

PROGRAMMING TECHNIQUE II PROJECT

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TOPIC

**THEME PARK TICKET SYSTEM**

INTRODUCTION

This C++ programming project on THEME PARK TICKET SYSTEM has 4 classes, **alacarte, package, member, sign in, sign up and gift class** with data members like number of child, adult and retired citizen of tickets, type of package, outdoor, indoor or 2 doors, type of gift. The number of tickets determines the type of package. For example, a customer buys 2 tickets which indicate to couple package, and they will get a small gift. The small gift also varies depend on customer’s lucky draw. In each category of gifts (small, medium, large, mega), there is 3 different items to be chosen by customers. For the family package of containing 2 children and 2 adult tickets, they will be received a large gift. If the customer is a verified member, the customer will be given a discount on price. Platinum members will get 20% discount, whereas golden members get 10% discount, but non-member got normal price with no discount.

CLASS

In this program, there are 6 classes which including ala carte, package, gift, member, sign in and sign up class.

Class alacarte

{

outdoorA() / indoorA() / outInA()

{

If (child) price = fixed price \* child ticket \* days;

Else if (adult) price = fixed price \* adult ticket \* days;

Else if (retired citizen) price = fixed price \* retired citizen ticket \* days;

Else cout "The group doesn't exists";

}

}

The simple demonstration above is the ala carte class. The class has 3 major functions, which are outdoor, indoor and outdoor&indoor. In the outdoor function, it will execute selection statements that are child, adult and retired citizen. Different category of people will be given various prices. The group price will be calculated by multiplying various fixed price with number of group ticket and number of day. Similarly, the indoor and outdoor&indoor functions also would execute the same process.

class package

{

printPrice()

{

If outdoor, proceed function outdoorPrice();

Else if indoor, proceed function indoorPrice();

Else if outdoor&indoor, proceed function outdoorIndoorPrice();

}

outdoorPrice() / indoorPrice() / outdoorIndoorPrice()

{

If (adult==2) purchase couple package;

Else if (child==2 && adult==2) purchase family package;

Else purchase as ala carte;

}

}

While for the package class, it will get the prompt of door from customer. If it is outdoor, indoor and outdoor&indoor, they will proceed different functions (outdoorPrice/ indoorPrice/ outdoorIndoorPrice). For example in outdoorPrice function, it will first check number of child, adult, retired citizen tickets. The customer will purchase couple package if the number of adult ticket is 2. Besides that, family package can be bought if the number of child and adult is 2 respectively. Otherwise, the customer buys as ala carte which inherited from ala carte class.

class member

{

This is a class used for member registration, it consist of two subclass such as SignIn and SignUp.

}

class SignUp

{

Class SignUp function’s is to receive information from the user and register their membership. Which later on send the information out to another database for storage.

}

class SignIn

{

This is a normal sign in function class, which allows user to verify their registration or sign in to get discount for their membership privilege.

}

class gift

{

void Gift::typeOfGift()

{

(each category contains 3 different gifts, customer selects one of them randomly)

If (DiscountPrice < 100)

Small gift – sticker, keychain, food voucher

If (DiscountPrice >= 100 && DiscountPrice < 1000)

Medium gift – popcorn, water bottle, couple’s T-shirts

If (DiscountPrice >= 1000 && DiscountPrice < 2000)

Large gift – movie tickets, limited edition USB, shopping voucher

If (DiscountPrice >= 2000)

Mega gift – branded shopping voucher, concert ticket, free buffet

}

}

The gift class, the discount price will be aggregated from package class. The small, medium, large and mega gift will first be randomized. Then, the typeOfGift function in the class will execute selection statements. From the beginning, the discount price of customer that below $100, they will get a gift randomly which is from 3 small gifts. The discount price ranges then rise exponentially, and the gifts also become more valuable.

|  |
| --- |
| Ala carte |
| -Door : int  -Group : int  -Ticket : int  -Days : int  -Membership : int  -cTicket : int  -aTicket : int  -rcTicket : int  -groupPrice : double |
| + outdoorA()  + indoorA()  + outInA() |

|  |
| --- |
| Package |
| - totalPrice : static double  - count : static int |
| +Package(int, int, int)  +Package(int, int, int, int, int, int)  + getDoor()  + getGroup()  + getDays()  + getPackage()  + getMembership()  + getTotalPrice()  + getDiscount()  + getDiscountPrice()  + outdoorPrice()  + indoorPrice()  + outdoorIndoorPrice()  + printPrice() |

|  |
| --- |
| Gift |
| - totalPrice : double  - gift : string  -smallGift : int  -mediumGift : int  - largeGift : int  - megaGift : int  - pack : Package |
| +Gift()  +Gift(double, Package)  +setTotalPrice(double)  +setGift(string)  +getTotalPrice()  +getGift()  +typeOfGift() |

|  |
| --- |
| Member |
| -setName(string) : void  -setIC(string) : void  -setStatus(int) : void  -setGen(char) : void  -getName() : string  -getIc() : string  -getStatus() : int  -getGen() : char |
| + friend istream& operator>>(istream &,Member &);  + friend ostream& operator<<(ostream &, Member const &); |

|  |
| --- |
| SignIn |
| - search : string |
| + getSearch : string  + Verify() : void |

|  |
| --- |
| SignUp |
| + Register() : void |