جامعة التنمية البشرية
UNIVERSITY OF HUMAN DEVELOPMENT

COMPUTER PROGRAMMING CONCEPTS

CS&IT 1101
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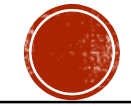
OUTLINES

- **Reading a Single Character**
- **String Methods**
- **Increment and Decrement**



READING A SINGLE CHARACTER

- Java string is a sequence of characters. For each character have a specific number called Index.
- The index of the first characters is 0 and the second one 1 and so on.
- For getting back any characters when we know the number of index we can use charAt() method.

- Example:

```
String Uni="University of Human Development";
char oneChar=Uni.charAt(5);
System.out.println( oneChar);
```


STRING METHODS (1/5)

- **Java String length() method:**

The string length() method returns length of the string.

Example:

```
String s="Sachin";
System.out.println(s.length());          //Output is 6
```

- **Java String concat**

The **java string concat()** method *combines specified string at the end of this string*. It returns combined string.

STRING METHODS (2/5)

- Example:

```
String fname="Ahmed";
String Lname="Azad";
System.out.println(Fname.concat(Lname) );    // Like (Fname+Lname)
```

- **Java String equals()**

The **java string equals()** method compares the two given strings based on the content of the string. If any character is not matched, it returns false. If all characters are matched, it returns true.

STRING METHODS (3/5)

- Example:

String Name="Ali";

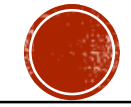
System.out.println(s.equals("Ali")); //true

- **Java String substring()**

The java string **substring()** method returns a part of the string.

➢substring(beginIndex):
Returns the substring starting from the specified index

➢substring(int beginIndex, int endIndex):
Returns the substring starting from the given index(beginIndex) till the specified index(endIndex).



STRING METHODS (4/5)

```
String str= new String("Hello Kurdistan");
    System.out.println("Substring starting from index 6:");
    System.out.println(str.substring(6));
    System.out.println("Substring starting from index 6 and ending at 10:");
    System.out.println(str.substring(6, 10));
```

```
run:
Substring starting from index 6:
Kurdistan
Substring starting from index 6 and ending at 10:
Kurd
BUILD SUCCESSFUL (total time: 0 seconds)
```


STRING METHODS (5/5)

- **Java String length()**

  The java string length() method length of the string. It returns count of total number of characters.

- Example:

```
String str= new String("Hello Kurdistan");
System.out.println(str.length());
```

Output

```
run:
15
BUILD SUCCESSFUL (total time: 0 seconds)
```


INCREMENT AND DECREMENT OPERATOR

- It is one of the variation of "Arithmetic Operator", Increment and Decrement Operators are Unary Operators. Unary Operator Operates on One Operand.
  - ❖Increment Operator is Used to Increment Value Stored inside Variable.
  - ❖Decrement Operator is used to decrement value of Variable by 1.

- **Types of Increment and Decrement Operator :**
  1. Pre Increment / Pre Decrement Operator
  2. Post Increment / Post Decrement Operator
- **Syntax:**

  ++ Increment operator : increments a value by 1

  -- Decrement operator : decrements a value by 1

INCREMENT EX.

```
public static void main(String args[]) {
  int num1 = 1;
  int num2 = 1;

  num1++;
  num2++;

  System.out.println("num1 = " + num1);
  System.out.println("num2 = " + num2);
}
```

Output:

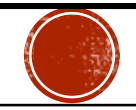
num1 = 2
Num2 = 2

DECREMENT EX.

```
public static void main(String args[]) {
  int num1 = 1;
  int num2 = 1;

  --num1;
  --num2;

  System.out.println("num1 = " + num1);
  System.out.println("num2 = " + num2);
}
```

Output:

num1 = 0
Num2 = 0



EXAMPLE WITH EXPLANATION

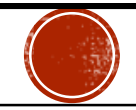
```
public static void main(String args[]) {
  int num1;
  int num2;
  int num3;

  num1 = 100;
  num2 = ++num1;
  num3 = num2++ + ++num1;

  System.out.println("num1 = " + num1);
  System.out.println("num2 = " + num2);
  System.out.println("num3 = " + num3);
}
```

Step 1 : Increment Value of num1.

Step 2 : New Value of num1 = 101

Step 3 : Assign Value of num1 to num2

Step 4 : New Value of num2 = 101



EXAMPLE WITH EXPLANATION

```
num3 = num2++ + ++num1;
```

```
Step 1 : Increment Value of num1 as it is (pre-increment)
```

```
Step 2 : Keep Value of num2 as it is (post-increment)
```

```
Step 3 : At this stage -
         num1 = 102
         num2 = 101
```

```
Step 4 : Add num1 & num2
         num3 = Old(num2) + new(num1)
         num3 = 101 + 102
         num3 = 203
```

```
Final Values
num1 = 102
num2 = 102
num3 = 203
```


THANK YOU.....

DO YOU HAVE ANY QUESTIONS ?