Assignment 2

Group Members:

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SQL Queries:

```
1 •     create database assignment2;   #creating a new database
2 •     use assignment2;
3 •     show tables;   #after importing all the tables show the tables
4 •     create table stock as (select * from icicibank); #add rows from the icicibank table
5 •     select * from stock; #look at table stock
6
7 •     insert into stock (symbol,date,prev_close,open_price,high_price,low_price,close_price) #add rows from the apollo table
8       select symbol,date,`Prev Close`,`Open Price`,`High Price`,`Low Price`,`Close Price` from apollo;
9
10 •    insert into stock (symbol,date,prev_close,open_price,high_price,low_price,close_price)   #add rows from the reliance table
11      select symbol,date,`Prev Close`,`Open Price`,`High Price`,`Low Price`,`Close Price` from reliance;
12
13 •    insert into stock (symbol,date,prev_close,open_price,high_price,low_price,close_price)   #add rows from the suntv table
14      select symbol,date,prev_close,open_price,high_price,low_price,close_price from suntv;
15
16 •    insert into stock (symbol,date,prev_close,open_price,high_price,low_price,close_price)  #add rows from the indigo table
17      select symbol,date,`Prev Close`,`Open Price`,`High Price`,`Low Price`,`Close Price` from indigo;
18
19 •    select * from stock;
20      #Check that there are no null values in our table to avoid inconsistency
21 •    select count(*) from stock where Symbol is null;
22 •    select count(*) from stock where Date is null;
23 •    select count(*) from stock where Prev_Close is null;
24 •    select count(*) from stock where Open_Price is null;
25 •    select count(*) from stock where High_Price is null;
26 •    select count(*) from stock where Low_Price is null;
27 •    select count(*) from stock where Close_Price is null;
28
```

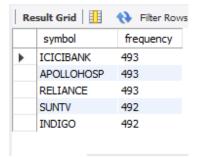Task 1 Query:

```
28
29      #Solution Task1
30 •    select symbol,count(symbol) as frequency from stock group by symbol; #counts the number of rows in each company's data
31 •    select count(*) as total_rows from stock;   #count the total number of rows in table stock
32
```
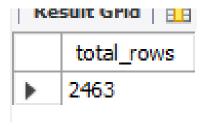
Showing the Number of rows in
each category of stock company.

Result: Showing the number of rows in table stock

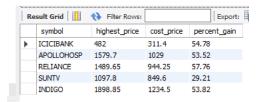| symbol	frequency
ICICIBANK	493
APOLLOHOSP	493
RELIANCE	493
SUNTV	492
INDIGO	492

total_rows
2463

Task 2 queries:

```
33      #Solution Task2
34
35      #To find the highest gain we assume that the buyer buys shares at the lowest price on the 2nd of Nov,2017 and will sell it at the highest price on each day.
36      #So, we shall first find the maximum among all the values of high_price of each company and then compare it with the low_price of it's share on 2-Nov-2017.
37  ●⊝  select symbol,highest_price,cost_price,round((highest_price/cost_price-1)*100,2) as percent_gain from (select a.symbol,max(a.high_price) as highest_price,
38      └  b.low_price as cost_price from stock a,stock b where a.symbol=b.symbol and b.date='2-Nov-17' group by a.symbol) as diff;  #finding the overall highest
39                                                                                              #possible percentage gain for each company
40
41      #To find the highest loss we assume that the buyer buys shares at the highest price on the 2nd of Nov,2017 and will sell it at the lowest price on each day.
42      #So, we shall first find the minimum among all the values of low_price of each company and then compare it with the _prighice of it's share on 2-Nov-2017.
43  ●⊝  select symbol,lowest_price,cost_price,round((1-lowest_price/cost_price)*100,2) as percent_loss from (select a.symbol,min(a.low_price) as lowest_price,
44      └  b.high_price as cost_price from stock a,stock b where a.symbol=b.symbol and b.date='2-Nov-17' group by a.symbol) as diff; #finding the overall
45                                                                                              #highest possible percentage loss for each company
46
```

Result: Showing the highest overall percentage gain of each company.

symbol	highest_price	cost_price	percent_gain
▶ ICICIBANK	482	311.4	54.78
APOLLOHOSP	1579.7	1029	53.52
RELIANCE	1489.65	944.25	57.76
SUNTV	1097.8	849.6	29.21
INDIGO	1898.85	1234.5	53.82

Result: Showing the highest overall percentage loss of each company.

symbol	lowest_price	cost_price	percent_loss
▶ ICICIBANK	256.5	320.4	19.94
APOLLOHOSP	910.1	1045	12.91
RELIANCE	862.65	956.5	9.81
SUNTV	389.35	865	54.99
INDIGO	691	1263.2	45.3

Task 3 queries:

```
46
47      #Solution Task3
48
49      #we first rank each company as per their percentage gain each day and then take the top 5 ranked entries for each company
50  ●⊝  select * from (select symbol,date,(Close_Price/Prev_Close-1)*100 as daily_gain,row_number() over
51      └  (partition by symbol order by (Close_Price/Prev_Close-1)*100 desc) as stock_rank from stock) ranks where stock_rank<=5;
52
53      #For Apollo the top fives Days were: 12-Sep-19,13-Aug-18,3-Jun-19,16-Aug-19,15-Nov-18
54      #For ICICI the top five days were: 22-Mar-19,29-Oct-18,20-Sep-19,23-Sep-19,8-May-2018
55      #For Indigo the top five days were: 14-Nov-18,25-Oct-18,20-Mar-19,30-Oct-19,16-Apr-19
56      #For Reliance the top five days were: 13-Aug-19,22-Mar-19,20-Sep-19,8-Oct-18,20-May-19
57      #For SunTV the top fives days were: 14-May-18,11-Feb-19,20-Sep-19,23-Sep-19,8-Feb-18
58
```

Task 4 queries:

```
58
59      #Solution Task 4
60
61      #stocks closing higher than previous day's close must have the difference between the close_price and prev_close as positive
62  ●    select date from stock where close_price-prev_close>0 and symbol='RELIANCE'
63      and date in (select date from stock where close_price-prev_close>0 and symbol='ICICIBANK')
64      and date in (select date from stock where close_price-prev_close>0 and symbol='APOLLOHOSP')
65      and date in (select date from stock where close_price-prev_close>0 and symbol='INDIGO')
66      and date in (select date from stock where close_price-prev_close>0 and symbol='SUNTV');
67
68
69      #stocks closing lower than previous day's close must have the difference between the close_price and prev_close as negative
70  ●    select date from stock where close_price-prev_close<0 and symbol='RELIANCE'
71      and date in (select date from stock where close_price-prev_close<0 and symbol='ICICIBANK')
72      and date in (select date from stock where close_price-prev_close<0 and symbol='APOLLOHOSP')
73      and date in (select date from stock where close_price-prev_close<0 and symbol='INDIGO')
74      and date in (select date from stock where close_price-prev_close<0 and symbol='SUNTV');
75
```

Task 5 queries:

```
76      #solution task 5
77
78 •    select * from stock;
79
80      # let's look at INDIGO
81
82      #we shall find the minimum possible price at which indigo share can be bought during the first week of January.
83 •    select date, @go:= min(low_price) as min from stock where date regexp'[0-7]-Jan-18' and date not regexp'[0-9][0-9]-Jan-18' and Symbol ='INDIGO';
84      #We shall find the maximum possible price at which indigo share can be sold during the last week of January.
85 •    select date, @ind:= max(high_price) as max from stock where date regexp'[2-3][1, 4-9]-Jan-18' and Symbol ='INDIGO';
86
87 •    select (floor(2000/@go)*(@ind - @go)) as profit; #displays the mximum possible profit earned
88      #The profit earned on Rs.2000 from indigo is Rs.101
89
90      # let'look at RELIANCE
91
92      #we shall find the minimum possible price at which reliance share can be bought during the first week of January.
93 •    select date, @go:= min(low_price) as min from stock where date regexp'[0-7]-Jan-18' and date not regexp'[0-9][0-9]-Jan-18' and Symbol ='RELIANCE';
94      #We shall find the maximum possible price at which reliance share can be sold during the last week of January.
95 •    select date, @ind:= max(high_price) as max from stock where date regexp'[2-3][1, 4-9]-Jan-18' and Symbol ='RELIANCE';
96
97 •    select (floor(2000/@go))*(@ind - @go) as profit; #displays the mximum possible profit earned
98      #The profit earned on Rs.2000 from reliance is Rs.150.70000000000005
99
100     # let's look at 'APOLLOHOSP'
101
102     #we shall find the minimum possible price at which apollo share can be bought during the first week of January.
103 •   select date, @go:= min(low_price) as min from stock where date regexp'[0-7]-Jan-18' and date not regexp'[0-9][0-9]-Jan-18' and Symbol ='APOLLOHOSP';
104     #We shall find the maximum possible price at which apollo share can be sold during the last week of January.
105 •   select date, @ind:= max(high_price) as max from stock where date regexp'[2-3][1, 4-9]-Jan-18' and Symbol ='APOLLOHOSP';
106
107 •   select (floor(2000/@go))*(@ind - @go) as profit; #displays the mximum possible profit earned
108     #The profit earned on Rs.2000 from apollohosp is rs.17.09999999999991
109
110     #let's look at 'ICICIBANK'
111
112     #we shall find the minimum possible price at which icicibank share can be bought during the first week of January.
113 •   select date, @go:= min(low_price) as min from stock where date regexp'[0-7]-Jan-18' and date not regexp'[0-9][0-9]-Jan-18' and Symbol ='ICICIBANK';
114     #We shall find the maximum possible price at which icicibank share can be sold during the last week of January.
115 •   select date, @ind:= max(high_price) as max from stock where date regexp'[2-3][1, 4-9]-Jan-18' and Symbol ='ICICIBANK';
116
117 •   select (floor(2000/@go))*(@ind - @go) as profit; #displays the mximum possible profit earned
118     #The profit earned on Rs.2000 from icicibank is Rs.349.19999999999993
119
120     # let's look at 'SUNTV'
121
122     #we shall find the minimum possible price at which suntv share can be bought during the first week of January.
123 •   select date, @go:= min(low_price) as min from stock where date regexp'[0-7]-Jan-18' and date not regexp'[0-9][0-9]-Jan-18' and Symbol ='SUNTV';
124     #We shall find the maximum possible price at which suntv share can be sold during the last week of January.
125 •   select date, @ind:= max(high_price) as max from stock where date regexp'[2-3][1, 4-9]-Jan-18' and Symbol ='SUNTV';
126
127 •   select (floor(2000/@go))*(@ind - @go) as profit; #displays the mximum possible profit earned
128     #The profit earned on Rs.2000 from suntv is Rs.139.70000000000027
129
130     # so we will purchase ICICIBANK with Rs.2000 as ICICI BANk is giving the maximum profit
131
132     #we shall find the minimum possible price at which icicibank share can be bought during the first week of January.
133 •   select date, @go:= min(low_price) as min from stock where date regexp'[0-7]-Jan-18' and date not regexp'[0-9][0-9]-Jan-18' and Symbol ='ICICIBANK';
134     #The best day to buy a share is 1 Jan, 2018.
135     #We shall find the maximum possible price at which icicibank share can be sold during the last week of January.
136 •   select date, @ind:= max(high_price) as max from stock where date regexp'[2-3][1, 4-9]-Jan-18' and Symbol ='ICICIBANK';
137     #The best day to sell the share is 24 Jan,2018.
138 •   select (floor(2000/@go))*(@ind - @go) as profit; #Profit earned on ICICI bank
139
140     #We gain maximum profit on Rs.2000 if we buy shares of icicbank on 1 Jan, 2018 and sell them on 24 Jan,2018 and the prfit
141     #earned is Rs. 349.19999999999993.
```

Buying date: 1 Jan,2018

Selling date: 24 Jan,2018

Name of the stock: ICICIBANK

Profit earned = Rs. 349.19999999999993