SEIS 635: SOFTWARE ANALYSIS AND DESIGN

HOTEL CHECKING SYSTEM

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INTRODUCTION

- This is the final sprint for the third team project
- We envisioned, designed and developed a Hotel Checking system (HCS)
- Hotel employees may use this system to facilitate the check-in process of their guests, with membership-based priority.
- This system is flexible to support varying business rules, a few user interface mechanisms (Front Desk, Housekeeping, and Reservation Services) and integration with third party systems
- We followed the Unified Process

SUMMARY OF SYSTEM FEATURES

- System designed for hotel operations.
- Guests will be checked in by the FrontDesk (worker) who will coordinate with housekeeping (worker) to insure the rooms are cleaned and ready for occupancy through the system.
- RoomService will check minibar in room and enter minibar status in system as well.

SUMMARY OF SYSTEM FEATURES

- Once rooms are cleaned and minibar restocked, FrontDesk will check each Guest club-status (gold, silver or none- member) and assign rooms by priority.
- If the room is not clean the Guest will have to wait based on priority status. There will be interactions between the <<Patrons>> <<FrontDesk>> <<RoomService>>and <<housekeeping>>.
- There is also an interface allowing users <<Patron>> <<FrontDesk>> <<RoomService>>and <<housekeeping>> to interact with each other

CENTRAL USE CASE 1

- HCIR: Patron Check In Room
- **Scope:** Hotel reservations: Check-In Patron.
-
- **Level:** User Goal
- **Primary Actor**: FrontDest
- **Preconditions:**
- FrontDesk has logged in to the System. Patron must have confirmation number after previously reserving online. System has Patron's reservation already stored in with name and confirmation number. Rooms must be clean and minibar must be restocked. Also the Patron must have priority status.
- **Success Guarantee (Post Condition)**:
- Patron has a reservation already in the system and a confirmation number. Room is Vacant, clean and Minibar is restocked. Priority by membership is honored.

CENTRAL USE CASE 2

- UCOR: Patron Check Out Room
- **Scope**: Hotel reservations: Check-Out Patron.
- **Level**: User Goal
- **Primary Actor**: Patron
- **Preconditions**:
- HouseKeeping Checks if Room is occupied. FrontDesk Logs into system to check if room is occupied. Patron must leave room or will be charged for another night.

- **Success Guarantee (Post Condition):**
- Patron is out of room and checked out with front desk. MiniBar is restocked and rooms are vacant and clean. All MiniBar restocking fees are paid.

Main Success Scenario (Basic Flow):

- Patron leaves the room.
- HouseKeeping checks room occupancy.
- HouseKeeping marks the room as Vacant Dirty (VD) in system once patron leaves.
- InRoomDinning checks MiniBar in Room.
- InRoomDinning marks MiniBar Not Restocked (MBNR) in System once Patron leaves Room.
- **Extensions (Alternative Flow):**
- Patron does not leave the Room so that Room is still Occupied (OC).

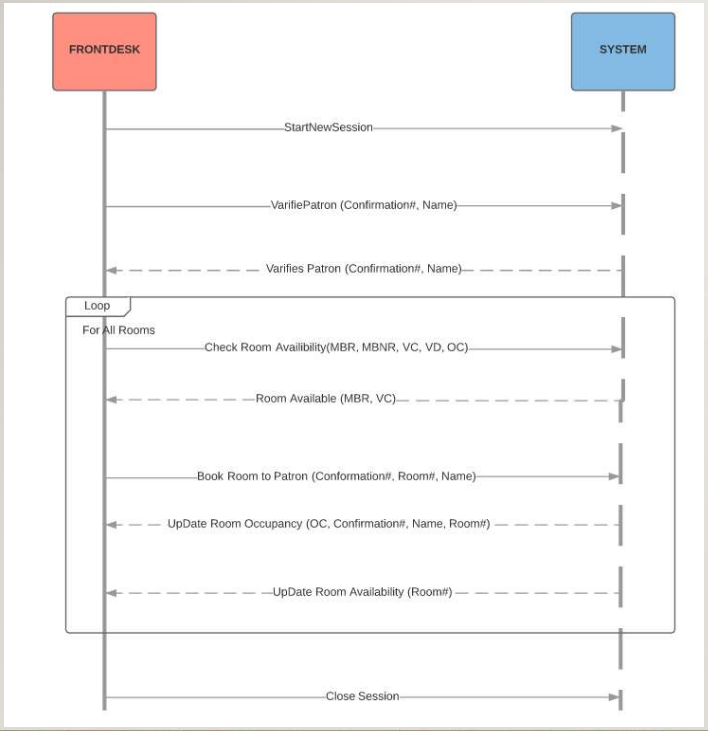
CONTROLLER (DATABASE_MANAGER)

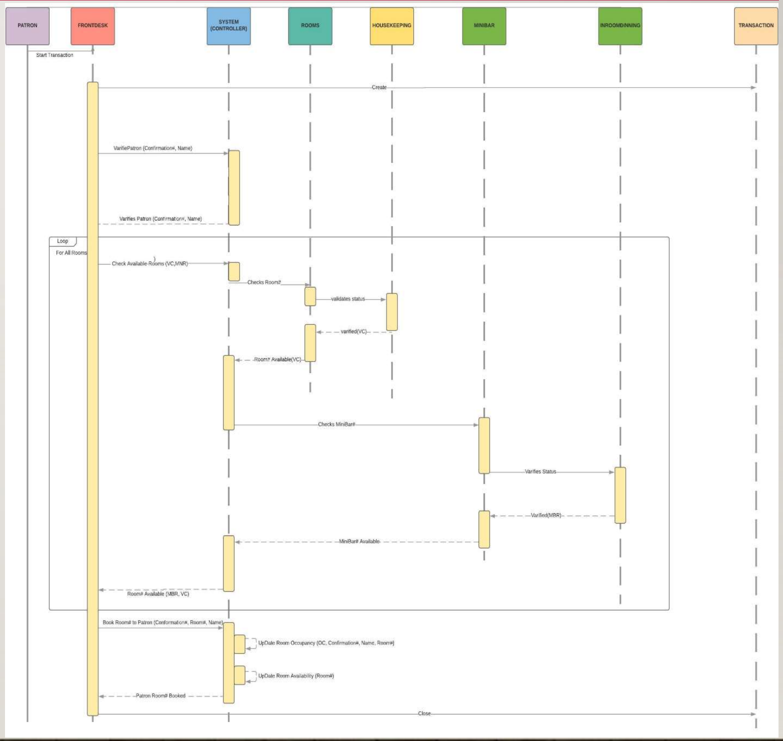
- What first object beyond the UI layer first receives and coordinates.
- A non-user interface object responsible for receiving or handling a system event.

INFORMATION EXPERT (ROOM, MEMBER)

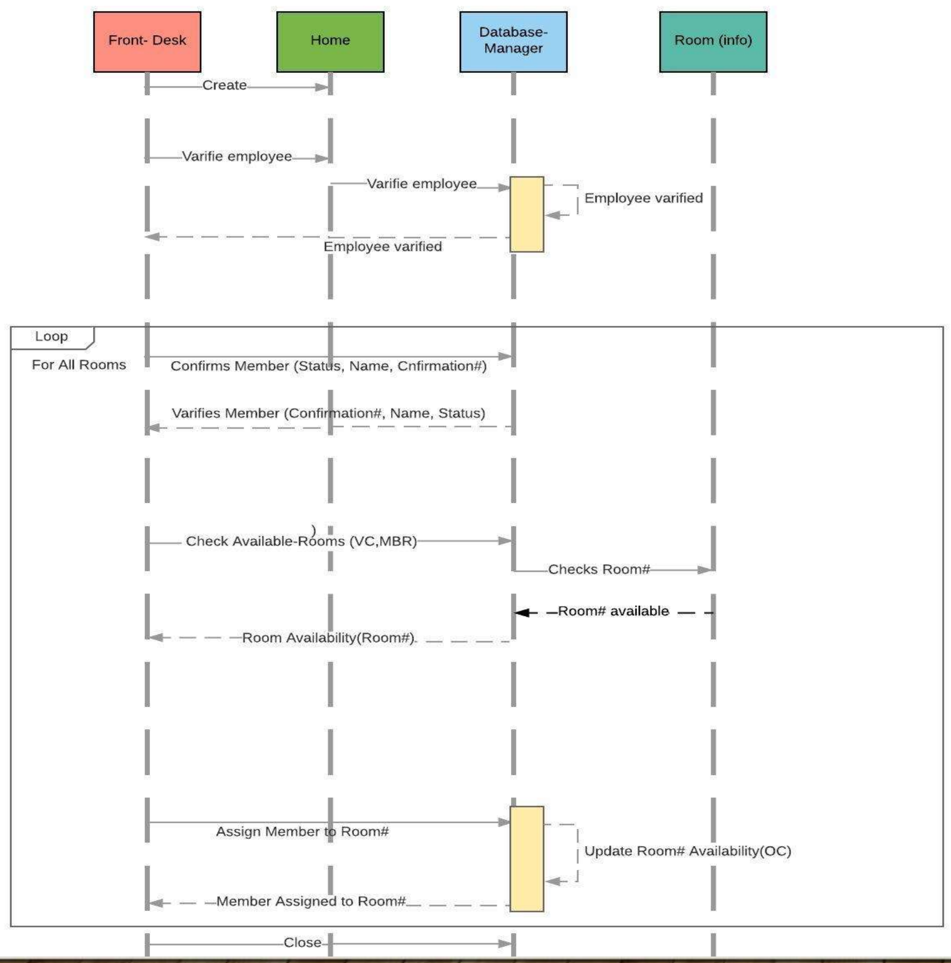
- Intuitively assigning responsibilities to classes.
- A class has (most of) the expertise needed to complete a task.
- That class is associated with others can provide any missing information.

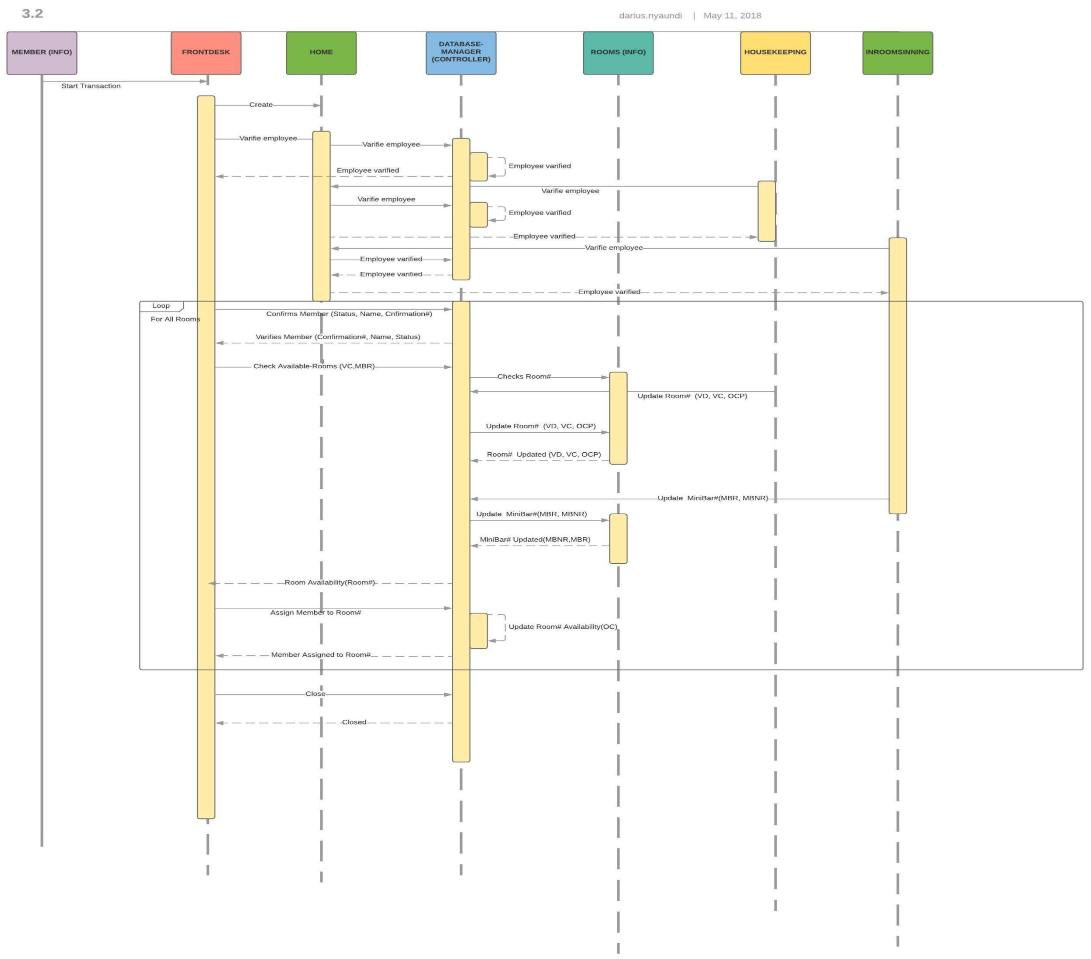
SYSTEM SEQUENCE DIAGRAM (BEFORE)


FRONTDESK
SYSTEM
StartNewSession
VarifiePatron (Confirmation#, Name)
Varifies Patron (Confirmation#, Name)
Loop
For All Rooms
Check Room Availibility(MBR, MBNR, VC, VD, OC)
Room Available (MBR, VC)
Book Room to Patron (Conformation#, Room#, Name)
UpDate Room Occupancy (OC, Confirmation#, Name, Room#)
UpDate Room Availability (Room#)
Close Session

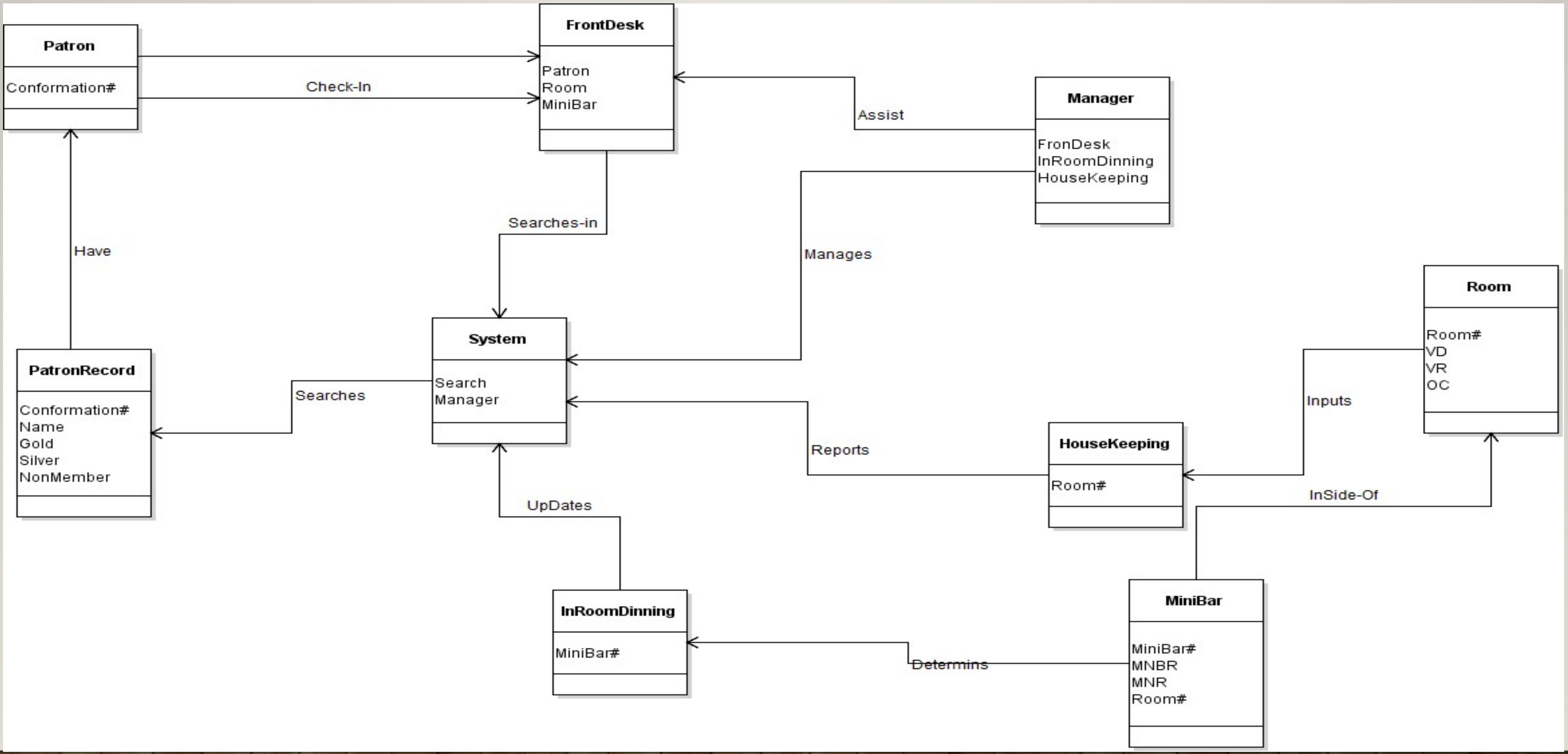


SYSTEM SEQUENCE DIAGRAM

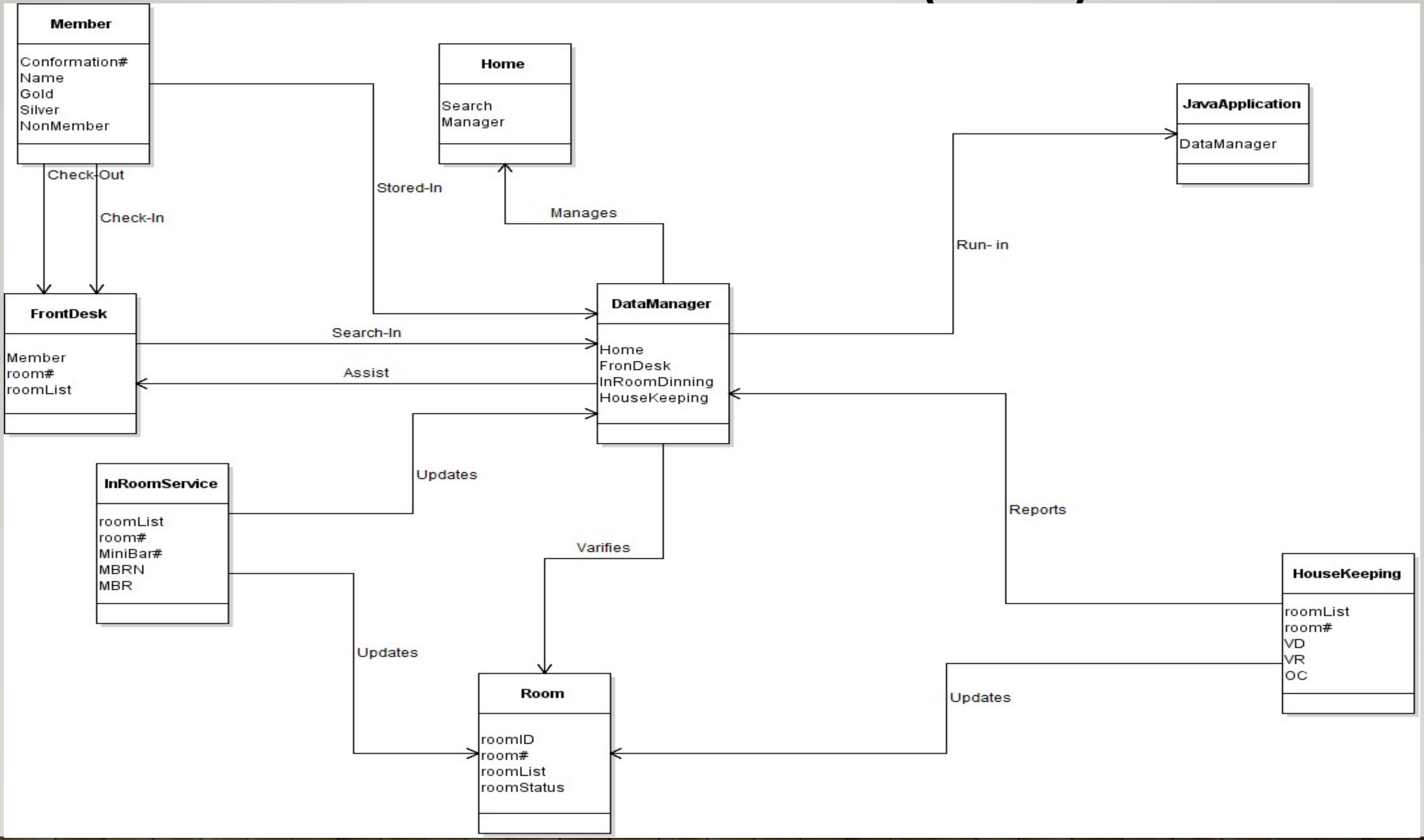




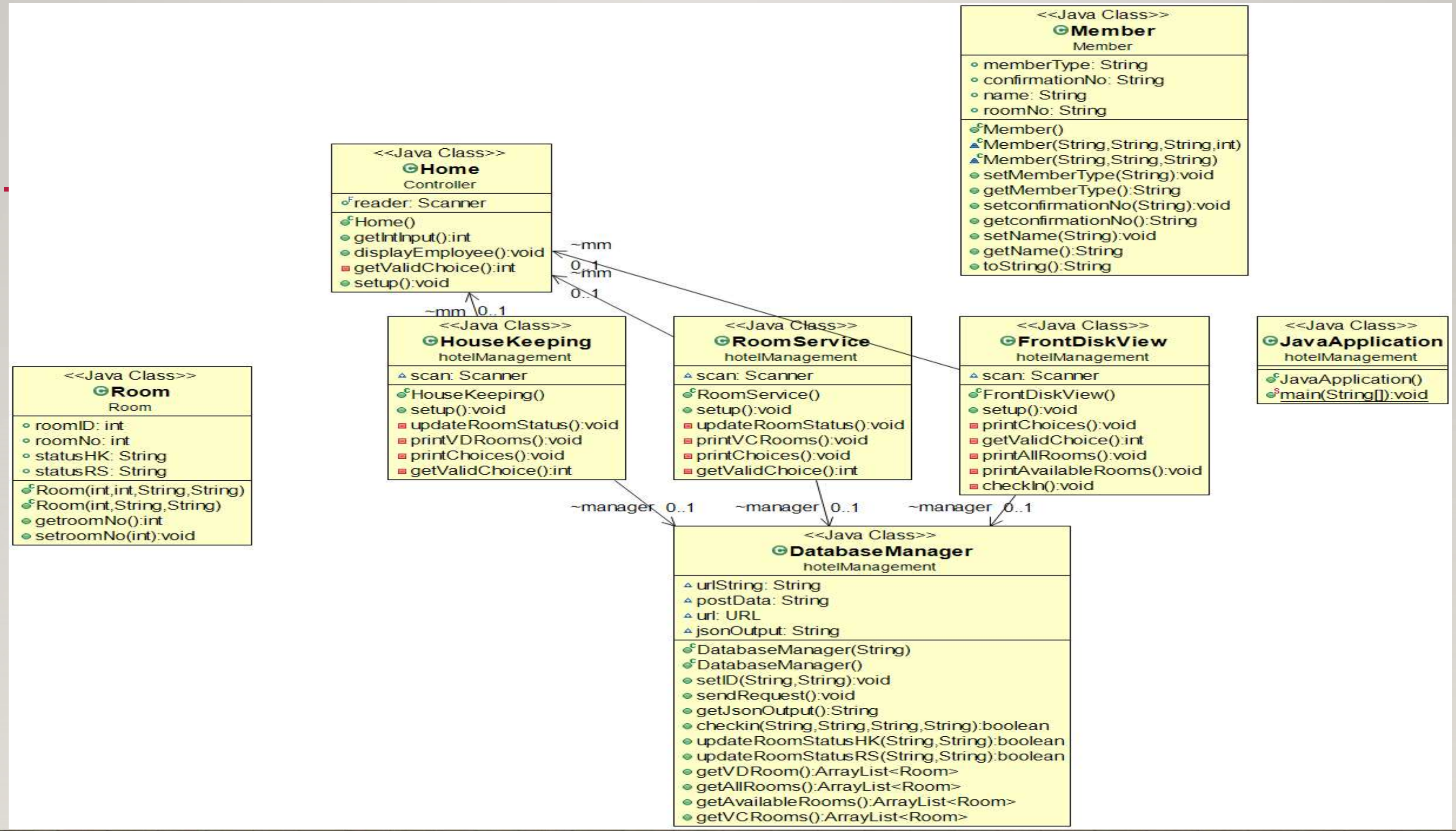
BEFORE (DOCD)


Patron
Conformation#
FrontDesk
Patron
Room
MiniBar
Check-In
Manager
FronDesk
InRoomDinning
HouseKeeping
Assist
Searches-in
Manages
Have
System
Search
Manager
PatronRecord
Conformation#
Name
Gold
Silver
NonMember
Searches
Room
Room#
VD
VR
OC
Inputs
HouseKeeping
Room#
Reports
UpDates
InSide-Of
InRoomDinning
MiniBar#
MiniBar
MiniBar#
MNBR
MNR
Room#
Determins

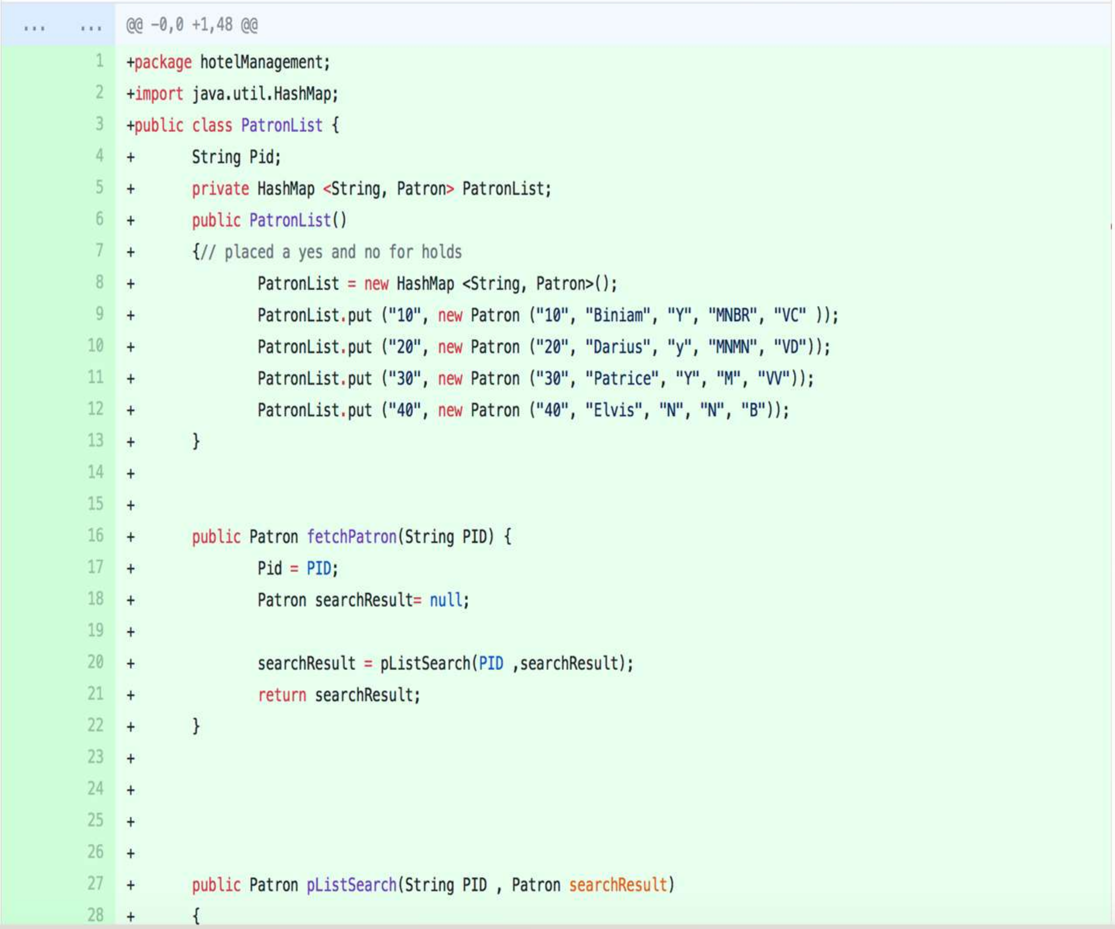
DOMAIN CLASS DIAGRAM (AFTER)



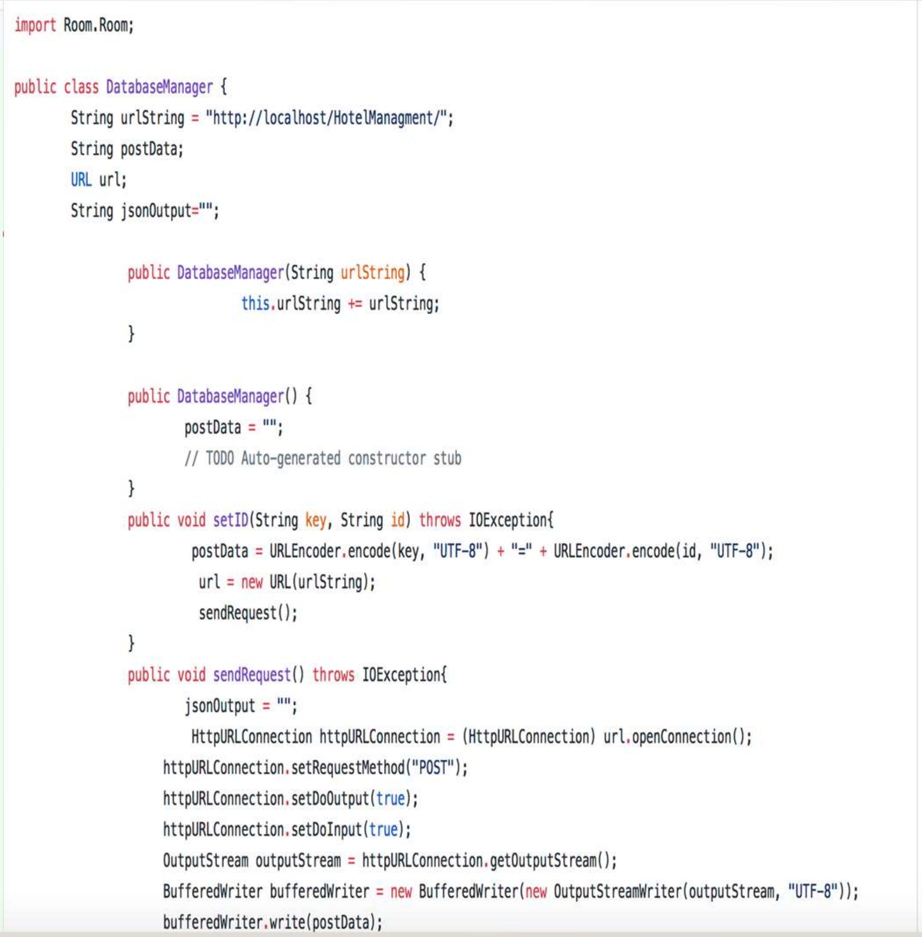
REVERSE ENGINEERED CLASS DIAGRAM



HASH CODE/DATABASE



```
@@ -0,0 +1,48 @@
+package hotelManagement;
+import java.util.HashMap;
+public class PatronList {
+       String Pid;
+       private HashMap <String, Patron> PatronList;
+       public PatronList()
+       {// placed a yes and no for holds
+               PatronList = new HashMap <String, Patron>();
+               PatronList.put ("10", new Patron ("10", "Biniam", "Y", "MNBR", "VC" ));
+               PatronList.put ("20", new Patron ("20", "Darius", "y", "MNMN", "VD"));
+               PatronList.put ("30", new Patron ("30", "Patrice", "Y", "M", "VV"));
+               PatronList.put ("40", new Patron ("40", "Elvis", "N", "N", "B"));
+       }
+
+
+       public Patron fetchPatron(String PID) {
+               Pid = PID;
+               Patron searchResult= null;
+
+               searchResult = pListSearch(PID ,searchResult);
+               return searchResult;
+       }
+
+
+
+
+       public Patron pListSearch(String PID , Patron searchResult)
+       {
```



```
import Room.Room;

public class DatabaseManager {
        String urlString = "http://localhost/HotelManagment/";
        String postData;
        URL url;
        String jsonOutput="";


                public DatabaseManager(String urlString) {
                                this.urlString += urlString;
                }


                public DatabaseManager() {
                        postData = "";
                        // TODO Auto-generated constructor stub
                }
                public void setID(String key, String id) throws IOException{
                         postData = URLEncoder.encode(key, "UTF-8") + "=" + URLEncoder.encode(id, "UTF-8");
                          url = new URL(urlString);
                          sendRequest();
                }
                public void sendRequest() throws IOException{
                        jsonOutput = "";
                         HttpURLConnection httpURLConnection = (HttpURLConnection) url.openConnection();
                    httpURLConnection.setRequestMethod("POST");
                    httpURLConnection.setDoOutput(true);
                    httpURLConnection.setDoInput(true);
                    OutputStream outputStream = httpURLConnection.getOutputStream();
                    BufferedWriter bufferedWriter = new BufferedWriter(new OutputStreamWriter(outputStream, "UTF-8"));
                    bufferedWriter.write(postData);
```

CODE SMELL

- Renamed methods
- Renamed variables
- Refactored code

CODE DEMONSTRATION

PROBLEM SOLVED

- Access to Database
- Push it to the cloud using Amazon Web Services (AWS)

RUNNING THE APPLICATION

- Hotel CheckIn System SuD uses mySql database called HotelManagementDB and this database has four tables:
  - Member
  - Room
  - RoomStatusHK
  - RoomStatusRS

RUNNING THE APPLICATION

- **Step 1:** Place the URL “http://35.173.198.1/phpmyadmin” CMSDB (CreateDBScript) in to your browser.
- **Step 2:** Enter a UserName and a new PassWord of database admin.
- **Step 3:** Run JavaApplication.
- **Step 4:** Home screen Select option 1 Front Desk, 2 House Keeping, 3 In Room Service -1Quit Application
- **Step 5:** Select option 1 Front Desk, and employee at front desk will be able to Option 1 Print rooms report Option 2 Print available rooms and Option 3 for Check-in Option -1 to go back to the Home Screen

RUNNING THE APPLICATION … *CONTINUED*

- **Step 5:** Select option 3 for Check-in Option, the user asked to enter the confirmation number followed by Patron’s name, Membership Type [Gold, Silver and Non Member] next the user will be prompted to enter the room number (If the room is not vacant the system will notify the user that the room is not vacant)
- **Step 6:** If the user selects option 2 from the Home Scree which is House Keeping, the following options will be available. The user will be able to 1 Print Room List and 2 Update Room Status and -1 to return to Home Screen.
- **Step 7:** If the user selects option 3 from the Home Scree which is In Room Service, the following options will be available.

THANK YOU

- And congratulations to those graduating this semester