

## CS166 Final Project Report

### Team:

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### Installation Process:

PLEASE NOTE: PostgreSQL needs to be installed on the machine to run this program.

- 1) Run **source ./startPostgreSQL.sh** to start the DB server.
- 2) Run **source ./createPostgreSQL.sh** to create your DB.
- 3) Run **cp \*.csv /tmp/\$USER/myDB/data/** to copy data file to DB temp folder.
- 4) Run **psql -h localhost -p \$PGPORT \$USER"\_DB" < create.sql** to create the tables with the data from the temp folder.
- 5) Run **source ./compile.sh** to start the java program.

### Assumption:

Here are some of the assumptions we made while implementing the DBProject.java file:

- We assumed, for the most part, that the user knows what kind of information should be entered given the prompt for each value to be entered.
- To calculate the total cost for a customer, we assumed the only thing to consider was the price of the room over the period of time the customer has booked that room.

### Work Division:

Below is a general split of the functions the two of us worked on individually. There are some overlaps where we helped each other develop and finish each function. On top of these specifics, Jae did most of the debugging for the syntax errors. The two of us equally split the work for writing this report.

Jae	Jeremy
addCustomer()	addCustomer() - helped implement the date restrictions
addRoom()	addMaintenanceCompany()
addRepair()	addRepair()

- helped implement the date pattern/formatting	
bookRoom()	bookRoom() - helped implement the date restrictions
numberOfAvailableRooms()	assignHouseCleaningToRoom()
numberOfBookedRooms()	repairRequest()
listHotelRoomBookingsForAWeek()	topKHighestRoomPriceForADateRange()
totalCostForCustomer()	topKHighestPriceBookingsForACustomer()
listRepairsMade() - helped correct query statement	listRepairsMade()
topKMaintenanceCompany - helped correct query statement	topKMaintenanceCompany()
numberOfRepairsForEachRoomPerYear() -new query statement	numberOfRepairsForEachRoomPerYear()

## Implementation of each Function:

### 1)Add new customer

```

6. Assign house cleaning staff to a room
7. Raise a repair request
8. Get number of available rooms
9. Get number of booked rooms
10. Get hotel bookings for a week
11. Get top k rooms with highest price for a date range
12. Get top k highest booking price for a customer
13. Get customer total cost occurred for a give date range
14. List the repairs made by maintenance company
15. Get top k maintenance companies based on repair count
16. Get number of repairs occurred per year for a given hotel room
17. < EXIT
Please make your choice: 1
Input Customer ID: 9001
Input Customer first name: Jay
Input Customer last name: Park
Input Customer address: 183 Barret Road
Input Customer phone number: 858442819
Date is in format MM/dd/yyyy.
Input Customer birth year: 1998
Input Customer birth month: 09
Input Customer birth day: 12
Your inputted date is (In the format of MM/dd/yyyy ) :
9/12/1998
Input Customer Gender ( 'Male', 'Female', or 'Other'): Male
MAIN MENU

```

### 2)Add new Room

```

9/12/1998
Input Customer Gender ( 'Male', 'Female', or 'Other'): Male
MAIN MENU
-----
1. Add new customer
2. Add new room
3. Add new maintenance company
4. Add new repair
5. Add new Booking
6. Assign house cleaning staff to a room
7. Raise a repair request
8. Get number of available rooms
9. Get number of booked rooms
10. Get hotel bookings for a week
11. Get top k rooms with highest price for a date range
12. Get top k highest booking price for a customer
13. Get customer total cost occurred for a give date range
14. List the repairs made by maintenance company
15. Get top k maintenance companies based on repair count
16. Get number of repairs occurred per year for a given hotel room
17. < EXIT
Please make your choice: 2
Input the hotelID for the room: 1
Input the Room Number: 123
Input the Room Type: 2
MAIN MENU
-----

```

### 3)Add new maintenance Company

```

5. Add new Booking
6. Assign house cleaning staff to a room
7. Raise a repair request
8. Get number of available rooms
9. Get number of booked rooms
10. Get hotel bookings for a week
11. Get top k rooms with highest price for a date range
12. Get top k highest booking price for a customer
13. Get customer total cost occurred for a give date range
14. List the repairs made by maintenance company
15. Get top k maintenance companies based on repair count
16. Get number of repairs occurred per year for a given hotel room
17. < EXIT
Please make your choice: 4
Input repair ID: 6000
Input hotel ID: 1
Input room number: 1
Input maintenance company ID: 17
Input Repair date year: 1998
Input Repair date month: 09
Input Repair date day: 12
Your inputted date is (In the format of MM/dd/yyyy ) :
9/12/1998
Input repair description: Leaky Faucet
Input repair type: small
MAIN MENU
-----

```

### 4) Add new repair

```
5. Add new Booking
6. Assign house cleaning staff to a room
7. Raise a repair request
8. Get number of available rooms
9. Get number of booked rooms
10. Get hotel bookings for a week
11. Get top k rooms with highest price for a date range
12. Get top k highest booking price for a customer
13. Get customer total cost occurred for a give date range
14. List the repairs made by maintenance company
15. Get top k maintenance companies based on repair count
16. Get number of repairs occurred per year for a given hotel room
17. < EXIT
Please make your choice: 4
Input repair ID: 6000
Input hotel ID: 1
Input room number: 1
Input maintenance company ID: 17
Input Repair date year: 1998
Input Repair date month: 09
Input Repair date day: 12
Your inputted date is (In the format of MM/dd/yyyy ) :
9/12/1998
Input repair description: Leaky Faucet
Input repair type: small
MAIN MENU
-----
```

5)Add new Booking

```

Connecting to database...Connection URL: jdbc:postgresql://localhost:4096/jpark1
78_DB

Done
MAIN MENU
-----
1. Add new customer
2. Add new room
3. Add new maintenance company
4. Add new repair
5. Add new Booking
6. Assign house cleaning staff to a room
7. Raise a repair request
8. Get number of available rooms
9. Get number of booked rooms
10. Get hotel bookings for a week
11. Get top k rooms with highest price for a date range
12. Get top k highest booking price for a customer
13. Get customer total cost occurred for a give date range
14. List the repairs made by maintenance company
15. Get top k maintenance companies based on repair count
16. Get number of repairs occurred per year for a given hotel room
17. < EXIT
Please make your choice: 5
Please input Customer ID: 12
Please input Hotel ID: 12
Please input Room Number: 4
Your Booking does not yet exist. Would you like to create a new Booking?(y/n):
y
Please input Booking Number: 5002
Booking Date is required!
Please input Booking Date Year: 2019
Please input Booking Date Month: 10
Please input Booking Date Day: 10
Your inputted date is (In the format of MM/dd/yyyy ) :
10/10/2019
Please input the number of People for the Booking: 12
Please input the Price: 450.50
MAIN MENU

```

## 6)Assign house cleaning staff to a room

```

-----
1. Add new customer
2. Add new room
3. Add new maintenance company
4. Add new repair
5. Add new Booking
6. Assign house cleaning staff to a room
7. Raise a repair request
8. Get number of available rooms
9. Get number of booked rooms
10. Get hotel bookings for a week
11. Get top k rooms with highest price for a date range
12. Get top k highest booking price for a customer
13. Get customer total cost occurred for a give date range
14. List the repairs made by maintenance company
15. Get top k maintenance companies based on repair count
16. Get number of repairs occurred per year for a given hotel room
17. < EXIT
Please make your choice: 6
Please input Staff SSN:
20
Please input Hotel ID:
20
Please input Room number:
2
MAIN MENU
-----

```

## 7)Raise a repair request

```
*****
User Interface
*****

Connecting to database...Connection URL: jdbc:postgresql://localhost:4096/jpar
k178_DB

Done
MAIN MENU
-----
1. Add new customer
2. Add new room
3. Add new maintenance company
4. Add new repair
5. Add new Booking
6. Assign house cleaning staff to a room
7. Raise a repair request
8. Get number of available rooms
9. Get number of booked rooms
10. Get hotel bookings for a week
11. Get top k rooms with highest price for a date range
12. Get top k highest booking price for a customer
13. Get customer total cost occurred for a given date range
14. List the repairs made by maintenance company
15. Get top k maintenance companies based on repair count
16. Get number of repairs occurred per year for a given hotel room
17. < EXIT
Please make your choice: 7
Input Request ID: 9001
Input manager ID: 20
Input Repair ID: 20
Input Repair date year: 2012
Input Repair date month: 5
Input Repair date day: 11
Your inputted date is (In the format of MM/dd/yyyy ) :
5/11/2012
Input repair description: Medium
MAIN MENU
```

## 8)Get number of available rooms

```

Done
MAIN MENU
-----
1. Add new customer
2. Add new room
3. Add new maintenance company
4. Add new repair
5. Add new Booking
6. Assign house cleaning staff to a room
7. Raise a repair request
8. Get number of available rooms
9. Get number of booked rooms
10. Get hotel bookings for a week
11. Get top k rooms with highest price for a date range
12. Get top k highest booking price for a customer
13. Get customer total cost occurred for a give date range
14. List the repairs made by maintenance company
15. Get top k maintenance companies based on repair count
16. Get number of repairs occurred per year for a given hotel room
17. < EXIT
Please make your choice: 8
Please input hotel ID:
1
count
13
MAIN MENU
-----

```

## 9) Get number of booked rooms

```

13
MAIN MENU
-----
1. Add new customer
2. Add new room
3. Add new maintenance company
4. Add new repair
5. Add new Booking
6. Assign house cleaning staff to a room
7. Raise a repair request
8. Get number of available rooms
9. Get number of booked rooms
10. Get hotel bookings for a week
11. Get top k rooms with highest price for a date range
12. Get top k highest booking price for a customer
13. Get customer total cost occurred for a give date range
14. List the repairs made by maintenance company
15. Get top k maintenance companies based on repair count
16. Get number of repairs occurred per year for a given hotel room
17. < EXIT
Please make your choice: 9
Please input hotel ID:
1
count
6
MAIN MENU
-----

```

## 10)Get hotel bookings for a week



```

2. Add new room
3. Add new maintenance company
4. Add new repair
5. Add new Booking
6. Assign house cleaning staff to a room
7. Raise a repair request
8. Get number of available rooms
9. Get number of booked rooms
10. Get hotel bookings for a week
11. Get top k rooms with highest price for a date range
12. Get top k highest booking price for a customer
13. Get customer total cost occurred for a give date range
14. List the repairs made by maintenance company
15. Get top k maintenance companies based on repair count
16. Get number of repairs occurred per year for a given hotel room
17. < EXIT
Please make your choice: 10
Please input hotel ID:
200
Please input Booking Date Year: 2010
Please input Booking Date Month: 10
Please input Booking Date Day: 10
Your inputted date is (In the format of MM/dd/yyyy ) :
10/10/2010
The Date after a week is:
10/17/2010
roomno
1
2
3
4
5
6
7
8
9
10
These are the available rooms in hotel (HotelID: 200 ) this week.
MAIN MENU

```

## 11)Get top k rooms with highest price for a date range

```

15. Get top k maintenance companies based on repair count
16. Get number of repairs occurred per year for a given hotel room
17. < EXIT
Please make your choice: 11\
Your input is invalid!
Please make your choice: 11
Please enter start date year: 2012
Please enter start date month: 5
Please enter start date day: 10
Please enter end date year: 2014
Please enter end date month: 6
Please enter end date day: 21
Please enter a range: 3
hotelid roomno roomtype bid customer hotelid roomno bookingd
ate noofpeople price
0 0 default 31 16 19 1 2013-08-09 2
1999.00
1 2 Economy 31 16 19 1 2013-08-09 2
1999.00
1 1 Suite 31 16 19 1 2013-08-09 2
1999.00
MAIN MENU
-----
1. Add new customer
2. Add new room
3. Add new maintenance company
4. Add new repair

```



## 12)Get top k highest booking price for a customer

```
2. Add new room
3. Add new maintenance company
4. Add new repair
5. Add new Booking
6. Assign house cleaning staff to a room
7. Raise a repair request
8. Get number of available rooms
9. Get number of booked rooms
10. Get hotel bookings for a week
11. Get top k rooms with highest price for a date range
12. Get top k highest booking price for a customer
13. Get customer total cost occurred for a give date range
14. List the repairs made by maintenance company
15. Get top k maintenance companies based on repair count
16. Get number of repairs occurred per year for a given hotel room
17. < EXIT
Please make your choice: 12
Please enter customer ID: 16
Please enter a range: 5
price
1999.00
1999.00
1999.00
1999.00
1998.00
MAIN MENU
-----
```

## 13)Get customer total cost incurred for a given date range

```
11. Get top k rooms with highest price for a date range
12. Get top k highest booking price for a customer
13. Get customer total cost occurred for a give date range
14. List the repairs made by maintenance company
15. Get top k maintenance companies based on repair count
16. Get number of repairs occurred per year for a given hotel room
17. < EXIT
Please make your choice: 13
Please input hotel ID:
1
Please input customer ID:
16
A starting date is required for the date range.Please input Starting Date Year:
1920
Please input starting Date Month: 01
Please input starting Date Day: 01
Your inputted date is (In the format of MM/dd/yyyy ) :
1/1/1920
An End date is required for the date range.Please input End Date Year: 2019
Please input End Date Month: 12
Please input End Date Day: 31
Your inputted date is (In the format of MM/dd/yyyy ) :
12/31/2019
customerid      sum
16              7562.00
MAIN MENU
-----
```

## 14)List the repairs made by maintenance company

```

17. < EXIT
Please make your choice: 14
Please enter maintenance company ID:
1
Please enter maintenance company name:
iqcq
name      rid      repairtype      hotelid roomno
iqcq              5      Large          292      6
iqcq              12     Small          346      6
iqcq              21     Large          578      7
iqcq              23     Large          445      3
iqcq              25     Small          476      8
iqcq              56     Large          455      6
iqcq              64     Large          491      9
iqcq              65     Small          564      6
iqcq              95     Small          317      5
iqcq             108     Medium          861      3
iqcq             183     Small          882      1
iqcq             200     Small          902      6
iqcq             218     Medium          998      4
iqcq             235     Medium          822      8
iqcq             274     Medium          119      9
iqcq             280     Large          696      1
iqcq             317     Small          192      5
iqcq             322     Large          750      8
iqcq             352     Large          887      9
iqcq             364     Large          369      3

```

#### 15)Get top k maintenance companies based on repair count

```

5. Add new Booking
6. Assign house cleaning staff to a room
7. Raise a repair request
8. Get number of available rooms
9. Get number of booked rooms
10. Get hotel bookings for a week
11. Get top k rooms with highest price for a date range
12. Get top k highest booking price for a customer
13. Get customer total cost occurred for a give date range
14. List the repairs made by maintenance company
15. Get top k maintenance companies based on repair count
16. Get number of repairs occurred per year for a given hotel room
17. < EXIT
Please make your choice: 15
Please enter a range:
5
name      count
ckqv              127
iqcq              123
wwme              120
sqdg              117
glcw              116
MAIN MENU
-----
1. Add new customer
2. Add new room
3. Add new maintenance company

```

#### 16)Get number of repairs occurred per year for a given hotel room

Please enter a hotel ID:

20

Please enter a room number:

1

MAIN MENU

-----

1. Add new customer
  2. Add new room
  3. Add new maintenance company
  4. Add new repair
  5. Add new Booking
  6. Assign house cleaning staff to a room
  7. Raise a repair request
  8. Get number of available rooms
  9. Get number of booked rooms
  10. Get hotel bookings for a week
  11. Get top k rooms with highest price for a date range
  12. Get top k highest booking price for a customer
  13. Get customer total cost occurred for a given date range
  14. List the repairs made by maintenance company
  15. Get top k maintenance companies based on repair count
  16. Get number of repairs occurred per year for a given hotel room
  17. < EXIT
- Please make your choice: 16

\*\*\*\*\*  
FIND REPAIRS PER YEAR  
\*\*\*\*\*

Please enter a hotel ID:

20

Please enter a room number:

3

date_part	count
-----------	-------

2009	1
------	---

MAIN MENU