Test Plan and Golden Outputs
Assignment 5
19CS30013

Unit Testing Plan :

1. Station :
    a. A station is created
    b. Copy constructor is checked
    c. GetName() is checked
    d. GetDistance() between two stations is checked
2. Railways :
    a. Name of the railways is checked
    b. Singleton object creation is checked
    c. Distances between all pairs of stations is checked
    d. ValidatePath() is checked between two correct stations
    e. Error handling is done for the two cases :
        i. Start and end station are the same
        ii. Stations do not belong to the list
3. Date:
    a. Constructor is checked
    b. Copy constructor is checked
    c. CreateDate() is checked with a valid date string of the form "DD/MM/YYYY"
    d. inYearSpan() is checked for both dates , i.e. dates in a year and dates outside a year
    e. getAge() is checked
    f. isPast() is checked for both past and future dates
    g. Error handling is done for date
        i. Invalid Date
        ii. Date in invalid format
4. Gender:
    a. Titles for both the genders are checked
        i. "Mr." for male
        ii. "Mrs." for female
5. Passenger :

a. CreatePassenger() is checked
b. Copy constructor is checked
c. Error handling is done for the passengers :
    i.   Bad date of birth
    ii. Invalid aadhar card
    iii. Invalid phone number
    iv. Invalid name

6. BookinClasses:
   This class has got 8 booking classes namely , AC 2 Tier , AC 3 Tier, Sleeper , AC First Class , Second Sitting etc. All the static data of the given classes are checked thoroughly.

7. Divyaang :
   a. Divyaang has got 4 categories. And each category has a different concession factor in every booking class. All the static data of all the 4 classes (blind , cancer , op and tb) checked thoroughly
   b. Creating Passenger of each Divyaang type and checking their eligibility.

8. Priority :
   a. Static Data for all the booking classes in Tatkal mode checked
   b. Static Data for all the booking classes in Premium Tatkal mode checked

9. Ladies :
   a. Check if female passenger is eligible for concession
   b. Check if male passenger is eligible for concession
   c. Check the concession factor

10. SeniorCitizens :
    a. Check concession factors for male and female
    b. Eligibility:
       I. Male age >60
       II. Male age <=60
       III. Female age >60
       IV. Female age <=60

Golden Output of Unit Testing :

+++Unit Testing Station Class+++
 Constructor taking string argument works
 Copy constructor working
 GetName() works
 GetDistance() works

+++Unit Testing Railways Class+++
 Name: Indian Railways
 Singleton class returned
 All distances returned right
 ValidatePath() works right
 Bad station name(station name incorrect) exception handled right
 Bad station name(station name repeated) exception handled right
 ValidatePath() handles exceptions right

+++Unit Testing Date Class+++
 Constructor with integer arguments working
 Copy Constructor working
 CreateDate() with string working
 inYearSpan() working right
 getAge() working right
 isPast() working right
 Bad date(incorrect date format) exception handled right
 Bad date(invalid date) exception handled right

+++Unit Testing Gender Class+++
 Gender Class works right

+++Unit Testing Passenger Class+++
 CreatePassenger() working right
 Copy Constructor working right
 Bad DOB exception handled right
 Bad Aadhaar Card No. exception handled right

Bad Phone No. exception handled right
Bad passenger Name exception handled right

+++Unit Testing Passenger Class+++
Execitive Chair Car is working right
First Class is working right
AC 2 Tier is working right
AC 3 Tier is working right
AC First Class is working right
Sleeper is working right
Second Sitting is working right
AC Chair Car is working right

+++Unit Testing Passenger Class+++
None type works right
Tuberculosis type works right
Orthopaedic Handicap Type works right
Cancer Type works right
Blind Type works right
Cancer Eligibility in Divyaang working right
Blind Eligibility in Divyaang working right
Tuberculosis Eligibility in Divyaang working right
Orthopaedic Handicap Eligibility in Divyaang working right

+++Unit Testing Priority Class+++
Tatkal for AC 2 Tier is working correct
Tatkal for AC 3 Tier is working correct
Tatkal for AC First Class is working correct
Tatkal for Sleeper is working correct
Tatkal for AC Chair Car is working correct
Tatkal for Second Sittingis working correct
Tatkal for Executive Chair Car is working correct
Tatkal for First Class is working correct
Premium Tatkal for AC 2 Tier is working correct

Premium Tatkal for AC 3 Tier is working correct
Premium Tatkal for AC First Class is working correct
Premium Tatkal for Sleeper is working correct
Premium Tatkal for AC Chair Car is working correct
Premium Tatkal for Second Sittingis working correct
Premium Tatkal for Executive Chair Car is working correct
Premium Tatkal for First Class is working correct

+++Unit Testing Ladies Class+++
Ladies type works right

+++Unit Testing SeniorCitizens Class+++
SeniorCitizens works correctly

Application Testing :

Several bookings has been created of various types including some invalid bookings. We will use the golden output to compare.

Golden Output For Application Testing:

++++Passenger Details:
Name: Bishal Bag
Date of Birth: 29/Feb/2000
Aadhaar No.: 123456789012
Phone No. :1234567890
Disability: Cancer Type

++++Booking PNR number: 1
From station: Kolkata
To station: Delhi
Travel Date: 31/Dec/2021
Travel Class: AC First Class
Travel Category: Cancer Type
Fare: 2452

++++Passenger Details:
    Name: Somlagna Bag
    Date of Birth: 28/Feb/2000
    Aadhaar No.: 123456789024
    Phone No. :1234567890
    Disability:

++++Booking PNR number: 2
    From station: Kolkata
    To station: Delhi
    Travel Date: 31/Oct/2021
    Travel Class: Executive Chair Car
    Travel Category: Ladies Type
    Fare: 3740

++++Passenger Details:
    Name: Bishal Bag
    Date of Birth: 1/May/2001
    Aadhaar No.: 123456789234
    Phone No. :1234567890
    Disability: Cancer Type

++++Booking PNR number: 3
    From station: Mumbai
    To station: Chennai
    Travel Date: 12/Dec/2021
    Travel Class: AC First Class
    Travel Category: Cancer Type
    Fare: 2234

++++Passenger Details:
    Name: Sukesh
    Date of Birth: 2/May/1950
    Aadhaar No.: 123456789342
    Phone No. :1234567890
    Disability:

++++Booking PNR number: 4
    From station: Mumbai
    To station: Kolkata
    Travel Date: 12/Sep/2021
    Travel Class: First Class
    Travel Category: Tatkal Type
    Fare: 3571

++++Passenger Details:
    Name: Ramen Bag
    Date of Birth: 1/May/2001
    Aadhaar No.: 123456789340
    Phone No. :1234567890
    Disability: Blind Type

    Bad_booking exception: Invalid category
++++Passenger Details:
    Name: Kumar Saha
    Date of Birth: 1/May/2010
    Aadhaar No.: 123456789340
    Phone No. :1234567890
    Disability:

    Bad_booking exception: Invalid path of travel
++++Passenger Details:
    Name: Kumar Saha
    Date of Birth: 1/May/2010
    Aadhaar No.: 123456789340
    Phone No. :1234567890
    Disability:

    Bad_booking exception: Invalid date of travel
++++Passenger Details:
    Name: Kumar Saha
    Date of Birth: 1/May/1960
    Aadhaar No.: 123456789340
    Phone No. :1234567890

Disability:

++++Booking PNR number: 5
From station: Mumbai
To station: Chennai
Travel Date: 12/Sep/2021
Travel Class: AC 2 Tier
Travel Category: General Category
Fare: 2726

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