CSE212

SOFTWARE DEVELOPMENT METHODOLOGIES
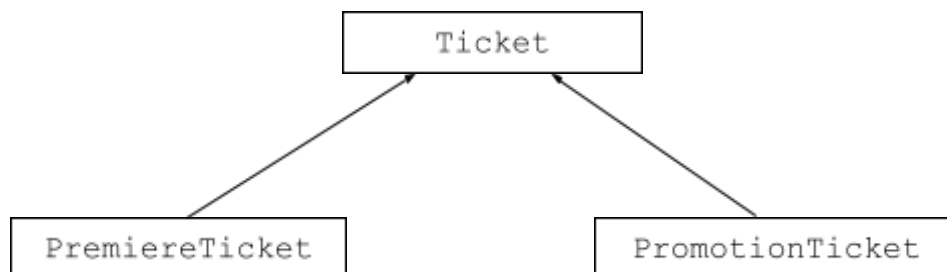
FALL 2022

LABWORK 3 – SECTION 1

Below, you can find the description of your labwork for today. You can also find the expected output of this code in the Application Walkthrough section. You are going to improve your Theater Reservation and Ticketing System on top of previous week's labwork by adding Inheritance capabilities.

The *Ticket* class represents an ordinary ticket which is bought on or before the day of the show. The *PremiereTicket* class represents a ticket to the world premiere of the *Play*. And finally, the *PromotionTicket* class represents a ticket which the ticket price is discounted according to a special access code.

You should be using your *Ticket* class from your previous labworks and adding the new classes according to the inheritance hierarchy depicted above.

You should also add a *calculatePrice()* method in your *Ticket* class which returns a fixed value of 200. The *PremiereTicket* class should override *calculatePrice()* method by increasing the price value by 100%. The *PromotionTicket* class should have an instance variable called *accessCode* which will be asked when buying the ticket. It should also override the *calculatePrice()* method by discounting the existing price value by the *accessCode*'s fourth character multiplied by 10%. (If the *accessCode* is TMY3J then you should discount the price by 30%)

You should add a submenu when creating tickets to select between *Ticket, PremiereTicket,* or *PromotionTicket.*

Application Walkthrough

```
1. Create new Play
2. Buy a Ticket
3. Buy a Ticket with seat number
4. Display all Tickets
0. Exit
1

Event Name: Macbeth
Start Time: 20:00
Date: Oct 20 2022
Duration (in hours): 2

Play created!

1. Create new Play
2. Buy a Ticket
3. Buy a Ticket with seat number
4. Display all Tickets
0. Exit
2

1. Create Ticket
2. Create PremiereTicket
3. Create PromotionTicket
1

Audience Name: Bob
Event Name: Macbeth

Play found!
Ticket is purchased!

1. Create new Play
2. Buy a Ticket
3. Buy a Ticket with seat number
4. Display all Tickets
0. Exit
2

1. Create Ticket
2. Create PremiereTicket
3. Create PromotionTicket
2

Audience Name: Alice
Event Name: Macbeth

Play found!
PremiereTicket is purchased!

1. Create new Play
```

```
2. Buy a Ticket
3. Buy a Ticket with seat number
4. Display all Tickets
0. Exit
2

1. Create Ticket
2. Create PremiereTicket
3. Create PromotionTicket
3

Audience Name: James
Event Name: Macbeth
Access Code: RTH2J

Play found!
PromotionTicket is purchased!

1. Create new Play
2. Buy a Ticket
3. Buy a Ticket with seat number
4. Display all Tickets
0. Exit
4

Bob is going to Macbeth which starts at 20:00 on Oct 20 2022 and ends at
22:00 with Ticket price 200 TL

Alice is going to Macbeth which starts at 20:00 on Oct 20 2022 and ends at
22:00 with PremiereTicket price 400 TL.

James is going to Macbeth which starts at 20:00 on Oct 20 2022 and ends at
22:00 with PromotionTicket price 160 TL.


1. Create new Play
2. Buy a Ticket
3. Buy a Ticket with seat number
4. Display all Tickets
0. Exit
0
```