**PART - A**

**Table Creation and Management**

1. Create a new table containing the category code and description for the categories of books sold by JustLee Books. The table should be called CATEGORY, and the columns should be CatCode and CatDesc. The CatCode column should store a maximum of 2 characters, and the CatDesc column should store a maximum of 10 characters.

create table CATEGORY (

CatCode CHAR(2),

CatDesc varchar2(10)

);

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2. Create a new table containing these four columns: Emp#, Lastname, Firstname, and Job\_class. The table name should be EMPLOYEES. The Job\_class column should be able to store character strings up to a maximum length of four, but the column values shouldn’t be padded if the value has less than four characters. The Emp# column contains a numeric ID and should allow a five-digit number. Use column sizes you consider suitable for the Firstname and Lastname columns.

create table EMPLOYEES(

Emp# number(5),

Lastname varchar2(15),

Firstname varchar2(15),

Jobclass varchar2(4)

);

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3. Add two columns to the EMPLOYEES table. One column, named EmpDate, contains the date of employment for each employee, and its default value should be the system date. The second column, named EndDate, contains employees’ date of termination.

alter table EMPLOYEES

ADD(

EmpDate DATE DEFAULT SysDate,

EndDate DATE

);

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4. Modify the Job\_class column of the EMPLOYEES table so that it allows storing a maximum width of two characters.

alter table EMPLOYEES

MODIFY(

jobclass varchar2(2)

);

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5.Delete the EndDate column from the EMPLOYEES table.

alter table employees

drop column enddate;

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6. Rename the EMPLOYEES table as JL\_EMPS.

RENAME EMPLOYEES TO JL\_EMPS;

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7. Create a new table containing these four columns from the existing BOOKS table: ISBN, Cost, Retail, and Category. The name of the ISBN column should be ID, and the other columns should keep their original names. Name the new table BOOK\_PRICING.

create table BOOK\_PRICING(

ID, Cost, Retail, Category

) AS

(

select ISBN, Cost, Retail, Category from BOOKS

);

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8. Mark the Category column of the BOOK\_PRICING table as unused. Verify that the column is no longer available.

alter table BOOK\_PRICING

set unused (category);

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9. Truncate the BOOK\_PRICING table, and then verify that the table still exists but no longer contains any data.

TRUNCATE TABLE book\_pricing;

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10. Delete the BOOK\_PRICING table permanently so that it isn’t moved to the recycle bin. Delete the JL\_EMPS table so that it can be restored. Restore the JL\_EMPS table and verify that it’s available again.

DROP TABLE BOOK\_PRICING PURGE;

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DROP TABLE JL\_EMPS;

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FLASHBACK TABLE JL\_EMPS TO BEFORE DROP ;

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**PART B: UNDERSTANDING CONSTRAINTS**

**JustLee Books has become the exclusive distributor for a number of books. The company now needs to assign sales representatives to retail bookstores to handle the new distribution duties. For these assignments, create new tables to support the following:**

1. Modify the following SQL command so that the Rep\_ID column is the PRIMARY KEY for the table and the default value of Y is assigned to the Comm column. (The Comm column indicates whether the sales representative earns commission.)

CREATE TABLE store\_reps

(rep\_ID NUMBER(5),

last VARCHAR2(15),

first VARCHAR2(10),

comm CHAR(1));

SQL:

CREATE TABLE store\_reps(

rep\_ID NUMBER(5),

last VARCHAR2(15),

first VARCHAR2(10),

comm CHAR(1) default 'y',

CONSTRAINT STORE\_REPS\_REP\_ID\_PK PRIMARY KEY(rep\_ID)

);

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2. Change the STORE\_REPS table so that NULL values can’t be entered in the name columns (First and Last).

alter table store\_reps

modify (last constraint store\_reps\_last\_nonnull not null,

first constraint store\_reps\_first\_nonnull not null

);

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3. Change the STORE\_REPS table so that only a Y or N can be entered in the Comm column

alter table store\_reps

ADD constraint store\_reps\_comm\_c check (comm in ('Y','N'));

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4. Add a column named Base\_salary with a datatype of NUMBER(7,2) to the STORE\_REPS table. Ensure that the amount entered is above zero.

alter table store\_reps

add base\_salary number(7,2)

add constraint store\_reps\_base\_salary\_c check (base\_salary>0);

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5. Create a table named BOOK\_STORES to include the columns listed in the following chart.

create table BOOK\_STORES (

store\_id number(8),

name VARCHAR2(30) not null ,

contact varchar2(30),

rep\_id VARCHAR2(5),

CONSTRAINT book\_stores\_store\_id\_pk PRIMARY KEY (store\_id),

constraint book\_stores\_name\_u UNIQUE(name)

);

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6. Add a constraint to make sure the Rep\_ID value entered in the BOOK\_STORES table is a valid value contained in the STORE\_REPS table. The Rep\_ID columns of both tables were initially created as different datatypes. Does this cause an error when adding the constraint? Make table modifications as needed so that you can add the required constraint.

We have different data types in both the tables(BOOK\_STORES AND STORE\_REPS) for the column rep\_id.

We have to change the data type in BOOK\_STORES from varchar2(5) to NUMBER(5).

alter table book\_stores modify (rep\_id number(5))

add constraint book\_stores\_rep\_id\_fk FOREIGN KEY(rep\_id)

REFERENCES store\_reps(rep\_id);

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7. Change the constraint created in Assignment #6 so that associated rows of the BOOK\_STORES table are deleted automatically if a row in the STORE\_REPS table is deleted.

alter table book\_stores

drop CONSTRAINT book\_stores\_rep\_id\_fk ;

alter table book\_stores

add constraint book\_stores\_rep\_id\_fk FOREIGN KEY(rep\_id)

REFERENCES store\_reps(rep\_id) ON delete cascade;

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8. Create a table named REP\_CONTRACTS containing the columns listed in the following chart. A composite PRIMARY KEY constraint including the Rep\_ID, Store\_ID, and Quarter columns should be assigned. In addition, FOREIGN KEY constraints should be assigned to both the Rep\_ID and Store\_ID columns.

create table REP\_CONTRACTS(

Store\_id number(8),

name NUMBER(5),

Quarter char(3),

rep\_id number(5),

CONSTRAINT rep\_contracts\_store\_id\_rep\_id\_pk PRIMARY KEY(rep\_id, store\_id, quarter),

CONSTRAINT rep\_contracts\_store\_id\_fk Foreign Key (store\_id)

references book\_stores(store\_id),

CONSTRAINT rep\_contracts\_rep\_id\_fk Foreign Key (rep\_id)

references store\_reps(rep\_id)

);

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9. Produce a list of information about all existing constraints on the STORE\_REPS table

select constraint\_name, constraint\_type, search\_condition, r\_constraint\_name

from user\_constraints

where table\_name = 'STORE\_REPS';

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select \* from user\_cons\_columns where table\_name = 'STORE\_REPS';

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10. Issue the commands to disable and then enable the CHECK constraint on the Base\_salary column.

alter table store\_reps

disable CONSTRAINT STORE\_REPS\_BASE\_SALARY\_C;

alter table store\_reps

enable CONSTRAINT STORE\_REPS\_BASE\_SALARY\_C;

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11. Create two tables based on the E-R model shown in Figure 1 and the business rules in the following list for a work order tracking database. Include all the constraints in the CREATE TABLE statements. You should have only two CREATE TABLE statements and no ALTER TABLE statements. Name all constraints except NOT NULLs.

create table project(

proj# number(5),

p\_name varchar2(15) not null,

p\_desc varchar2(30),

p\_budget number(8,2),

constraint project\_proj#\_pk PRIMARY KEY(proj#),

constraint project\_p\_name\_uk UNIQUE (p\_name)

);

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create table workorders (

wo# number(5),

proj# number(5),

wo\_desc varchar2(30) not null,

wo\_assigned varchar2(15),

wo\_hours number(3) not null,

wo\_start date default sysdate,

wo\_due date,

wo\_complete char(1),

constraint workorders\_wo#\_pk PRIMARY KEY(wo#),

constraint workorders\_proj#\_fk FOREIGN key (proj#)

references project(proj#),

constraint workorders\_wo\_desc\_uk UNIQUE(wo\_desc),

constraint workorders\_wo\_hours\_c CHECK (wo\_hours>0),

constraint workorders\_wo\_complete\_c CHECK(wo\_complete IN ('Y','N'))

);

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