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COSC 2436

Project 1: Design, Implementation, Problems and References

Program Design:

Overview: The program process ticket purchases for visitors, makes necessary queues for each ride and removes visitors from queues, simulate and complete rides. The program pauses execution for 1-5 seconds randomly to create a real simulation experience of the ride. There are 5 rides available for Visitors and they can choose the ride they want. Confirmation messages are shown after purchase of ticket with ticket type (child,adult or senior)and ride name, after being added to the queue of the ride, and at the start and end of ride. If the ride is not available, a message is shown "Ride not found! Try again." It is super easy for user to enter data and get results.

There are 2 classes in the program: Visitor() and ticketSystem().

Visitor():

- Interacts with user.
- All the input from user is taken here.
- It interacts with ticketSystem() class further to give desired output.
- It contains main method: input from user takes place here. Calling of other methods is here as well.
- After getting visitor's name, age and ride number all this is sent to Visitor.
- Visitor is accessible to all methods being called later (purchaseTicket, joinRideQueue, simulateRides)
- Visitor method takes in information and determines the TicketType based on age.
- Determines ridePreference based on Ride integer (comparing it back to the list displayed to user)
- All methods in ticketSystem is called in main method in order.

ticketSystem() :

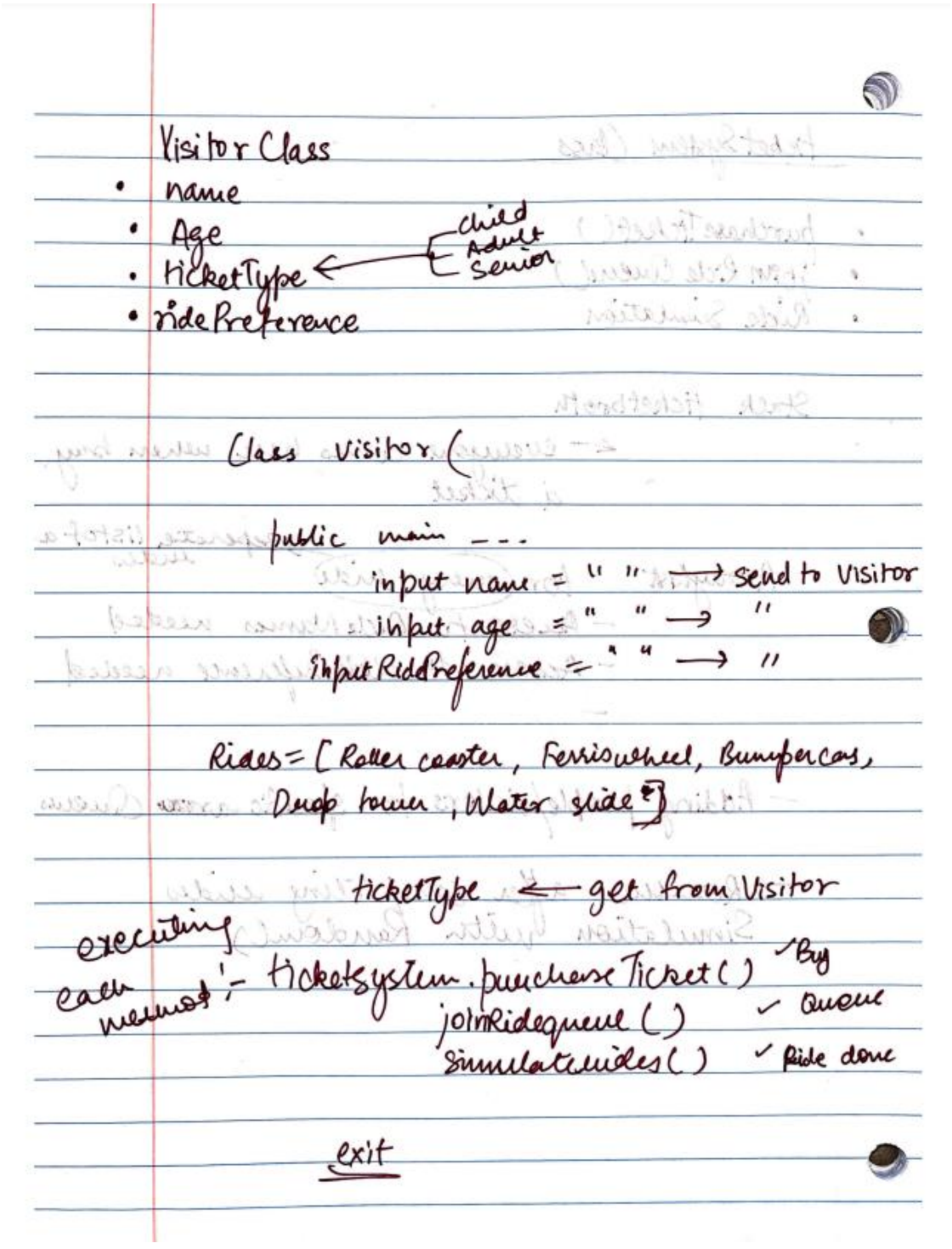
- Contains all methods to process ticket purchases, joining Ride queues and simulation of rides.

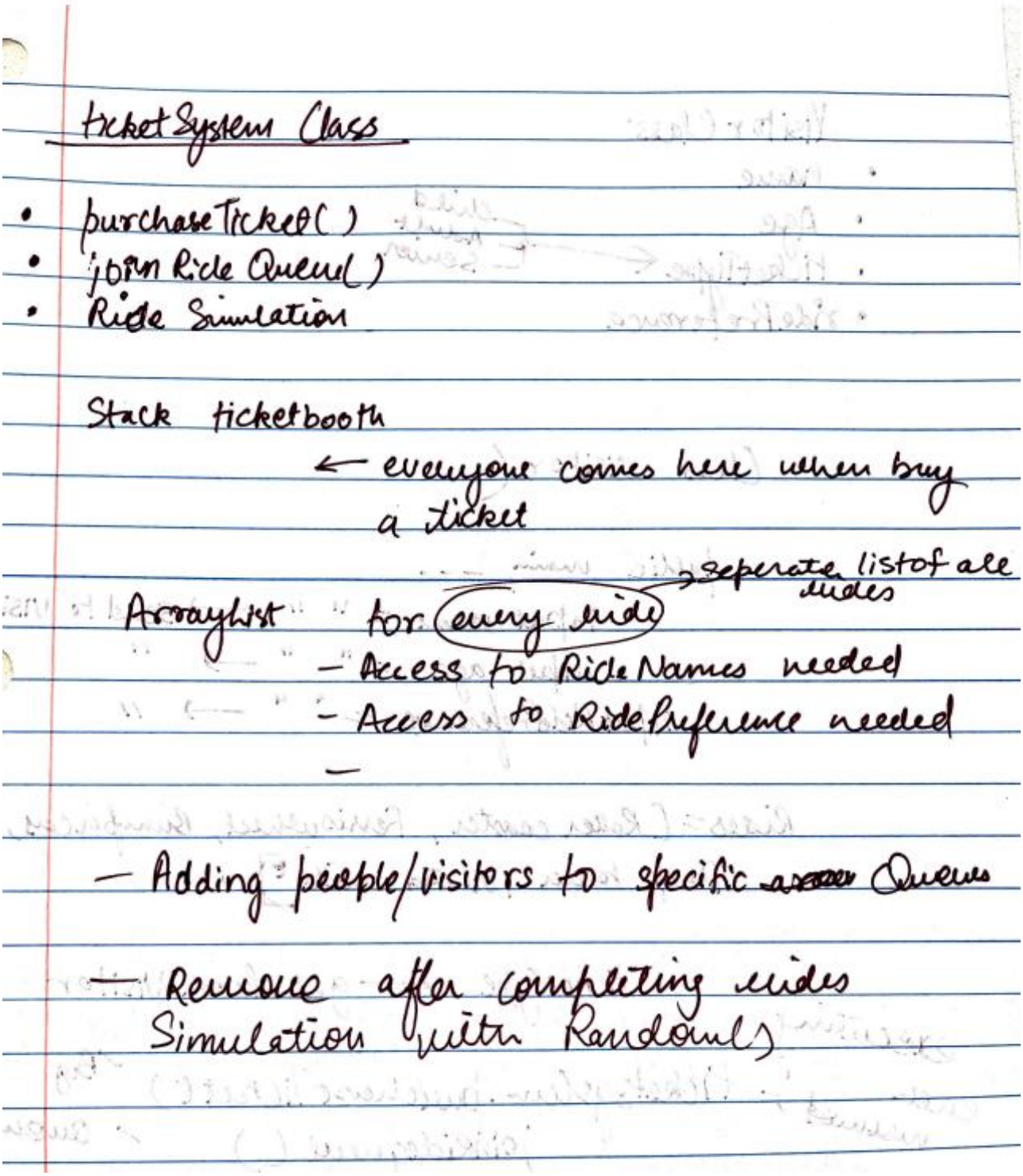
- It has Stack for all people who purchases tickets and Array list for each ride.
- Some confirmation messages are printed after the execution of each method.
- It has 4 methods.
- ticketSystem method is just adding a new linkedlist to each of the ride's queue. So they all can have their own queues.
- purchaseTicket method process purchasing of tickets by adding them to stack ticketBooth.
- joinRideQueue method adds visitors to queue of their Preferred ride.
- simulateRides method removes the visitor from queue and start the ride experience. Then, pause for 1-5 seconds randomly pretending like actual simulation of the ride and then gives the confirmation message that the visitor has completed the ride.

Together these two classes shows the desired output.

Implementation:

Initial idea:





After this, I had I made the rough program. Just a simple program to have main method and both classes watching the classes and objects lecture videos. Then I worked on the main

method first to create the interface I wanted to have. I got help from Array and Arraylist that I made while studying their presentations to help setup getting input from user and Array list for ride queues. Stacks and Queues video was helpful in designing last part of the program (simulation). It helped me with using random to simulate rides.

Problems:

- The main problem was writing my first program in java. I had to look at other videos of Dr. Javaher about creating first java program and how to actually create a project and class file (https://youtu.be/ha3iy-A_WpI?feature=shared) (https://youtu.be/8HMaG6IKHcA?feature=shared) .
- I had to google how to connect two classes, I was unsure how to access one class in other class. I googled an example to see how multiple classes work in java. I found that they were using this.variablename (https://systechgroup.in/blog-java-program-using-two-classes/) . I used it in my Visitor class and it was then accessible in other classes as visitor.variablename .
- Another problem was a silly one. Once I was done with my code. It was actually printing it all in one line. Then I had to find out how to create new lines in java. (https://www.geeksforgeeks.org/java-program-to-print-a-new-line-in-string/)
- Another problem was with output as well. It was not asking me about my ridePreference and was just running the rest of the program without knowing which ride I want. At this time This was not a great issue, some random typo and errors made it do that. And when I added new lines it was fixed.
- One of the problems was Time. I had exams for other classes. I started working on this project way ahead of time but still some work was left to be done in the week of submission. Another was my Anxiety, I was so nervous and worried about each step in the program. I think this was just because this was the first project and I was overwhelmed. I will work on both of these for next project.

Other references:

https://youtu.be/hVD79qXNLsM?feature=shared

stacks and queue lecture. The last example has simulation code, I got most help for simulation part in my code from that.

https://youtu.be/fWtAntJ0dpM?feature=shared

helped me with classes and joining classes. How to create instances.