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# AUTOMATED AIRPORT MANAGEMENT SYSTEM

***Abstract* – As the time passes and the population increases, the main task available in our hand is to manage this huge population such that, the needs of every user is satisfied. Such a problem arises during traveling from one place to another. At the airport we see long line of people waiting for the boarding passes. This process is firstly quite hectic for the user and then a lot of time wasted in this. We can also see there is a huge labor work available at the airport, but in today's fast-growing world digitalization is quite important. Hence a digital system is required to solve this problem.**

## INTRODUCTION.

Task of traversing from one place to another becomes a frantic job to do. A large amount of quality time is wasted in this process. To overcome this problem and to step into the world of digitalization we require a digital system to work with. For this it is recommended an automated airport management system. This system will help a user which is traversing through an airport. When a person travel through an airport he/she requires to carry three important documents with them, which include passport, visa and ticket. When a user is traveling through plane, he/she is required to reach the airport at least two to three hours before which waste a good amount of quality time of a user. In Indian airport it is seen that when a user enters the airport, he/she is asked to show their passport and ticket before entering the airport, for this there is a long line at the entrance of the airport accumulating crowd which can be removed through system of digitalization. This is achieved by online reservation system. (Through which the user can see their flight number departure time destination check in counter no. gate number). No need to stand in front of indicator board to check the details of the flight. It would all be made available through the system. Next with the help of details made available by the system the user can have the boarding pass and the gate number. Next after getting the boarding pass the user can now have two options currency exchange and baggage counter. At the baggage counter the baggage would be weighted and the data of its weight is sent to the system and accordingly the other information is provided to the user. Then if a person is going for an international trip the user needs to go through the immigration counter which also have long lines but through this system the task is done in no time. After the security check we reach into the free area where the user can have food and have other entertainment and if the user wishes to book a lounge the he can also do so through without any waiting or enquiry. The system would show all the details that a user seeks for.

## MOTIVATION.

Time is the most valuable quantity saving is would help us in many ways. Digitalization have been spreading around the world and our nation should also take a leap and have the facilities that it makes available to us. With the huge growth in the population we also need to manage the crowd and make all the users satisfied by the facilities. Airport system is an Agile system, it demands continuous assessments and developments to meet customer demands. From booking to getting into your flight includes several gateways which could be automated. Most importantly whenever a user is traveling through the airport the problem faced by him/her is due to wastage of time and un - comfortability faced by him due to language problem or the crowd this problem can be overcomed through this system.


## SYSTEM ARCHITECTURE.

1. The user can book tickets of their required flights through the online ticket reservation system. The user can book the flight of their choice, they can cancel the previously booked flight and the can also get the ticket details of their flight. The flowgorithm is shown in the below diagram no. 1
2. As the user enters the airport the PNR number of the ticket is checked by the system.
3. After the user had booked the tickets the user is provided with two details as they enter the flight number into the system. First they get the check in counter number and then the gate number.
4. After booking the ticket and collecting the boarding pass, the user can now go to the currency exchange counter as well as the baggage counter. The flowgorithm of this counter is shown below in diagram no. 2

5. After the baggage counter and the security check the user enter in the free area. Where they have to wait for their flight to arrive.
6. While the user is wait for their flights to arrive, they have various entertainments available for them. Waiting room consist of lounge, food court and casino too. Who's flowgorithm is mentioned below in diagram no. 3

DIAGRAM No. 1

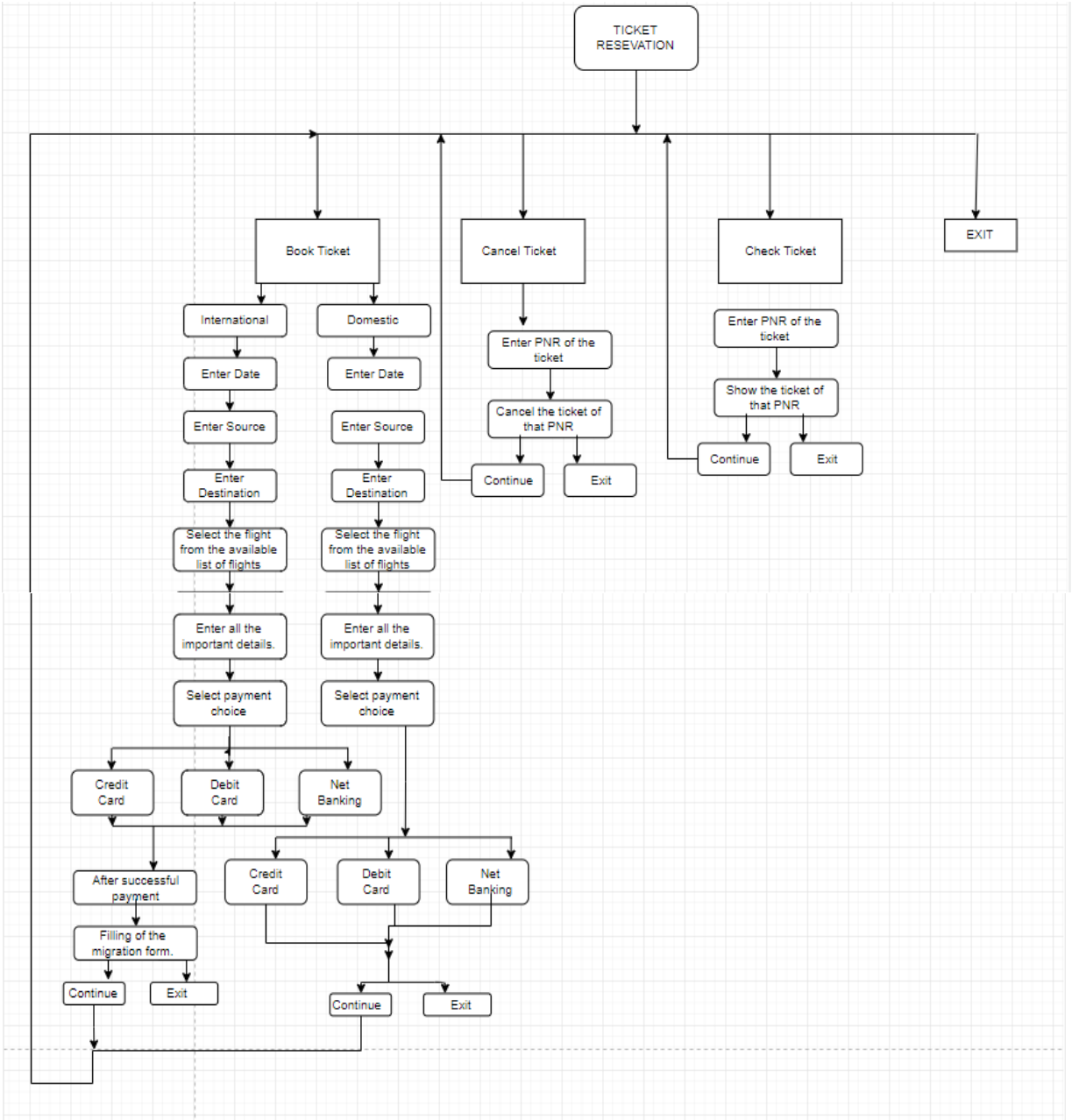


DIAGRAM No. 2

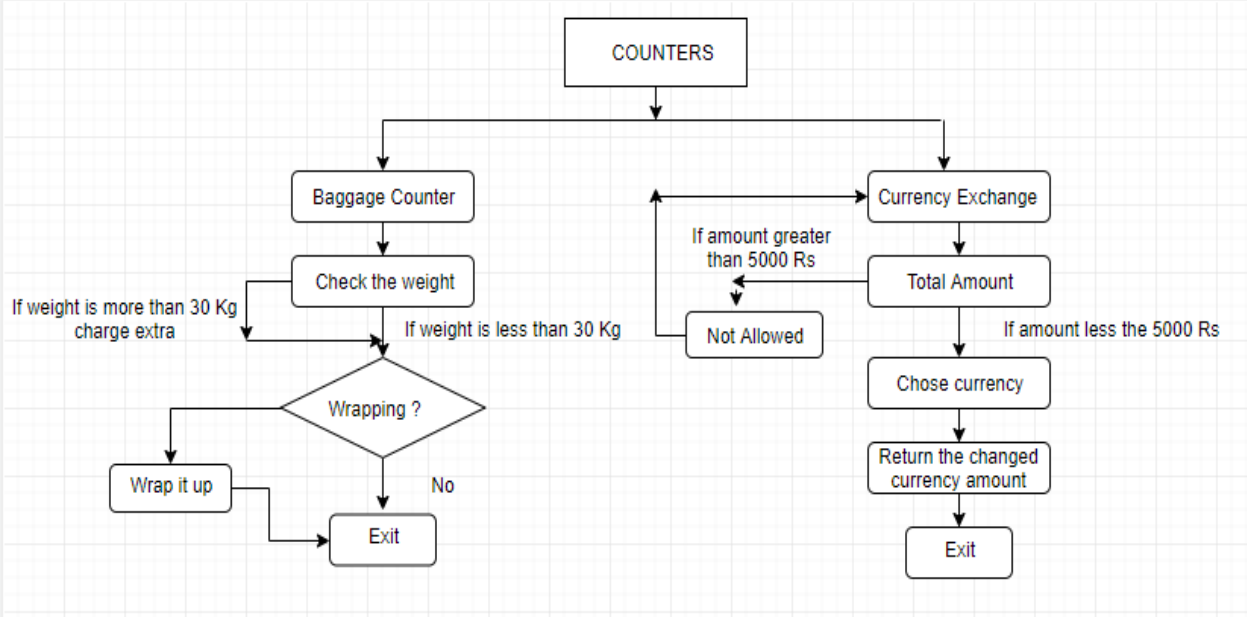
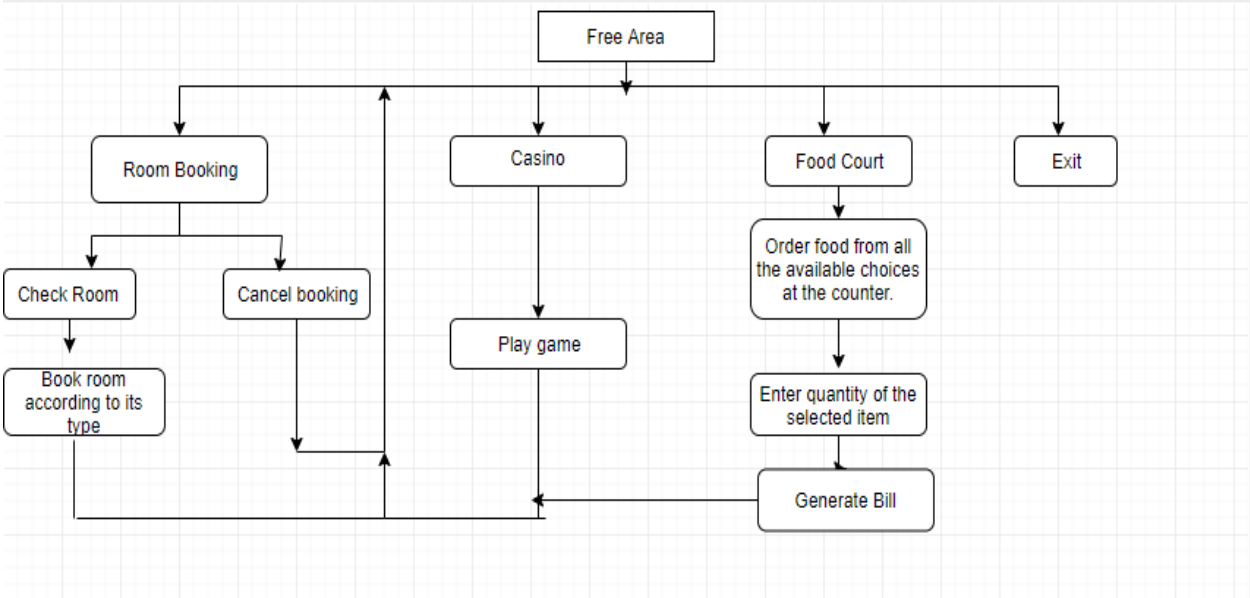



DIAGRAM Ni. 3



# WORKING

The user can book the tickets from the place they are comfortable with. After booking the tickets the user is made available with the check in counter number as well as the gate number as they enter the ticket PNR number into the system. The user then can enter the check in counter take the boarding pass and move on to the baggage counter. There is no need for the user to stand in front of the indicators board just to see which check in counter they need to in. At the baggage counter the user can have their bags wrapped up with the help of respective OTP received by the user can access their bag at the counter after landing. The currency exchange counter also made available to the user so that they can get their currency transferred into the required type. After the security check the user can enjoy their leisure time in the lounge made available by the airport. Through the system the user can easily get access to all the available room and can book the room according to their choice. At the food court the user is made available with all the choices they can have. For further entertainment they can play games at the casino.

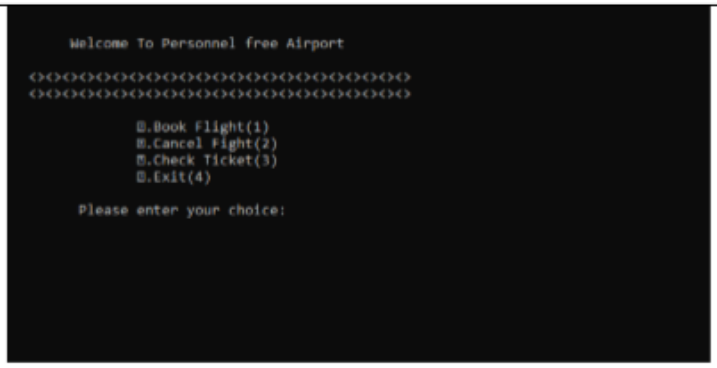
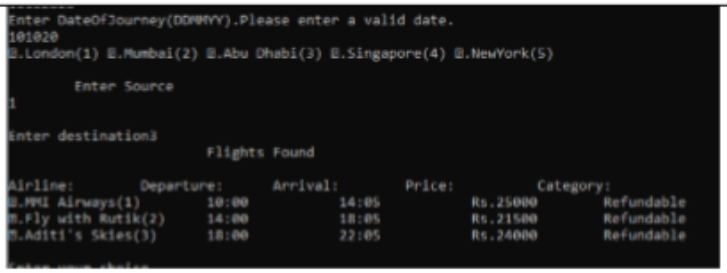
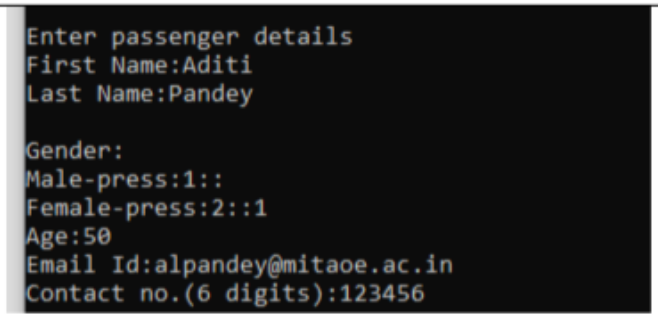
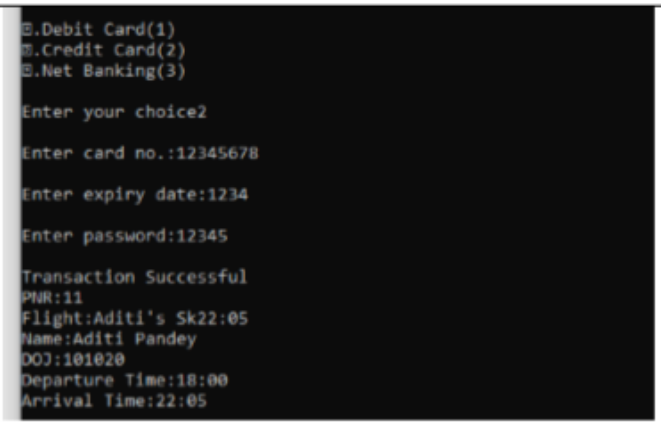
# METHODOLOGY

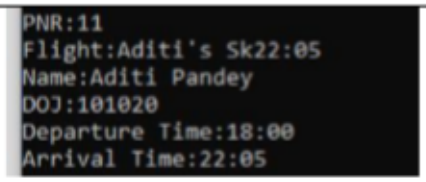
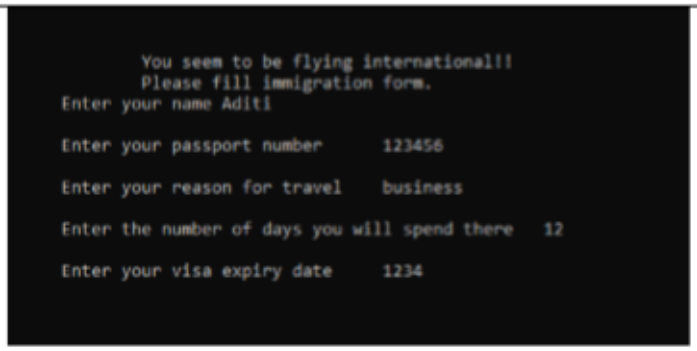
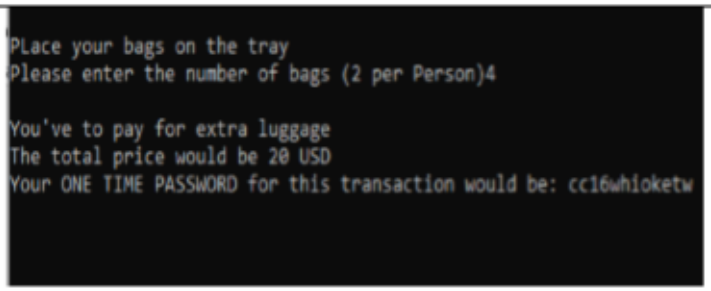
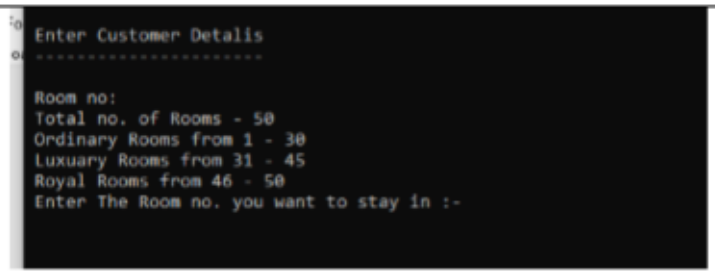
1. Flight Booking
2. Flight selection
3. Passenger Details
4. Payment & Conformation
5. Passenger Details
6. Immigration
7. Baggage Handling
8. OPT Generation
9. Concourse & Lounge
10. Room Bookings
11. Casino
12. Game
13. Restaurant
14. Orders

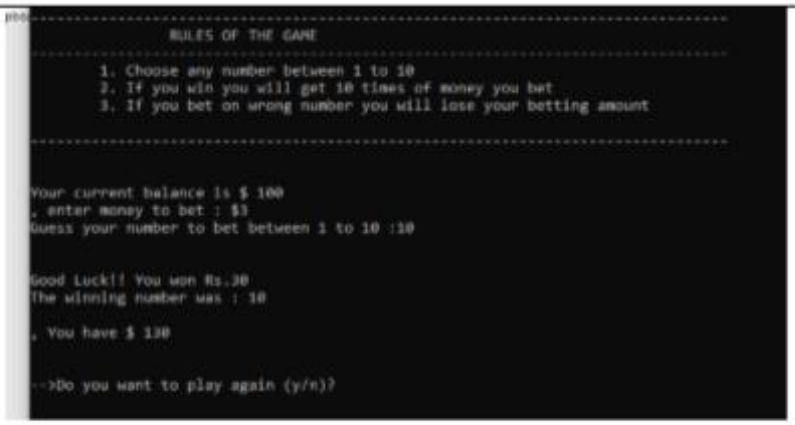
# TESTING AND EVALUATION.

For now, because of lack of facilities available the prototype is just a C++ program. Many things can be done to evaluate the prototype. Like an application can be made available at the mobile, like user can book ticket in their mobile phone on that application. When the user is entering the airport instead of checking the passport and ticket of each passenger, each user can get a specific number which could be cross checked by the data made available at the data bases and thus the long queues can be thus avoided. When the user enter their PNR number of the ticket into the application the user would be notified with their check-in counter no. and the gate no. through the mobile application in their hand no need for them to stand in front of the indicator board waiting for it to show it's specific details needed by the user as early as possible. With this application open in the mobile in hand the user can now scan their bag at the baggage counter no need of extra human labor required. The bag can be secured with the help of OTP which would be made available at the mobile application. While international travelling the user can have their currency changed into the required one through a machine made available at the airport which gives only one chance to every user. After crossing the security counter if the user has some leisure time, the user can have fun in that time with the help of facilities made available to the user. In the mobile application after getting the user done with all the required things, would show a lounge option. Here the user is made aware with all the facilities at the particular airport so that the user does not have to roam around to find something they need, and even they don't need to go looking for something which is not provided by the airport. Thus, various counter like room booking, food court and gaming area are made available at the mobile. So, the user gets aware of all the facilities they can have access to.

# OUTPUT

| Sr. No. | Method | Prototype | Data Structure |
|---|---|---|---|
| 1 | Flight Booking |  | Txt file No SQL Database |
| 2 | Flight selection |  | Hash Table |
| 3 | Passenger Details |  | Txt File |
| 4 | Payment & Conformation |  | Generated at Runtime |

| | | | |
|---|---|---|---|
| 5 | Passenger Details |  | AVL Tree for every Flight |
| 6 | Immigration |  | Linked List |
| 7 | Baggage Handling<br><br>& OPT Generation |  | Queue while Loading<br><br>Stack While Unloading |
| 8 | Concourse & Lounge |  | Graph or Shapefile |
| 9 | Room Bookings |  | Txt file |

| | | | |
|---|---|---|---|
| 10 | Casino |  | Randomised Array |
| 11 | Game |  | Secure Variable |
| 12 | Restaurant |  | 2D Linked List |
| 13 | Orders |  | Queue |

## CONCLUSION

Automated Airport Management System is an effective way to bring digitalization into existence. It would help us to save time and put it to good use. It would make the unimportant task easy and more comfortable to do. It reduces the franticness of the task and make it less frustrating for the users. Thus, it makes things more convenient.

## FUTURE SCOPE

The system can be upgraded with the help of the feedback of the user. As in future we are proposing to make a mobile application, it would help more. As well as machine could be made available at the counter with the data fed into them related to the application in the mobile of the user and together the labor work can be reduced and with this working together there would be huge step into the world of digitalization.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