Ticket Booking System – Technical Document

**REQUIREMENT STATEMENT**

We were tasked to create a ticket booking system that would calculate the prices for Adults, Teens and Children in the booking as well as providing a total price for all tickets booked. There were limiting parameters of between 2 and 5 tickets booked, at least one adult ticket being booked, the program terminating if this is the case and no one under the age of two years old in the booking. The program should be user friendly and print it’s results clearly. The program itself should have excellent readability with correct indentation, labelling and relevant naming of variables.

**DATA DICTIONARY**

|  |  |  |
| --- | --- | --- |
| **Name** | **Scope** | **Description** |
| **scr** | global | Scanner class used to get the user input from the console (Scanner) |
| totalPeople | local | Number of family members (int) |
| age | local | age for the family member (int) |
| numberOfAdults | local | Number of adults in the family (int) |
| numberOfTeenagers | local | Number of teenagers in the family (int) |
| numberOfChildren | local | Number of children in the family (int) |
| constant priceAdult | local | Ticket price for adults (double) |
| constant priceTeenager | local | Ticket price for teenagers (double) |
| constant priceChild | local | Ticket price for children (double) |
| totalPriceForAdults | Local | Adult’s ticket price (double) |
| totalPriceForTeenagers | Local | Teenager’s ticket price (double) |
| totalPriceForChildren | Local | A child’s ticket price (double) |
| totalPrice | Local | Total tickets’ price for the family (double) |
| ticketDetails | Local | A variable that holds all the details that is, ticket prices for all adults, teenagers, and children as well as the total final price (String) |

**METHODS**

**main** - The main method is a void method that I used to define integers for the number of Adults, Teens and Children at the programs beginning. These were set at zero and then sent to the **getInput** method.

**getInput -** This is a void method that I used to get the users input for the number of people and what their ages are. I began by using an *if statement* to check that between 2 and 5 tickets were booked, if there were not the program would print an error and prompt the user to try again. I used a *for statement*to determine what ticket category (Adult, Teen or Child) each person was assigned to by their age. I added an *else if* parameter to check if the age is less than 2, if this is the case the program will restart the **getInput** method and print an error warning so they can try again. I added another *if statement* after the program had received input to ensure that at least 1 adult ticket had been booked. If there was none the program would print a booking termination message and the program would *exit.*

**priceCalculator -** This is a void method used to calculate the cost of the tickets per age category. I set integers for the ticket prices per age category so they could be easily changed later if ticket prices change. I then set integers for the total ticket cost per category by multiplying the price by the number of people who are in that category.

**print** – This void method was used to print out the details of the booking in a clear and concise fashion. Due to a numerical error I was getting I decided to calculate the total price of tickets within this method rather than in the **priceCalculator** method and pass the integer through.

**CODE**

/\*\* Robert Lothian

\* Program to calculate the price of theatre tickets

\* 17/11/20

\*/

**import** java.util.Scanner;

**public** **class** theatreTickets {

**static** Scanner *sc*=**new** Scanner(System.***in***);

//main method//

**public** **static** **void** main(String[] args)

{

**int** numberOfAdults = 0;

**int** numberOfTeenagers = 0;

**int** numberOfChildren = 0;

*getInput*(numberOfAdults, numberOfTeenagers, numberOfChildren);

}

**public** **static** **void** getInput(**int** numberOfAdults,**int** numberOfTeenagers, **int** numberOfChildren)

{//determine the total number of adults, teenagers, children and total number of people

System.***out***.print("Please enter the number of people in your group: ");

**int** numberOfPersons = *sc*.nextInt();

//code to limit input to between 2 and 5

**if** (numberOfPersons<2 || numberOfPersons>5)

{

System.***out***.print("The maximum number of people in a group is 5 and the minimum is 2, please try again: \n");

*getInput*(numberOfAdults, numberOfTeenagers, numberOfChildren);

}

//code to find ages and compile total number of adults, teenagers and children

**else**

{

**for**(**int** i=1;i<=numberOfPersons;i++)

{ System.***out***.print("Please enter the age of person " +i+ ": ");

**int** age = *sc*.nextInt();

**if** (age>=20)

{

numberOfAdults++;

}

**else** **if** (age>=11 && age<20)

{

numberOfTeenagers++;

}

**else** **if** (age>=2 && age<11)

{

numberOfChildren++;

}

**else** **if** (age<2)

{//restart booking system if someone enters an age that is less than 2

System.***out***.println("Age entered is not valid, please restart booking");

*getInput*(numberOfAdults, numberOfTeenagers, numberOfChildren);

}

}

**if** (numberOfAdults<=0)

{//to terminate program if adult ticket is not booked

System.***out***.println("Booking terminated. One adult must be booked.");

System.*exit*(0);

}

}//to calculate total number of people booked

**int** totalPeople = numberOfAdults+numberOfTeenagers+numberOfChildren;

*priceCalculator*(numberOfAdults,numberOfTeenagers, numberOfChildren, totalPeople);

}

**public** **static** **void** priceCalculator(**int** numberOfAdults,**int** numberOfTeenagers, **int** numberOfChildren, **int** totalPeople)

{//calculations for total ticket prices

**double** priceAdults = 10;

**double** priceTeenagers = 7;

**double** priceChildren = 2;

**double** totalPriceForAdults = priceAdults\*numberOfAdults;

**double** totalPriceForTeenagers = priceTeenagers\*numberOfTeenagers;

**double** totalPriceForChildren= priceChildren\*numberOfChildren;

*print* (numberOfAdults,numberOfTeenagers, numberOfChildren, totalPeople, totalPriceForAdults, totalPriceForTeenagers,

totalPriceForChildren, priceAdults, priceTeenagers, priceChildren);

}

**public** **static** **void** print(**int** numberOfAdults, **int** numberOfTeenagers, **int** numberOfChildren,

**int** totalPeople, **double** totalPriceForAdults, **double** totalPriceForTeenagers,

**double** totalPriceForChildren, **double** priceAdults, **double** priceTeenagers, **double** priceChildren)

{//print results

System.***out***.println("Here are your reservation details\*\*\*\*\*\*\*\*");

System.***out***.println("Number of people in group = "+totalPeople);

System.***out***.println("Number of adults = "+numberOfAdults +". At £"+priceAdults+" per adult. The total price for adults is £" +totalPriceForAdults);

System.***out***.println("Number of teenagers = "+numberOfTeenagers +". At £"+priceTeenagers+" per teenager. The total price for teenagers is £" +totalPriceForTeenagers);

System.***out***.println("Number of children = "+numberOfChildren +". At £"+priceChildren+" per child. The total price for children is £" +totalPriceForChildren);

System.***out***.println("The total price for this reservation is £"+(totalPriceForAdults+totalPriceForTeenagers+totalPriceForChildren));

System.***out***.println("\*\*\*\*\*\*\*\*Your reservation is confirmed, thank you\*\*\*\*\*\*\*\*\*");

}

}

**USER MANUAL**

The following is a step by step manual for the Ticket Booking System.

* Run the Program
* Enter total number of people in group, must be between 2 and 5 people
* Hit return
* Enter the ages of each person, pressing return after each
* The program will display your booking information
* Exit program

The following is a troubleshooting FAQ:

*Why does the program display “*The maximum number of people in a group is 5 and the minimum is 2, please try again:”?

**The number you have entered is not between 2 and 5, try again.**

**Text

Description automatically generated**

*Why does it say Booking Terminated?*

**You have not booked an Adult ticket, restart the program and try again.**

**Text

Description automatically generated**

If you have any other issues don’t hesitate to contact us at sample@sample.com . We hope you enjoy the program!