计算机科学与技术学院 数据库系统 课程实验报告

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| 实验题目：综合实验1 | | 学号：202300130183 |
| 日期：2024/11/29 | 班级：23级人工智能 | 姓名：宋浩宇 |
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| 实验软件和硬件环境：  实验软件：  系统：Windows 11 家庭中文版23H2 22631.4317  编辑器：Visual Studio Code  数据库：SQL Server 2022  数据库管理工具：Microsoft SQL Server Management Studio 18  硬件环境：  CPU：13th Gen Intel(R) Core(TM) i9-13980HX 2.20 GHz  内存：32.0 GB (31.6 GB 可用)  磁盘驱动器：NVMe WD\_BLACKSN850X2000GB | | |
| 实验步骤：  实验分为四个部分，每个部分分为模式图和SQL，其中的模式图均是使用Microsoft SQL Server Management Studio 18中的Database Diagram工具生成的，SQL语句均使用Visual Studio Code进行辅助高亮处理。   1. 哔哩哔哩：   模式图为：  哔哩哔哩模式图  SQL为：  USE FOR\_HOME\_WORK;  GO  CREATE SCHEMA BILIBILI AUTHORIZATION "dbo";  GO  CREATE TABLE BILIBILI."USER"(      UID INT PRIMARY KEY,      NICKNAME VARCHAR(20),      GENDER VARCHAR(2),      DATAOFBIRTH DATE,      IDNUMBER VARCHAR(18),      PROFILE VARCHAR(200),      USERLEVEL INT  );  GO  CREATE TABLE BILIBILI."CONNECT"(      F\_UID INT,      L\_UID INT,      CONNECT\_TIME DATE,      PRIMARY KEY (F\_UID, L\_UID),      FOREIGN KEY (F\_UID) REFERENCES BILIBILI.[USER](UID),      FOREIGN KEY (L\_UID) REFERENCES BILIBILI.[USER](UID)  );  GO  CREATE TABLE BILIBILI."VIDEO"(      VID INT PRIMARY KEY,      NAME VARCHAR(50),      DESCRIPTION VARCHAR(200),      CHANEL INT,      CONTENT VARCHAR(500),      FOREIGN KEY (CHANEL) REFERENCES BILIBILI.[USER](UID)  );  GO  CREATE TABLE BILIBILI."COIN"(      UID INT,      VID INT,      TIME DATE,      AMOUNT INT,      PRIMARY KEY (UID, VID, TIME),      FOREIGN KEY (UID) REFERENCES BILIBILI.[USER](UID),      FOREIGN KEY (VID) REFERENCES BILIBILI.VIDEO(VID)  );  GO  CREATE TABLE BILIBILI."COMMENT"(      UID INT,      VID INT,      POST\_TIME DATE,      COLOR INT,      CONTENT VARCHAR(500),      VIDEO\_TIME DATE,      PRIMARY KEY (UID, VID, POST\_TIME),      FOREIGN KEY (UID) REFERENCES BILIBILI.[USER](UID),      FOREIGN KEY (VID) REFERENCES BILIBILI.VIDEO(VID)  );  GO  CREATE TABLE BILIBILI."LIKE"(      UID INT,      VID INT,      TIME DATE,      PRIMARY KEY (UID, VID),      FOREIGN KEY (UID) REFERENCES BILIBILI.[USER](UID),      FOREIGN KEY (VID) REFERENCES BILIBILI.VIDEO(VID)  );  GO  CREATE TABLE BILIBILI."COLLECT"(      UID INT,      VID INT,      TIME DATE,      PRIMARY KEY (UID, VID),      FOREIGN KEY (UID) REFERENCES BILIBILI.[USER](UID),      FOREIGN KEY (VID) REFERENCES BILIBILI.VIDEO(VID)  );  GO  CREATE TABLE BILIBILI."WATCH"(      UID INT,      VID INT,      TIME DATE,      DURATION INT,      PRIMARY KEY (UID, VID),      FOREIGN KEY (UID) REFERENCES BILIBILI.[USER](UID),      FOREIGN KEY (VID) REFERENCES BILIBILI.VIDEO(VID)  );  GO   1. 淘宝：   模式图为：  淘宝模式图  SQL为：  USE FOR\_HOME\_WORK;  GO  CREATE SCHEMA [TAOBAO] AUTHORIZATION DBO;  GO  CREATE TABLE TAOBAO.[BRAND] (      BID INT PRIMARY KEY,      NAME VARCHAR(100),      ADDRESS VARCHAR(100),      TELEPHONE VARCHAR(20)  );  GO  CREATE TABLE TAOBAO.[COMMODITY] (      CID INT PRIMARY KEY,      NAME VARCHAR(100),      TYPE INT,      BRAND INT,      GUARANTEE\_PERIOD DATE,      FOREIGN KEY (BRAND) REFERENCES TAOBAO.BRAND(BID)  );  GO  CREATE TABLE TAOBAO.[BATCH](      BATCHID INT,      MAN\_DATE DATE,      REF\_PRICE FLOAT,      CID INT,      PRIMARY KEY(CID,BATCHID),      FOREIGN KEY(CID) REFERENCES TAOBAO.COMMODITY(CID)  );  GO  CREATE TABLE TAOBAO.[STORES](      SID INT PRIMARY KEY,      NAME VARCHAR(100),      LEVEL INT  );  GO  CREATE TABLE TAOBAO.[USER](      UID INT PRIMARY KEY,      NAME VARCHAR(100),      ADDRESS VARCHAR(100),      TELEPHONE VARCHAR(20),      GENDER VARCHAR(10)  );  GO  CREATE TABLE TAOBAO.[ONSELL](      CID INT,      BATCHID INT,      PRICE FLOAT,      ONSELL\_DATE DATE,      STATUS VARCHAR(10),      REM\_AMOUNT INT,      PRIMARY KEY(CID, BATCHID),      FOREIGN KEY(CID) REFERENCES TAOBAO.COMMODITY(CID),      FOREIGN KEY(CID,BATCHID) REFERENCES TAOBAO.BATCH(CID,BATCHID)  );  GO  CREATE TABLE TAOBAO.[ORDERS](      OID INT PRIMARY KEY,      SID INT,      UID INT,      BATCHID INT,      CID INT,      SOLD\_TIME DATE,      STATUS VARCHAR(10),      BUYER\_RATE INT NULL,      FOREIGN KEY(UID) REFERENCES TAOBAO.[USER](UID),      FOREIGN KEY(CID, BATCHID) REFERENCES TAOBAO.BATCH(CID, BATCHID),      FOREIGN KEY(CID) REFERENCES TAOBAO.COMMODITY(CID),      FOREIGN KEY(SID) REFERENCES TAOBAO.STORES(SID)  );  GO   1. 王者荣耀联赛：   模式图为：  王者荣耀模式图  SQL为：  USE FOR\_HOME\_WORK;  GO  CREATE SCHEMA [KINGSHONER] AUTHORIZATION DBO;  GO  CREATE TABLE KINGSHONER.[TEAM](      TID INT PRIMARY KEY,      NAME VARCHAR(20),      FOUNDING\_DATE DATE  );  GO  CREATE TABLE KINGSHONER.[PLAYER](      PID INT PRIMARY KEY,      NAME VARCHAR(20),      DATEOFBIRTH DATE,      GENDER VARCHAR(10),      POSITION VARCHAR(20),      TID INT,      FOREIGN KEY (TID) REFERENCES KINGSHONER.[TEAM](TID)  );  GO  CREATE TABLE KINGSHONER.[MATCH](      HOST\_TID INT,      GUEST\_TID INT,      TIME DATE,      LOCATION VARCHAR(50),      DURATION DATE,      HOST\_WIN INT,      MID INT PRIMARY KEY,      FOREIGN KEY (HOST\_TID) REFERENCES KINGSHONER.[TEAM](TID),      FOREIGN KEY (GUEST\_TID) REFERENCES KINGSHONER.[TEAM](TID)  );  GO  CREATE TABLE KINGSHONER.[CHAMPION](      CID INT PRIMARY KEY,      NAME VARCHAR(20),      DESCRIPTION VARCHAR(100),      DMG\_SCORE INT,      LIFE\_SCORE INT,      DFD\_SCORE INT  );  GO  CREATE TABLE KINGSHONER.[CHOOSE](      PID INT,      CID INT,      MID INT,      RANK INT,      PRIMARY KEY (PID, MID),      FOREIGN KEY (PID) REFERENCES KINGSHONER.[PLAYER](PID),      FOREIGN KEY (CID) REFERENCES KINGSHONER.[CHAMPION](CID),      FOREIGN KEY (MID) REFERENCES KINGSHONER.[MATCH](MID)  );  GO  CREATE TABLE KINGSHONER.[BAN](      PID INT,      MID INT,      CID INT,      RANK INT,      FOREIGN KEY (PID) REFERENCES KINGSHONER.[PLAYER](PID),      FOREIGN KEY (MID) REFERENCES KINGSHONER.[MATCH](MID),      FOREIGN KEY (CID) REFERENCES KINGSHONER.[CHAMPION](CID),      PRIMARY KEY (PID, MID)  );  GO  CREATE TABLE KINGSHONER.[DAMAGE](      MID INT,      A\_PID INT,      B\_PID INT,      AMOUNT INT,      TIME DATE FOREIGN KEY (MID) REFERENCES KINGSHONER.[MATCH](MID),      FOREIGN KEY (A\_PID) REFERENCES KINGSHONER.[PLAYER](PID),      FOREIGN KEY (B\_PID) REFERENCES KINGSHONER.[PLAYER](PID),      PRIMARY KEY (MID, A\_PID, B\_PID)  );  GO  CREATE TABLE KINGSHONER.[KILL](      MID INT,      A\_PID INT,      B\_PID INT,      TIME DATE,      FOREIGN KEY (MID) REFERENCES KINGSHONER.[MATCH](MID),      FOREIGN KEY (A\_PID) REFERENCES KINGSHONER.[PLAYER](PID),      FOREIGN KEY (B\_PID) REFERENCES KINGSHONER.[PLAYER](PID),      PRIMARY KEY (MID, A\_PID, B\_PID)  );  GO  CREATE TABLE KINGSHONER.[GRAND](      MID INT,      PID INT,      TIME DATE,      FOREIGN KEY (MID) REFERENCES KINGSHONER.[MATCH](MID),      FOREIGN KEY (PID) REFERENCES KINGSHONER.[PLAYER](PID),      PRIMARY KEY (MID, PID)  );  GO   1. 微信：   模式图为：  微信模式图  SQL为：  USE FOR\_HOME\_WORK;  GO  CREATE SCHEMA [WECHAT] AUTHORIZATION DBO;  GO  CREATE TABLE WECHAT.[USER](      UID INT PRIMARY KEY,      NICKNAME VARCHAR(50),      LONGITUDE FLOAT,      LATITUDE FLOAT  );  GO  CREATE TABLE WECHAT.[FRIEND](      UID1 INT,      UID2 INT,      CONNECT\_TIME DATE,      TYPE VARCHAR(10),      NOTE VARCHAR(200),      PRIMARY KEY(UID1, UID2),      FOREIGN KEY(UID1) REFERENCES WECHAT.[USER](UID),      FOREIGN KEY(UID2) REFERENCES WECHAT.[USER](UID)  );  GO  CREATE TABLE WECHAT.[MESSAGE](      MID INT PRIMARY KEY,      CONTENT VARCHAR(200),      SHARED\_COUNT INT DEFAULT 1,  );  GO  CREATE TABLE WECHAT.[SEND](      UID\_SENDER INT,      UID\_RECEIVER INT,      MID INT,      SENT\_TIME DATE,      STATUS VARCHAR(10),      PRIMARY KEY(UID\_SENDER, UID\_RECEIVER, MID),      FOREIGN KEY(UID\_SENDER) REFERENCES WECHAT.[USER](UID),      FOREIGN KEY(UID\_RECEIVER) REFERENCES WECHAT.[USER](UID),      FOREIGN KEY(MID) REFERENCES WECHAT.[MESSAGE](MID)  );  GO  create trigger trg\_UpdateSharedCount  on Wechat.[send]  AFTER INSERT  AS  BEGIN      UPDATE Wechat.[message]      SET SHARED\_COUNT = SHARED\_COUNT + 1      WHERE MID IN (SELECT MID FROM inserted)  END;  GO  CREATE TABLE WECHAT.[GROUPS](      GID INT PRIMARY KEY,      GNAME VARCHAR(50),      CREATE\_TIME DATE,      BULLENTIN VARCHAR(200),      UID\_OWNER INT,      FOREIGN KEY(UID\_OWNER) REFERENCES WECHAT.[USER](UID)  );  GO  CREATE TABLE WECHAT.[JOIN](      UID INT,      GID INT,      JOIN\_TIME DATE,      NOTE VARCHAR(200),      NICKNAME VARCHAR(50),      PRIMARY KEY(UID, GID),      FOREIGN KEY(UID) REFERENCES WECHAT.[USER](UID),      FOREIGN KEY(GID) REFERENCES WECHAT.[GROUPS](GID)  );  GO  CREATE TABLE WECHAT.[GROUP\_SEND](      UID INT,      GID INT,      MID INT,      SENT\_TIME DATE,      PRIMARY KEY(UID, GID, MID),      FOREIGN KEY(UID) REFERENCES WECHAT.[USER](UID),      FOREIGN KEY(GID) REFERENCES WECHAT.[GROUPS](GID),      FOREIGN KEY(MID) REFERENCES WECHAT.[MESSAGE](MID)  );  GO  CREATE TRIGGER TRG\_UpdateGroupMessageCount  ON WECHAT.[GROUP\_SEND]  AFTER INSERT  AS  BEGIN      UPDATE WECHAT.[GROUPS]      SET SHARED\_COUNT = SHARED\_COUNT + 1      WHERE MID IN (SELECT MID FROM inserted)  END;  CREATE TABLE WECHAT.[MOMENT](      MOID INT PRIMARY KEY,      UID INT,      CONTENT VARCHAR(200),      POST\_TIME DATE,      TYPE VARCHAR(10),      FOREIGN KEY(UID) REFERENCES WECHAT.[USER](UID)  );  GO | | |