The University of Texas at El Paso
Department of Computer Science
CS 3331 – Advanced Object-Oriented Programming
Instructor: Daniel Mejia
Fall 2023

Programming Assignment 5

Academic Integrity Statement:
This work is to be done in a team. It is not permitted to share, reproduce, or alter any part of this assignment for any purpose. Students are not permitted from sharing code, uploading this assignment online in any form, or viewing/receiving/modifying code written from anyone else besides teammates. This assignment is part of an academic course at The University of Texas at El Paso and a grade will be assigned for the work produced individually by the student.

Instructions:
This assignment is to be done in a team of 4 people. Your code must be written in Java. You must submit your assignment through Github Classroom. In the comment heading of your source code, you should write your name, date, course, instructor, programming assignment 6, lab description, and honesty statement.

Scenario:
You have recently been hired to work for *TicketMiner*, a company that sells tickets for sporting events, concerts, special events, etc. You have a many customers and events that are interested in creating their events using your system.

Part A:
Read the requirements described in Part B to complete Part A. Part A should be completed before Part B

1. Write a refactored UML Class Diagram to structure your code using the classes, requirements, and concepts described in Part B
2. Write a level II UML Use Case Diagram based on Part B
    a. 5 Use Cases
    b. 2 Actors
    c. 1 extend
    d. 2 include

© 2023, The University of Texas at El Paso.

3. Write a UML State Diagram describing purchasing event ticket(s) as an individual customer
4. Write 3 Use Case Scenarios for any portion of the system

Part B

1. Refactor the code
    a. The code should handle all functionality from Programming Assignment 4 (PA4)
    b. Fix anything that should be corrected
        i. Appropriate data structures
        ii. Appropriate use of objects
        iii. Relationships between objects
        iv. Algorithms and complexity
2. Make *The TicketMiner Company* Money
    a. Add service fees to purchases (before any potential discount)
        i. $2.50 convenience fee for every transaction
        ii. 0.5% (.005) service fee for every ticket (e.g., if a single ticket costs $100, the service fee will be $0.50)
        iii. 0.75% (.0075) charity fee for every ticket (e.g., if a single ticket costs $100, the charity fee will be $0.75)
        iv. Keep track of the amount of money collected for fees in each event
            1. Convenience fee
            2. Service Fee
            3. Charity Fee
    b. Discounts should only be applied to the subtotal
    c. Amount charged to customers should be modified
        i. Fees = $2.50 + 0.5% of # of tickets in a transaction + 0.75% of # of tickets in a transaction
        ii. Subtotal = Ticket Costs (i.e., considering any potential discounts) + fees
        iii. Tax is computed on the subtotal
        iv. Total = Subtotal + tax
3. Add Customer Functionality
    a. Allow a user to cancel a ticket purchase
        i. The user will be able to select from a list of their ticket purchases and select which ticket they want to cancel
        ii. Return money to the customer's account
            1. Only return ticket costs (do not return service/charity/convenience fees)
            2. Profit/Income of event should be adjusted appropriately
        iii. Return seats to the event – which will be available for purchase

© 2023, The University of Texas at El Paso.

4. Add manager/admin functionality
    a. Compute/print the amount of money gained by *The TicketMiner Company* for any event (manager/admin will select event)
        i. Service Fees
        ii. Convenience fees
        iii. Charity Fees
        iv. Total Fees
    b. Compute/print the amount of money gained by *The TicketMiner Company* for all events
        i. Service Fees
        ii. Convenience fees
        iii. Total Fees
    c. Cancel an event
        i. Allow a manager/admin to cancel an event
        ii. Return all money to the customers (including service fees)
5. Write the Javadoc for your system
6. Write electronic tickets for 8 customers (Dr. Mejia, Ali, each member of the team, and two of your favorite Disney characters on the list)
7. Write the lab report describing your work (template provided)
    a. Any assumptions made should be precisely commented in the source code and described in the lab report.
    b. Write an additional section describing the demo of your classmates
        i. What questions did you have about your classmate's functionality?
        ii. What concerns do you have about your classmate's functionality?
        iii. How did you try to break it?
            1. What test cases did you use?
    a. Explain why and how this is a black or white box texting
8. Complete an individual code review as a team code (template provided)
9. Schedule a demo with the TA/IA
10. **If submission is passed the deadline** Your report must have an additional section entitled "Why I submitted late". In that section, explain the reason why your submission was late. (Note: you will still be penalized the typical late penalty)

Deadlines:

November 14, 2023, by 11:59pm (Current Progress Commit) – GitHub classroom:

1. UML Class Diagram Progress (.pdf)
2. UML Use Case Diagram Progress (.pdf)
3. UML Class Diagram (.pdf)
4. UML Use Case Diagram (.pdf)

© 2023, The University of Texas at El Paso.

5. UML State Diagram (.pdf)
6. UML Use Case Scenarios (.pdf)
7. Current Progress Source Code (.java) – Commit current progress up to this point

For each item:

a. Does not have to be complete
b. Should be a significant amount of work done (as determined by instructional team)
c. TA/IA will review for progress only

<u>November 19, 2023, by 11:59pm - GitHub Classroom:</u>

1. UML Class Diagram (.pdf)
2. UML Use Case Diagram (.pdf)
3. UML State Diagram (.pdf)
4. UML Use Case Scenarios (.pdf)
5. Lab report (.pdf file)
6. Source code (.java files)
7. JavaDoc (entire doc folder)
8. Updated Event Sheet (.csv)
9. Updated Customer Sheet (.csv)
10. Electronic Ticket for 7 customers
11. Log (.txt)

© 2023, The University of Texas at El Paso.