SAE6

December 7, 2021

1 Short Assessed Exercise

2 Level –6–

2.1 –Esad Simsek –

2.2 –06/12/2021–

2.3 Version –1–

2.4 Summary of the Question

– Write a program that is to be used to investigate how late trains passing through a given station are –

2.4.1 – Method inputS –

What it does – This method allows the user to input a string to a reply for a question –

Implementation (how it works) – Prints the message and assigns an answer to the variable and then returns the variable –

[1]:
```
public static String inputS (String message)
        {
            String answer;
            Scanner scanner = new Scanner(System.in);
            System.out.println(message);
            answer = scanner.nextLine();
            return answer;
        }
```

Testing

[2]:
```
inputS("Hello");
```

```
Hello
 hi
```

[2]: hi

2.4.2 – Method inputI –

What it does – This method allows the user to input a integer to a reply for a question –

Implementation (how it works) – Prints the message and assigns an answer to the variable and then returns the variable –

[2]:
```
public static int inputI (String message)
        {
            int answer;
            Scanner scanner = new Scanner(System.in);
            System.out.println(message);
            answer = scanner.nextInt();
            return answer;
        }
```

Testing

[5]:
```
inputI(" What year were you born ?");
```

```
 What year were you born ?
 2003
```

[5]: 2003

2.4.3 – MAIN Method TrainCount –

What it does – This is the main method that runs the program –

Implementation (how it works) – This method declares variables using while loops when the input is not equal to XXX and in the while loop it asks for the minutes delayed and uses an if statement, afterwards if the current train is more punctual than the previous ones it assigns it as the most punctual train. When the while loop is finished it prints the total minutes that all the trains are delayed by. Afterwards there is an if statement which prints no trains were inputed if there is no input or else it prints the most punctual train –

[3]:
```
public static void TrainCount()
{
    int minuteslate = 0;
    int total = 0;
    int punctualtime = -1;

    String punctualdestination = "";
    String destination = inputS ("What is the destination of the train that␣
 ↪just departed?");

    while (!destination.equals("XXX"))
    {
```

```
        minuteslate = inputI ("How many minutes late was it?");
        if (punctualtime == -1)
        {
            punctualtime = minuteslate;
            punctualdestination = destination;
        }
        else if (minuteslate<punctualtime)
        {
            punctualtime = minuteslate;
            punctualdestination = destination;
        }
        total = total + minuteslate;
        destination = inputS ("What is the destination of the train that just␣
↪departed?");
    }

    System.out.println("The trains were in total " + total + " minutes late.");

    if (punctualtime == -1)
    {
        System.out.println("There were no trains.");
    }
    else
    {
        System.out.println("The most punctual train was to " +␣
↪punctualdestination + " . It was " + punctualtime + " minute late.");
    }

}
```

Testing

[4]:
```
TrainCount();
```

```
What is the destination of the train that just departed?
 L
How many minutes late was it?
 7
What is the destination of the train that just departed?
 N
How many minutes late was it?
 1
What is the destination of the train that just departed?
```

```
 S
How many minutes late was it?
 5
What is the destination of the train that just departed?
 D
How many minutes late was it?
 3
What is the destination of the train that just departed?
 XXX
The trains were in total 16 minutes late.
The most punctual train was to N . It was 1 minute late.
```

2.4.4 Running the program

Run the following call to simulate running the complete program.

[14]:
```
TrainCount();
```

```
What is the destination of the train that just departed?
 Londno
How many minutes late was it?
 2
What is the destination of the train that just departed?
 Liverpool
How many minutes late was it?
 4
What is the destination of the train that just departed?
 XXX
The trains were in total 6 minutes late.
The most punctual train was to Londno . It was 2 minute late.
```

2.5 The complete program

This version will only compile here. To run it copy it into a file called initials.java on your local computer and compile and run it there.

[15]:
```
// Esad Simsek
// 06/12/2021
// VERSION 1
```

```java
// Write a program that is to be used to investigate how late trains passing␣
↪through a given station are

    import java.util.Scanner;
    class Train_Count
    {
    // main method call
        public static void main (String [] a)
        {
            TrainCount();
            System.exit(0);
        }

        public static String inputS (String message)
        {
            String answer;
            Scanner scanner = new Scanner(System.in);
            System.out.println(message);
            answer = scanner.nextLine();
            return answer;
        }
        public static int inputI (String message)
        {
            int answer;
            Scanner scanner = new Scanner(System.in);
            System.out.println(message);
            answer = scanner.nextInt();
            return answer;
        }
        public static void TrainCount()
        {
            int minuteslate = 0;
            int total = 0;
            int punctualtime = -1;

            String punctualdestination = "";
            String destination = inputS ("What is the destination of the train␣
↪that just departed?");

            while (!destination.equals("XXX"))
            {
                minuteslate = inputI ("How many minutes late was it?");
                if (punctualtime == -1)
                {
                    punctualtime = minuteslate;
                    punctualdestination = destination;
                }
```

```
                else if (minuteslate<punctualtime)
                {
                    punctualtime = minuteslate;
                    punctualdestination = destination;
                }
                total = total + minuteslate;
                destination = inputS ("What is the destination of the train␣
↪that just departed?");
            }

            System.out.println("The trains were in total " + total + " minutes␣
↪late.");

            if (punctualtime == -1)
            {
                System.out.println("There were no trains.");
            }
            else
            {
                System.out.println("The most punctual train was to " +␣
↪punctualdestination + " . It was " + punctualtime + " minute late.");
            }

        }



    }
```

END OF LITERATE DOCUMENT