

Recitation 5

October 7, 2021

Topics to Recap

- CRC
 - Classes
 - Responsibilities
 - Collaborators
- Class interactions
- Practice Exam

Examples for Recap

Create a CRC for the following scenario and implement those methods:

- Item class that represents an item at a supermarket.
- Shopper class that represents a customer and should contain a `pay` method that returns the amount that they need to pay the supermarket based on what is in their cart and updates their "wallet" if they have sufficient funds, otherwise return zero.
- Supermarket class that represents a supermarket and should contain a `checkOut` method that calculates the total cost of the shopper's carts, prints out the total cost of the cart and accept payment from the shopper and updates the supermarket's profit. Once the transaction is done, if the shopper has enough money, the method should print `Have a great day!`, otherwise print `Sorry, your funds are insufficient`. If the shopper is under 21, the cost of the alcoholic item should not be included in the total cost.

Recitation Problem Set

Create a CRC for the following scenario and implement those methods.

Rachel, Phoebe, Chandler, and Monica are at the airport on their way to Las Vegas to visit Joey.

- Chandler is quitting smoking cold turkey and now he is eating all the time to distract him. At the airport, he finds a magic vending machine that dispenses endless snacks but breaks down when someone wants cigarettes as it is a fire hazard. Implement a magic vending machine method that asks `What snack would you like?` and print with `Dispensing <snack> now` until the response is `cigarette` or `cigarettes`, in which it will print `Cannot dispense <snack>! Good bye..`
- Phoebe wants to take her guitar with her. Implement a method that determines the cost of the luggage based on its dimension and returns the cost.
 - The size of the guitar is
 - Length: 40 in
 - Width: 15 in
 - Height: 4 in
 - Weight: 12 lbs
 - The sizes and pricing of luggage are

- Carry-on (Free):
 - Length: 22 in
 - Width: 14 in
 - Height: 9 in
 - Limit 25 lbs
 - Checked Bag (\$35):
 - Overall dimensions (length + width + height): ≤ 62 in
 - Limit 50 lbs
 - Oversized Bag:
 - Weight: under 99 lbs: \$120
 - Overall dimensions > 62 in: \$150
- Rachel has all her toiletries in her carry-on bag, as represented in an array (ie. [2.3, 1.5, 3.0, 0.9, 1.2, 2.56, 2.98, 2.4, 1.4, 3.1, 1.2, 1.6, 2.1, 2.767, 2]). The rules are that each person can only carry 32 oz of liquid in their carry-on and each item has to be 3.3 oz or less. Create a method that can determine if Rachel can bring all her toiletries in her carry-on bag that returns a boolean.

If you are done early, try this:

- As Monica is checking in, the airport was hacked. Fortunately, the airport had backed up all the information an hour ago, but all the flight numbers are encrypted. Monica, Phoebe, Chandler and Rachel's flight leaves in fifteen minutes and they want to get on their flight on time. They decide that they will need decode their own flight numbers in order to board onto the right plane on time. Implement a method that decodes a string array of flight numbers where the first two characters represent the airline and the rest of the characters represent the flight number (ie. [JB9581, JB2222, JB8568, JB4821]). The method should return a string array of the decrypted flight numbers.
 - Decryption rules
 - If encrypted flight number is divisible by 4 or 7:
 - Divide by 4, add 141, multiply by 2
 - If encrypted flight number is divisible by 3:
 - Subtract 246
 - If encrypted flight number is not divisible by 3, 4 or 7 and is odd:
 - Divide 11, subtract 110, multiply by 6
 - If encrypted flight number is not divisible by 3, 4 or 7 and is even:
 - Multiply by 2, add 122
- Hint:
 - [https://docs.oracle.com/javase/7/docs/api/java/util/Arrays.html#copyOfRange\(T\[\],%20int,%20int\)](https://docs.oracle.com/javase/7/docs/api/java/util/Arrays.html#copyOfRange(T[],%20int,%20int))
 - [https://docs.oracle.com/javase/7/docs/api/java/lang/Integer.html#valueOf\(java.lang.String\)](https://docs.oracle.com/javase/7/docs/api/java/lang/Integer.html#valueOf(java.lang.String))

Some code to get you started:

```
public class Airport {
    public boolean liquidsTSACheck(Passenger p) {
        // implement method here
    }

    public int luggugeCheckIn(Passenger p) {
        // implement method here
    }
}
```

```

    }

    public void magicVendingMachine() {
        // implement method here
    }
}

```

```
public class Luggage {...}
```

```

public class Passenger {
    Passenger(String name, String flightNumber, double[] toiletries, Luggage[]
luggages){...}
    public String decryptFlightNumber() {
        // implement method here
    }
}

```

Submission

Submit the java files to gradescope when you are done.

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