Lab exercise 1
Part 1

1) 10

2) 6 column

3) NOT NULL

4) ctr-number

5) Lowest: -99
   Highest: 99

6) Lowest: -9999999.99
   Highest: 9999999.99

7) Primary key (itm_number, start date, start_time)

**Modifying a column**
1. Run the DESCRIBE command on the orders table to view its structure.

```
Name                   Null?    Type
-----------------      -------- ------------
ID                     NOT NULL VARCHAR2(9)
ODR_DATE               NOT NULL DATE
ODR_TIME               NOT NULL DATE
NUMBER_OF_UNITS        NOT NULL NUMBER(2)
CTR_NUMBER             NOT NULL VARCHAR2(6)
```

2. Task: Add a default constraint that will use today's date to assign a value to the odr_date column of the orders table if no date is provided.

```
ALTER TABLE orders
MODIFY odr_date DATE DEFAULT SYSDATE;
```

3. Run the DESCRIBE command again to verify the command was successful.

```
Table ORDERS altered.

Name                   Null?    Type
-----------------      -------- ------------
ID                     NOT NULL VARCHAR2(9)
ODR_DATE               NOT NULL DATE
ODR_TIME               NOT NULL DATE
NUMBER_OF_UNITS        NOT NULL NUMBER(2)
CTR_NUMBER             NOT NULL VARCHAR2(6)
```

**Adding a check constraint**
1. Run the DESCRIBE command on the customers table to view its structure.

```
Name                   Null?    Type
-------------------- -------- -------------
CTR_NUMBER           NOT NULL VARCHAR2(6)
EMAIL                NOT NULL VARCHAR2(50)
FIRST_NAME           NOT NULL VARCHAR2(20)
LAST_NAME            NOT NULL VARCHAR2(30)
PHONE_NUMBER         NOT NULL VARCHAR2(11)
CURRENT_BALANCE      NOT NULL NUMBER(6,2)
SRE_ID                        VARCHAR2(4)
TEM_ID                        VARCHAR2(4)
LOYALTY_CARD_NUMBER           VARCHAR2(6)
```

2. Task: Add a check constraint that will not allow the customers current balance to go below zero.

```
ALTER TABLE customers
ADD CONSTRAINT check_balance CHECK (current_balance >= 0);
```

3. Run the DESCRIBE command again to verify the command was successful.

```
Table CUSTOMERS altered.
```

4. A check constraint is not shown in the results of a describe command.
   a. Go to the Object Browser
   b. Select the customers table.
   c. Click on the CONSTRAINTS tab.
   d. You will see your constraint here.

| CONSTRAINT_NAME | CONSTRAINT_TYPE | SEARCH_CONDITION | R_OWNER | R_TABLE_NAME | R_CONSTRAINT_NAME | DELETE_RULE | STATUS | DEFERRABLE | VALIDATE |
|---|---|---|---|---|---|---|---|---|---|
| 1 CHECK_BALANCE | Check | current_balance >= 0 | (null) | (null) | (null) | (null) | ENABLED | NOT DEFERRABLE | VALIDATE |

**Adding a column**
The client has decided that they would like a separate column for the customer's mobile phone number. This is an optional column that will be required to store 11 digits.
1. Run the DESCRIBE command on the customers table to view its structure.

```
Name                     Null?     Type
----------------------   --------  ------------
CTR_NUMBER               NOT NULL  VARCHAR2(6)
EMAIL                    NOT NULL  VARCHAR2(50)
FIRST_NAME               NOT NULL  VARCHAR2(20)
LAST_NAME                NOT NULL  VARCHAR2(30)
PHONE_NUMBER             NOT NULL  VARCHAR2(11)
CURRENT_BALANCE          NOT NULL  NUMBER(6,2)
SRE_ID                             VARCHAR2(4)
TEM_ID                             VARCHAR2(4)
LOYALTY_CARD_NUMBER                VARCHAR2(6)
```

2. Task: Add column that will satisfy the clients requirements

```
ALTER TABLE customers
ADD mobile_phone_number VARCHAR2(11);
```

3. Run the DESCRIBE command on the customers table to view its structure.

```
Name                     Null?     Type
----------------------   --------  ------------
CTR_NUMBER               NOT NULL  VARCHAR2(6)
EMAIL                    NOT NULL  VARCHAR2(50)
FIRST_NAME               NOT NULL  VARCHAR2(20)
LAST_NAME                NOT NULL  VARCHAR2(30)
PHONE_NUMBER             NOT NULL  VARCHAR2(11)
CURRENT_BALANCE          NOT NULL  NUMBER(6,2)
SRE_ID                             VARCHAR2(4)
TEM_ID                             VARCHAR2(4)
LOYALTY_CARD_NUMBER                VARCHAR2(6)
MOBILE_PHONE_NUMBER                VARCHAR2(11)
```

**Dropping a column**
The client has decided that they don't need the mobile number column as most customers only provide a single contact number and that is already catered for with the existing phone_number column.
1. Run the DESCRIBE command on the customers table to view its structure.

```
Name                        Null?     Type
--------------------        --------  ------------
CTR_NUMBER                  NOT NULL  VARCHAR2(6)
EMAIL                       NOT NULL  VARCHAR2(50)
FIRST_NAME                  NOT NULL  VARCHAR2(20)
LAST_NAME                   NOT NULL  VARCHAR2(30)
PHONE_NUMBER                NOT NULL  VARCHAR2(11)
CURRENT_BALANCE             NOT NULL  NUMBER(6,2)
SRE_ID                                VARCHAR2(4)
TEM_ID                                VARCHAR2(4)
LOYALTY_CARD_NUMBER                   VARCHAR2(6)
MOBILE_PHONE_NUMBER                   VARCHAR2(11)
```

2. Task: Drop the column that was created to store the mobile phone number.

```
ALTER TABLE customers
DROP COLUMN mobile_phone_number;
```

3. Run the DESCRIBE command on the customers table to view its structure

```
Table CUSTOMERS altered.

Name                        Null?     Type
--------------------        --------  ------------
CTR_NUMBER                  NOT NULL  VARCHAR2(6)
EMAIL                       NOT NULL  VARCHAR2(50)
FIRST_NAME                  NOT NULL  VARCHAR2(20)
LAST_NAME                   NOT NULL  VARCHAR2(30)
PHONE_NUMBER                NOT NULL  VARCHAR2(11)
CURRENT_BALANCE             NOT NULL  NUMBER(6,2)
SRE_ID                                VARCHAR2(4)
TEM_ID                                VARCHAR2(4)
LOYALTY_CARD_NUMBER                   VARCHAR2(6)
```