

ESc101 : Fundamental of Computing

I Semester 2008-09

Lecture 5

- **If** statement

Execution of a Program

```
class anyname
{
    public static void main(String args[])
    {
        ⇒ statement1;
        statement2;
        statement3;
        ...;
        ...;
        statementk;
    }
}
```

Execution of a Program

```
class anyname
{
    public static void main(String args[])
    {
        statement1;
        ⇒ statement2;
        statement3;
        ...;
        ...;
        statementk;
    }
}
```

Execution of a Program

```
class anyname
{
    public static void main(String args[])
    {
        statement1;
        statement2;
        ⇒ statement3;
        ...;
        ...;
        statementk;
    }
}
```

⇒ : Instruction pointer (IP) - the next instruction to be executed

I : If statement

Find the minimum of two or more numbers.

```
class if_example
{
    public static void main(String args[])
    {
        int i,j,min;
        .
        .
        //---write code here so that min
        //---stores the minimum of i and j
    }
}
```

If statement

Syntax :

```
if (condition)    statement;
```

where **condition** is an expression of type boolean

If statement

Execution of IF statement :condition is evaluated

```
statement_a;  
⇒ if(condition)    statement_b;  
statement_c;
```

If statement

Execution of IF statement : if condition is **true**

```
statement_a;
```

```
if(condition)  $\Rightarrow$  statement_b;
```

```
statement_c;
```

statement_b is executed, and ...

If statement

Execution of IF statement : if condition is **true**

```
statement_a;  
if(condition)    statement_b;  
⇒ statement_c;
```

statement_b is executed, and then IP goes to **statement_c**.

If statement

Execution of IF statement : if condition is **false**

```
statement_a;  
if(condition)    statement_b;  
⇒ statement_c;
```

statement_b is **NOT** executed, and IP goes to **statement_c** directly.

Examples : If statement

```
class if_example
{
    public static void main(String args[])
    {
        int i,j,max;
        i=100; j=79;
        min = i;
        if(j<i) min=j;
        System.out.println("minimum of ''+i+'' and ''+j+'' is ''+min);
    }
}
```

If-else statement : Example

```
class IF_Else_example1
{
    public static void main(String args[])
    {
        int i,j;
        i = 100; j = 0;
        // write code so that
        // if j == 0 then we print an error message
        // else we print the quotient i/j
        i =i+j;
    }
}
```

If-else statement

Syntax :

```
if (condition)    statement_b;  
else    statement_c;
```

where **condition** is an expression of type boolean

If-else statement

Execution of IF-ELSE statement : first condition is evaluated

```
statement_a;  
⇒ if(condition)    statement_b;  
   else          statement_c;  
   statement_d;
```

If-else statement

Execution of IF-ELSE statement : if condition is **true**

```
statement_a;  
if(condition)  $\Rightarrow$  statement_b;  
else      statement_c;  
statement_d;
```

statement_b is executed, and ...

If-else statement

Execution of IF-ELSE statement : when condition is **true**

```
statement_a;  
if (condition)    statement_b;  
else    statement_c;  
⇒ statement_d;
```

statement_b is executed, and then IP goes to **statement_d**

If-else statement

Execution of IF-ELSE statement : when condition is **false**

```
statement_a;  
if(condition)    statement_b;  
else    ⇒ statement_c;  
statement_d;
```

statement_c is executed, and ...

If-else statement

Execution of IF-ELSE statement : when condition is **false**

```
statement_a;  
if(condition)    statement_b;  
else    statement_c;  
⇒ statement_d;
```

statement_c is executed, and then IP goes to **statement_d**

If-else statement : Example

```
class IF_Else_example1
{
    public static void main(String args[])
    {
        int i,j;
        i = 100; j = 0;
        if(j==0) System.out.println("Division by error");
        else System.out.println(i+" divided by "+j+" is "+(i/j));
        i = i+j;
    }
}
```

If-else statement for blocks

if(condition)

{

.

statements

.

}

else

{

.

statements

.

}