

# SAE4

December 5, 2021

## 1 Short Assessed Exercise

### 2 Level –4–

2.1 –Esad Simsek –

2.2 –29/11/2021–

2.3 Version –1–

### 2.4 Summary of the Question

– Write a program that gives information about tourist attractions. –

#### 2.4.1 – Method Class Attraction –

**What it does** – This method creates record type which is called Attraction. –

**Implementation (how it works)** – A class called Attraction is created and variables are declared –

```
[1]: class Attraction
    {
        String name;
        int opentime;
        int closetime;
        boolean bankholiday;
    }
```

#### 2.4.2 – Method CreateAttraction –

**What it does** – This method creates a new type of attraction with information about the attractions name, opening time, closing time, and whether if it is opening on bank holidays or not.–

**Implementation (how it works)** – using the record Attraction this method assigns the given parameters to a new record –

```
[2]:
```

```

public static Attraction CreateAttraction (String name, int opentime, int
↪ closetime, boolean bankholiday)
{
    Attraction AA = new Attraction();
    AA.name = name;
    AA.opentime = opentime;
    AA.closetime = closetime;
    AA.bankholiday = bankholiday;

    return AA;
}

```

### 2.4.3 – Method PrintAttractionDetails –

**What it does** – prints the attraction details asked by the user –

**Implementation (how it works)** – an if statement is used, if the bank holiday variable is true, it prints that the attraction is open on bank holidays. If it is false then it prints that it is not open on bank holidays. Then it prints opening and closing times.–

```

[3]: public static void PrintAttractionDetails (Attraction AA)
    {
        if (AA.bankholiday)
        {
            System.out.println(AA.name + " opens on bank holidays.");
        }
        else
        {
            System.out.println(AA.name + " does not open on bank holidays.");
        }
        System.out.println("It opens at " + AA.opentime + "am");
        System.out.println("It closes at " + AA.closetime + "pm");
        System.out.println("");

        return;
    }

```

### 2.4.4 – MAIN Method attractionInfo –

**What it does** – This method declares the records the program knows and asks the user how many attractions they would like to know about and which ones they would like to know about and replies according to what it knows. –

**Implementation (how it works)** – Creates records of the attractions the program knows about using CreateAttraction method. The user is being asked how many attractions they would like to know about. if the program matches the user input then the program will print the details of the

attraction, if it doesn't match any of the attractions the program will print that it doesn't know about it. –

```
[4]: public static void attractionInfo ()
    {
        Attraction TheEdenProject = CreateAttraction("The Eden Project", 9, 8, true);
        Attraction TateModern = CreateAttraction("Tate Modern", 10, 9, false);
        Attraction LondonZoo = CreateAttraction("London Zoo", 10, 9, true);

        Scanner scanner = new Scanner(System.in);
        System.out.println("How many attractions do you need to know about ?");
        int NrAttraction = scanner.nextInt();
        System.out.println("");

        for (int i=1; i<=NrAttraction; i++)
        {
            System.out.println("Name attraction" + i + " ?");
            Scanner scanner1 = new Scanner(System.in);
            String AttractionName = scanner1.nextLine();
            if (AttractionName.equals(TheEdenProject.name))
            {
                PrintAttractionDetails(TheEdenProject);
            }
            else if (AttractionName.equals(TateModern.name))
            {
                PrintAttractionDetails(TateModern);
            }
            else if (AttractionName.equals(LondonZoo.name))
            {
                PrintAttractionDetails(LondonZoo);
            }
            else
            {
                System.out.println("I have no information about that attraction");
                System.out.println("");
            }
        }
        return;
    }
```

## Testing

```
[5]: attractionInfo();
```

How many attractions do you need to know about ?

4

Name attraction1 ?

The Eden Project

The Eden Project opens on bank holidays.

It opens at 9am

It closes at 8pm

Name attraction2 ?

Tate Modern

Tate Modern does not open on bank holidays.

It opens at 10am

It closes at 9pm

Name attraction3 ?

The Zoo

I have no information about that attraction

Name attraction4 ?

London Zoo

London Zoo opens on bank holidays.

It opens at 10am

It closes at 9pm

### 2.4.5 Running the program

Run the following call to simulate running the complete program.

```
[34]: attractionInfo();
```

How many attractions do you need to know about ?

4

Name attraction1 ?

The Eden Project

The Eden Project opens on bank holidays.

It opens at 9am

It closes at 8pm

Name attraction2 ?

Tate Modern

Tate Modern does not open on bank holidays.  
It opens at 10am  
It closes at 9pm

Name attraction3 ?

The Zoo

I have no information about that attraction

Name attraction4 ?

London Zoo

London Zoo opens on bank holidays.  
It opens at 10am  
It closes at 9pm

## 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.

```
[22]: // Esad Simsek
      // 29/11/2021
      // VERSION 1
      // Write a program that gives information about tourist attractions

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

class Attraction
{
    String name;
    int opentime;
    int closetime;
    boolean bankholiday;
}

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

    public static Attraction CreateAttraction (String name, int opentime, int_
↪ closetime, boolean bankholiday)
    {
```

```

Attraction AA = new Attraction();
AA.name = name;
AA.opentime = opentime;
AA.closetime = closetime;
AA.bankholiday = bankholiday;

return AA;
}

public static void PrintAttractionDetails (Attraction AA)
{
    if (AA.bankholiday)
    {
        System.out.println(AA.name + " opens on bank holidays.");
    }
    else
    {
        System.out.println(AA.name + " does not open on bank holidays.");
    }
    System.out.println("It opens at " + AA.opentime + "am");
    System.out.println("It closes at " + AA.closetime + "pm");
    System.out.println("");

return;
}

public static void attractionInfo ()
{
    Attraction TheEdenProject = CreateAttraction("The Eden Project", 9, 8,
↪true);
    Attraction TateModern = CreateAttraction("Tate Modern", 10, 9, false);
    Attraction LondonZoo = CreateAttraction("London Zoo", 10, 9, true);

    Scanner scanner = new Scanner(System.in);
    System.out.println("How many attractions do you need to know about ?");
    int NrAttraction = scanner.nextInt();
    System.out.println("");

    for (int i=1; i<=NrAttraction; i++)
    {
        System.out.println("Name attraction" + i + " ?");
        Scanner scanner1 = new Scanner(System.in);
        String AttractionName = scanner1.nextLine();
        if (AttractionName.equals(TheEdenProject.name))
        {

```

```
PrintAttractionDetails(TheEdenProject);
}
else if (AttractionName.equals(TateModern.name))
{
PrintAttractionDetails(TateModern);
}
else if (AttractionName.equals(LondonZoo.name))
{
PrintAttractionDetails(LondonZoo);
}
else
{
System.out.println("I have no information about that attraction");
System.out.println("");
}
}
return;
}
}
```

END OF LITERATE DOCUMENT