

Arrays, Conditionals, and Loops

- Arrays:
 - `String customer = new String("Pablo Sanchez");`
 - `String inputBuffer = new String[100]; //string contains up to 100 characters`
 - `String sequence = new String[10]; sequence[2] = "c";`
 - `int bufferLength = inputBuffer.length; // returns 100`
 - `int[] counter = new int[2]; // can hold two integers`
or
 - `int`
 - `counter[] = new int[2];`
 - Example1:

```
Scanner sc = new Scanner(System.in);
double[ ] weeklySales = new double[10];
double totalSales = 0;
for (int i = 0; i<weeklySales.length;i++)
{
    System.out.println("Please enter weekly sales: ");
    weeklySales[i] = sc.nextDouble();
    totalSales += weeklySales[i];
}
```

Arrays, Conditionals, and Loops - continued

- `String[] names = {"John", "Sue", "Marvin", "Andre", "Pedro"}; //declare and initialize`

- Example2:

```
Scanner sc = new Scanner(System.in);
int size;
int[ ] dataPoints;
System.out.println("Enter number of data points: ");
size = sc.nextInt();
dataPoints = new int[size];
```

- Example3:

```
int i = setData(dataPoints);
:
:
private int setData(int[ ] data)
{
    :
}
```

Arrays, Conditionals, and Loops - continued

- Example4:

```
int[ ] d = getData();
:
:
private int[ ] getData()
{
    :
    return data;
}
```

- Example5:

```
Student[ ] student = new Student[30];
for (int i = 0; i < student.length; i++)
{
    student[i] = new Student("System.out.println("Enter name: ");");
}
for (Student s : student) // reads "for each Student object in student array
{
    System.out.println(s.getName());
}
```

- Multidimensional arrays:

```
int[ ][ ] velocity = new int[10][10];
velocity[0][0] = 1;
velocity[0][1] = 3;
velocity[0][2] = 9;
```

Arrays, Conditionals, and Loops - continued

if conditional:

Ex1. `int height = x < y ? x : y;`

Ex2. `if (x < y)`
 `height = x;`

`else height = y;`

Ex3. `if (number == 3)`

`number++;`

`else if (number == 4)`

`number = number*2;`

`else if (number == 5)`

`number = number/3;`

Arrays, Conditionals, and Loops - continued

- Switch:

Ex.

```
switch (number)
{
  case 3:
    number++;
    break;
  case 4:
    number = number*2;
    break;
  case 5:
    number = number/3;
    break;
  case default:
    System.out.println("incorrect value for" + number);
}
```

- For Loop:

Ex.

```
for (int i = 0; i < arr.length; i++)
  arr[i] = number++;
```

- While Loop:

Ex.

```
while ((ch != 'q') && (ch != '\t'))
  ch = input.read();
```

Arrays, Conditionals, and Loops - continued

- do...while Loop:

Ex1. `int x = 0;`
 `do`
 `{`
 `System.out.println("continue loop... counter = " + x);`
 `x++;`
 `} while (x <=9);`

Ex2. `do {`
 `if (arr1[count] == 0) {`
 `break;`
 `}`
 `arr2[count] = arr1[count];`
 `count++;`
 `} while (count < arr1.length);`

- Unlike *break*, which is used to terminate the loop, *continue* is used to restart the loop at the next iteration.