

Tabish Parkar

Formative Assessment

3: Systems

Development 1

(HSYD100-1)

```
int[] monthlySales = new int[12];
```

1A.

1B.

```
1 String[] monthNames = {"January", "February", "March", "April", "May", "June", "July", "August", "September", "October", "November", "December"};
```

1C.

```
1 int maxSalesValue = salesValues[0];
2 int maxMonth = 1;
3 for (int i = 1; i < salesValues.length; i++) {
4     if (salesValues[i] > maxSalesValue) {
5         maxSalesValue = salesValues[i];
6         maxMonth = i + 1;
7     }
8 }
9 String output = "The highest sales value of " + maxSalesValue + " occurred in month " + maxMonth;
10 JOptionPane.showMessageDialog(null, output);
```

1D.

```
1 String[] jMonths = new String[4];
2 int index = 0;
3 for (int i=0; i<monthNames.length; i++) {
4     if(monthNames[i].startsWith("J")) {
5         jMonths[index] = monthNames[i];
6         index++;
7     }
8 }
```

1E.

```
1 import javax.swing.JOptionPane;
2 String[] monthNames = {"January", "February", "March", "April", "May",
3     "June", "July", "August", "September", "October",
4     "November", "December"};
5 JOptionPane.showMessageDialog(null, String.join("\n", monthNames));
```

2.1.

```
1  import java.util.Scanner;
2  public class SortIntegers {
3      public static void main(String[] args) {
4          int[] integers = getIntegers(5);
5          System.out.println("Array before sorting:");
6          printArray(integers);
7          sortIntegers(integers);
8          System.out.println("Array after sorting in descending order:");
9          printArray(integers);
10     }
11     public static int[] getIntegers(int number) {
12         Scanner scanner = new Scanner(System.in);
13         int[] values = new int[number];
14         System.out.printf("Enter %d integer values:\n", number);
15         for (int i=0; i<values.length; i++) {
16             values[i] = scanner.nextInt();
17         }
18         return values;
19     }
20     public static void printArray(int[] array) {
21         for (int i=0; i<array.length; i++) {
22             System.out.print(array[i] + " ");
23         }
24         System.out.println();
25     }
26     public static void sortIntegers(int[] array) {
27         boolean flag;
28         int temp;
29         do{
```

```
30         flag=false;
31         for(int j=0;j<array.length-1;j++){
32             if(array[j]<array[j+1]){
33                 temp=array[j];
34                 array[j]=array[j+1];
35                 array[j+1]=temp;
36                 flag=true;
37             }
38         }
39         while(flag);
40     }
41 }
```

2.2.

3.

```
1 public class MonthlyCarSales {
2     private String saleMonth;
3     private double saleValue;
4     public MonthlyCarSales()
5
6     public MonthlyCarSales(String mth, double val) {
7         this.saleMonth = mth;
8         this.saleValue = val;
9     }
10    public void setSaleMonth(String nm) {
11        this.saleMonth = nm;
12    }
13    public void setSaleValue(double val) {
14        this.saleValue = val;
15    }
16    public String getSaleMonth() {
17        return saleMonth;
18    }
19    public double getSaleValue() {
20        return saleValue;
21    }
22
23    public String toString(){
24        return "Monthly Car Sales: Month=" +saleMonth+ ", Value="+saleValue+ ".";
25    }
26 }
```

3.2.

```
1 import java.util.Random;
2 public class MainClass {
3     public static void main(String[] args) {
4
5         MonthlyCarSales[] monthlySales = new MonthlyCarSales[12];
6
7         Random rand = new Random();
8
9         for (int i = 0; i < monthlySales.length; i++) {
10             double saleValue = rand.nextInt(499) + 2;
11             String monthName = "Month " + (i+1);
12             monthlySales[i] = new MonthlyCarSales(monthName, saleValue);
13         }
14     }
15 }
```

### 3.3.

```
1 import javax.JOptionPane;
2 public class MainClass {
3
4     public static void main(String[] args) {
5
6         MonthlyCarSales[] monthlySales = new MonthlyCarSales[12];
7
8         Random Random = new Random();
9
10        for (int i = 0; i < monthlySales.length; i++) {
11            double saleValue = Random.nextInt(499) + 2;
12            String monthName = "Month " + (i+1);
13            monthlySales[i] = new MonthlyCarSales(monthName, saleValue);
14        }
15
16        double maxSale=monthlySales[0].getSale();
17        String maxMonth=monthlySales[0].getMonth();
18        double minSale=monthlySales[0].getSale();
19        String minMonth=monthlySales[0].getMonth();
20
21        for(int j=1;j< monthlysals.length;j++){
22            {
23                maxsale = monthlysals[j].getSale();
24                maxmonth=monthlysals[j].getMonth();
25                minsale=monthlysals[j].getsale();
26                minmonth=MonthlySales[j].getmonth();
27            }
28        }
29        String outputMessage="Maximum Sale: "+maxsale+" occurred at "+maxmonth+"\nMinimum Sale: "+minsale+" occurred at "+minmonth;
30        JOptionPane.showMessageDialog(null,outputMessage);
31    }
32 }
```