

The Institute of Finance Management

BCS/ BIT
[YEAR 2]

CSU 07306.

Practical _#4 _Advanced SQL, ACADEMIC YR 2018/2019,

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```
-----  
CREATE TABLE Category (  
Id INTEGER PRIMARY KEY,  
Name VARCHAR(20) UNIQUE NOT NULL);
```

```
CREATE TABLE Product (  
Id INTEGER PRIMARY KEY,  
Name VARCHAR(20) NOT NULL,  
CategoryId INTEGER NOT NULL REFERENCES Category(Id),  
Price Numeric(7,2) CHECK (Price>0)  
);
```

```
CREATE TABLE Store (  
Id INTEGER PRIMARY KEY,  
Name VARCHAR(20) UNIQUE NOT NULL  
);
```

```
CREATE TABLE Receipt (  
Id INTEGER PRIMARY KEY,  
IssuedOn DATE,  
StoreId INTEGER REFERENCES Store(Id)  
);
```

```
CREATE TABLE Receipt_Item (  
ReceiptId INTEGER REFERENCES Receipt(id),  
ProductId INTEGER REFERENCES Product(id),  
Quantity INTEGER NOT NULL,  
CONSTRAINT RI_PK PRIMARY KEY (ReceiptId, ProductId)  
);
```

```
-----  
INSERT INTO Category(Id, Name) VALUES(1, 'Books' );  
INSERT INTO Category(Id, Name) VALUES(2, 'Toys' );  
INSERT INTO Category(Id, Name) VALUES(3, 'Miscellaneous' );
```

```
-----  
INSERT INTO Product VALUES(1, 'Toy Train', 1, 20.50);  
INSERT INTO Product VALUES(2, 'Toy Car', 1, 10.22);  
INSERT INTO Product VALUES(3, 'Toy Boat', 1, 30.25);  
INSERT INTO Product VALUES(4, 'The Bat in the Mat', 2, 3.25);  
INSERT INTO Product VALUES(5, 'Green Frog Red Frog', 2, 5.25);
```

```
-----  
INSERT INTO Store VALUES(1, 'Hypermall Branch');  
INSERT INTO Store VALUES(2, 'Downtown Branch');  
INSERT INTO Store VALUES(3, 'Midtown Branch');  
-----
```

```

INSERT INTO Receipt VALUES (1, '1/Jan/2013', 1);
INSERT INTO Receipt VALUES (2, '2/Jan/2013', 2);
INSERT INTO Receipt VALUES (3, '3/Jan/2013', 2);

```

```

-----
INSERT INTO Receipt_Item VALUES (1, 1, 20);
INSERT INTO Receipt_Item VALUES (1, 2, 10);
INSERT INTO Receipt_Item VALUES (2, 1, 10);
INSERT INTO Receipt_Item VALUES (2, 3, 10);
INSERT INTO Receipt_Item VALUES (2, 5, 25);
INSERT INTO Receipt_Item VALUES (3, 1, 12);
INSERT INTO Receipt_Item VALUES (3, 2, 26);
-----

```

Provide SQL statements to

- Q1) Display the id and name of all products that belong to the category with id 1
- Q2) Display the total number of different products and their average price
- Q3) Display the total number of different products belonging to category 1 and their average price
- Q4) Display the id of each store, with the number of receipts for that store,
(it is ok if stores with no receipts do not appear)
- Q5) Display the id and name of each product, with the name of the category it belongs to.
- Q6) Display the id and date of each receipt, with the name of the store the receipt belongs to
- Q7) Display the id and name of each category,
with the number of products that belong to the category.
- Q8) Display the id and name of each category, with the number of the products that belong to the category.
Make sure ALL categories appear, even those with no products.
- Q9) Display the id and name of any store which has sold the product with id 1.
- Q10) Display the id and name of any store which has sold the product named 'Toy Car'.
- Q11) Display the id and name of all stores which have sold any products belonging to the category with id 1
- Q12) Display id and name of all stores which have sold any products belonging to the category named "Toys"
- Q13) Display id and date of each receipt, with the total number

products that were sold in that receipt
(you need to add the quantities for all the receipt items
corresponding to that receipt)

Q14) Display the id and name of each receipt, with the total amount of each receipt.

The total amount is calculated by multiplying the quantity mentioned on each item and multiplying by the corresponding product's price, and adding this number for all items corresponding to that receipt.

Q15) Display the id and names of all products which have NOT been sold

Q16) Display the id of each product, plus how many receipts has each product sold.

Make sure ALL products appear, even those with no receipts/not sold.

Q17) Display the id of each product, plus how many times has each product been sold.

Q18) Display the number of stores in the database.

Q19) Display the name of each category with the number of products in that category

that are priced between \$20 and \$30 (inclusive)

Q20) Create a view that contains the id and name of each category with the number

of products in that category. Make sure that all categories appear, even if they contain no products.