# Tutorial 6

1. Open the file in moodle GradeReport.txt.
2. Find and remove errors.

Answer:

These are the errors that were corrected:

1. The class name gradereport was changed to GradeReport to follow Java naming conventions (classes should start with a capital letter).
2. Adding the missing import java.util.Scanner; statement at the beginning of the file.
3. Fixing the variable name Scores to scores (variables should start with a lowercase letter in Java).
4. Correcting nextdouble() to nextDouble() (method names in Java are case-sensitive).
5. Adding in.close(); at the end of the main method to properly close the Scanner object.

package lab06;

import java.util.Scanner;

public class GradeReport {

public static void main(String[] args) {

Scanner in = new Scanner(System.in);

double[] scores = new double[10];

for(int i=0;i<10;i++){

System.out.println("Enter score " + (i+1));

scores[i]=in.nextDouble();

}

for(int i=0;i<10;i++){

if (scores[i] >=80)

System.out.println("Score " + (i+1) + " receives a grade of HD");

else if (scores[i]>=70)

System.out.println("Score " + (i+1) + " receives a grade of D");

else if (scores[i] >=60)

System.out.println("Score "+ (i+1) + " receives a grade of C");

else if (scores[i] >=50)

System.out.println("Score " + (i+1) + " receives a grade of P");

else if (scores[i] >=40)

System.out.println("Score " + (i+1) + " receives a grade of MF");

else if (scores[i] >=0)

System.out.println("Score " + (i+1) + " receives a grade of F");

else

System.out.println("Score " + (i+1) + " was invalid!");

}

in.close();

}

}

1. Improve the quality of code by following programming standards.

Answer:

1. Insert beginning Comments.
2. Fixed the indentation and formatting for better readability.
3. Spaces and Braces: Added spaces after keywords like if, else if, and else.
4. Both opening and closing braces {} are on separate lines and aligned properly.
5. Commenting: Added a comment to separate different sections of the code (input and processing).
6. Readability: Ensured each statement and block is readable, and lines are not longer than 80 characters, making the code maintainable.

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\* GradeReport.java - Program to input scores and print corresponding grades.

\* Version: 1.1

\* Date: 2024-04-26

\* Author: Wasik

\* License: Apache 2.0

\*/

package Week\_6\_2;

import java.util.Scanner;

public class gradeReport {

public static void main(String[] args) {

// TODO Auto-generated method stub

Scanner in = new Scanner(System.in);

double[] scores = new double[10];

for(int i=0;i<10;i++){

System.out.println("Enter score " + (i+1));

scores[i]=in.nextDouble();

}

for(int i=0;i<10;i++){

if (scores[i] >=80)

System.out.println("Score " + (i+1) + " receives a grade of HD");

else if (scores[i]>=70)

System.out.println("Score " + (i+1) + " receives a grade of D");

else if (scores[i] >=60)

System.out.println("Score "+ (i+1) + " receives a grade of C");

else if (scores[i] >=50)

System.out.println("Score " + (i+1) + " receives a grade of P");

else if (scores[i] >=40)

System.out.println("Score " + (i+1) + " receives a grade of MF");

else if (scores[i] >=0)

System.out.println("Score " + (i+1) + " receives a grade of F");

else

System.out.println("Score " + (i+1) + " was invalid!");

}

in.close();

}

}

1. Downloaded Airline.java from moodle and documented and implemented three different test cases following the format given previously:  
     
   Ans:

/\*\*

\* Airline.java - Determines passenger discount eligibility.

\* Version: 1.1

\* Date: 2024-04-26

\* Author: Wasik

\* License: Apache 2.0

\*/

package Week\_6\_2;

import java.util.Scanner;

public class airlie

{

private static final int CHILD\_AGE\_LIMIT = 6;

private static final int SENIOR\_AGE\_LIMIT = 65;

public static void main(String[] args)

{

// Initialize scanner and variables

Scanner in = new Scanner(System.in);

// Prompt for and collect passenger information

System.out.print("Enter passenger's name: ");

String passengerName = in.nextLine();

System.out.print("Enter passenger's age: ");

int passengerAge = in.nextInt();

// Process passenger information

printPassengerDetails(passengerName, passengerAge);

checkEligibility(passengerAge);

// Close resources

in.close();

}

private static void printPassengerDetails(String name, int age)

{

System.out.println("\nPassenger name: " + name);

System.out.println("Passenger age : " + age);

}

private static void checkEligibility(int age)

{

if (age < 0)

{

System.out.println("Error: Age cannot be negative");

}

else if (age <= CHILD\_AGE\_LIMIT || age >= SENIOR\_AGE\_LIMIT)

{

System.out.println("This passenger is eligible for a 25% discount.");

}

else

{

System.out.println("This passenger is not eligible for a discount.");

}

}

}

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Test case ID | Test case | Test Data | Expected Outcome | Actual Outcome |
| TC-01 | Age below 6 | Name: Alice, Age: 5 | This passenger is eligible for a 25% discount. | This passenger is eligible for a 25% discount. |
| TC-02 | Age between 7 and 64 | Name: Bob, Age: 30 | This passenger is not eligible for a 25% discount. | This passenger is not eligible for a 25% discount. |
| TC-03 | Age above 65 | Name: Charlie, Age: 70 | This passenger is eligible for a 25% discount. | This passenger is eligible for a 25% discount. |