATE TABLE readers (      No INTEGER PRIMARY KEY NOT NULL,      Name VARCHAR(100) NOT NULL,      Gender VARCHAR(10) NOT NULL CHECK (Gender IN ('Female', 'Male')),      Tel VARCHAR(20) NOT NULL  );  CREATE TABLE borrow\_records (      No INTEGER PRIMARY KEY NOT NULL,      B\_no INTEGER NOT NULL,      R\_no INTEGER NOT NULL,      Borrow\_date DATE NOT NULL,      Return\_date DATE,      FOREIGN KEY (B\_no) REFERENCES books(No),      FOREIGN KEY (R\_no) REFERENCES readers(No)  );    **2**使用比较运算符查询 2020 年以后出版的图书的 Title 和 publication\_year。  SELECT Title, publication\_year  FROM books  WHERE publication\_year > 2020  ORDER BY publication\_year;    **3**查询借阅过编号为 3 的图书的读者的 Name 和 Tel。  SELECT r.Name, r.Tel  FROM readers r  JOIN borrow\_records br ON r.No = br.R\_no  WHERE br.B\_no = 3;    **4**查询作者姓名中包含 “张” 字的图书信息。  SELECT \*  FROM books  WHERE Author LIKE '%张%';    **5**查询所有男性读者的借阅记录，包括读者姓名、借阅图书 Title、借阅日期和归还 日期，结果按借阅日期升序排列。  SELECT r.Name , b.Title , br.Borrow\_date , br.Return\_date  FROM readers r  JOIN borrow\_records br ON r.No = br.R\_no  JOIN books b ON br.B\_no = b.No  WHERE r.Gender = 'Male'  ORDER BY br.Borrow\_date ASC;    **6**查询女性读者的总人数。  SELECT COUNT(\*)  FROM readers  WHERE Gender = 'Female';    **7**查询借阅时长超过 15天的借阅记录，包括读者姓名、图书 Title。  SELECT r.Name , b.Title  FROM borrow\_records br  JOIN readers r ON br.R\_no = r.No  JOIN books b ON br.B\_no = b.No  WHERE br.Return\_date IS NOT NULL    AND DATEDIFF(br.Return\_date, br.Borrow\_date) > 15;    **8**向 borrow\_records 表中插入一条记录（借阅编号为 6，图书编号为 5，读者编号为 5，借阅日期为 '2025-03-24'，归还日期为空）。  INSERT INTO borrow\_records (No, B\_no, R\_no, Borrow\_date, Return\_date)  VALUES (6, 5, 5, '2025-03-24', NULL);  -- 验证插入结果  SELECT \* FROM borrow\_records WHERE No = 6;    **9**计算每本图书的平均借阅时长，并输出平均借阅时长超过 15 天的图书的 No。  SELECT      B\_no ,      AVG(DATEDIFF(Return\_date, Borrow\_date))  FROM      borrow\_records  WHERE      Return\_date IS NOT NULL  GROUP BY      B\_no  HAVING      AVG(DATEDIFF(Return\_date, Borrow\_date)) > 15;    **10**查询借阅过编号为 1 或者编号为 2 图书的读者No。  SELECT DISTINCT R\_no  FROM borrow\_records  WHERE B\_no = 1 OR B\_no = 2;    **11**查询既借阅过编号为 1 又借阅过编号为 3 图书的读者No  SELECT R\_no  FROM borrow\_records  WHERE B\_no = 1  AND R\_no IN (      SELECT R\_no      FROM borrow\_records      WHERE B\_no = 3  );    **12**建立一个包含图书名字，作者，出版年份和图书类别的视图（赋予列名为 stitle, sauthor, spublicationyear, categoryname）。【create view】  CREATE VIEW book\_information AS  SELECT      b.Title AS stitle,      b.Author AS sauthor,      b.publication\_year AS spublicationyear,      c.Name AS categoryname  FROM      books b  JOIN      category c ON b.C\_no = c.No;  -- 验证视图创建结果  SELECT \* FROM book\_information; | | | | | |
| **出现的问题：** | | | | | |
| **解决方案：** | | | | | |