SAE 3

November 29, 2021

1 Short Assessed Exercise

2 Level –3–

2.1 –Esad Simsek –

2.2 –06 November 2021–

2.3 Version –1–

2.4 Summary of the Question

– Write a program that works out the amount a person has to pay for parking in a car park in a tourist town. If they say they are disabled, they are told it is free. Otherwise they enter the number of hours as a whole number (1-8) that they wish to park as well as whether they have an "I live locally" badge or are an old age pensioner both of which leads to a discount. The program tells them the cost to park. –

2.4.1 – Main Method –

What it does –This the the main method that makes the program work and calls data from previous methods. –

Implementation (how it works) – First a question is asked with an if statement whether they are disabled or not and the program decides whether parking is free or not, if the user isnt disabled time() method to hourfee variable afterwards calculates the price of parking by assigning feecalculation method to mainprice variable. finally prints cost of parking–

```
[1]: public static void parking ()
     {
         Scanner scanner = new Scanner(System.in);
         double hourfee = 0;
         double mainfee = 0;
         String disabled;

         System.out.println("Are you disabled (yes/no) ?");
         disabled = scanner.nextLine();
         if (disabled.equals("yes") | disabled.equals("Yes"))
         {
             System.out.println("Parking is free");
```

```java
            System.exit(0);
        }
        else if (disabled.equals("no") | disabled.equals("No"))
        {
            hourfee = time();
        }
        else
        {
            System.out.println("uh oh. try again");
            System.exit(0);
        }
        mainfee = feecalculation(mainfee, hourfee);
        System.out.println("The parking charge for you is " + mainfee + "£");
        return;
}
```

Testing

[4]:
```java
parking();
```

```
Are you disabled (yes/no) ?

 no

How many hours do you wish to park (1-8) ?

 1

Are you local (yes/no) ?

 no

Are you OAP (yes/no) ?

 yes

The parking charge for you is 1.0£
```

2.4.2 – Method 2 time –

What it does   – method 2 calculates the fee based on how many hours the user has parked. –

Implementation (how it works)   – Asks the user how many hours have been parked and assigns variables according to the user input. If else statement is used to determine what the main cost is.–

[2]:
```java
public static double time ()
{
    int timeparked;
    double price = 0;
    Scanner scanner = new Scanner(System.in);
    System.out.println("How many hours do you wish to park (1-8) ?");
```

```java
        timeparked = scanner.nextInt();
        if (timeparked == 1)
        {
            price = 3;
        }
        else if (timeparked <= 4)
        {
            price = 4;
        }
        else if (timeparked <= 6)
        {
            price = 4.50;
        }
        else if (timeparked <= 8)
        {
            price = 5.50;
        }
        else
        {

            System.out.print("N/A ERROR"); // Error as the input isnt valid
            System.exit(0);
        }

        return price;
}
```

Testing

```
[5]: time ()
```

```
How many hours do you wish to park (1-8) ?
 4
```

```
[5]: 4.0
```

2.4.3 – Method 3 feecalculation –

What it does – Using the main cost of parking per hour method 3 calculates cost of parking if they're a local or an OAP –

Implementation (how it works) – The method first assigns variables to user input and determines the final cost of parking by using if else statements. –

```java
[3]: public static double feecalculation(double main_fee, double hour_fee)
{
    Scanner scanner = new Scanner(System.in);
```

```java
        String local;
        String OAP;

        System.out.println("Are you local (yes/no) ?");
        local = scanner.nextLine();

        System.out.println("Are you OAP (yes/no) ?");
        OAP = scanner.nextLine();

        if (( local.equals("yes") | local.equals("Yes") ) & ( OAP.equals("yes")␣
    ↪|OAP.equals("Yes") ))

        {
            main_fee = hour_fee - 3;
        }
        else if (( local.equals("yes") | local.equals("Yes") ))
        {
            main_fee = hour_fee - 1;
        }
        else if (( OAP.equals("yes") | OAP.equals("Yes") ))
        {
            main_fee = hour_fee - 2;
        }
        else
        {
            main_fee = hour_fee;
        }
        return main_fee;
}
```

Testing

```
[8]: feecalculation(0, 3);
```

```
Are you local (yes/no) ?

 no

Are you OAP (yes/no) ?

 no
```

```
[8]: 3.0
```

– Add more code and description boxes as needed

2.4.4 Running the program

Run the following call to simulate running the complete program.

```
[ ]: parking();
```

Are you disabled (yes/no) ?

 yes

Parking is free

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.

```
[17]: // Esad Simsek
      // 16/11/21
      // VERSION 1

      import java.util.Scanner; // Needed to make Scanner available

      class parkingprice
      {
          public static void main (String [] a)
          {
              parking(); //Change this to a call to the method doing the work
              System.exit(0);
          }

          public static void parking ()
      {
          Scanner scanner = new Scanner(System.in);
          double hourfee = 0;
          double mainfee = 0;
          String disabled;

          System.out.println("Are you disabled (yes/no) ?");
          disabled = scanner.nextLine();
          if (disabled.equals("yes") | disabled.equals("Yes"))
          {
              System.out.println("Parking is free");
              System.exit(0);
          }
          else if (disabled.equals("no") | disabled.equals("No"))
          {
              hourfee = time();
          }
          else
          {
              System.out.println("uh oh. try again");
              System.exit(0);
```

```java
        }
    mainfee = feecalculation(mainfee, hourfee);
    System.out.println("The parking charge for you is " + mainfee + "£");
    return;
}


    public static double feecalculation(double main_fee, double hour_fee)
    {
        Scanner scanner = new Scanner(System.in);
        String local;
        String OAP;

        System.out.println("Are you local (yes/no) ?");
        local = scanner.nextLine();

        System.out.println("Are you OAP (yes/no) ?");
        OAP = scanner.nextLine();

        if (( local.equals("yes") | local.equals("Yes") ) & ( OAP.equals("yes")␣
↪|OAP.equals("Yes") ))

        {
            main_fee = hour_fee - 3;
        }
        else if (( local.equals("yes") | local.equals("Yes") ))
        {
            main_fee = hour_fee - 1;
        }
        else if (( OAP.equals("yes") | OAP.equals("Yes") ))
        {
            main_fee = hour_fee - 2;
        }
        else
        {
            main_fee = hour_fee;
        }
        return main_fee;
    }

    public static double time ()
    {
        int timeparked;
        double price = 0;
        Scanner scanner = new Scanner(System.in);
        System.out.println("How many hours do you wish to park (1-8) ?");
        timeparked = scanner.nextInt();
```

```java
        if (timeparked == 1)
        {
            price = 3;
        }
        else if (timeparked <= 4)
        {
            price = 4;
        }
        else if (timeparked <= 6)
        {
            price = 4.50;
        }
        else if (timeparked <= 8)
        {
            price = 5.50;
        }
        else
        {

            System.out.print("N/A ERROR"); // Error as the input isnt valid
            System.exit(0);
        }

        return price;
    }
    // Add all methods the program uses here
}
```

END OF LITERATE DOCUMENT