

# EEM103

## Computer Programming

### Week5

- Expressions and Statements
- Selection structures
  - if, if-else
  - switch
- Iteration structures
  - while loops
- IO functions in C++

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## Expression & Statement

( ifade & Deyim )

- **Expression** is a combination of one or more explicit **values**, **constants**, **variables**, **operators**, and **functions** that can produce a value.
- **;** → statement terminator
- **Statement** is the smallest standalone element of an programming language that expresses some action

«Expression» + «Statement terminator» → «Statement»

```
c= a*b-5    /*expression*/
```

```
c= a*b-5 ; /*statement*/
```

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## Kinds of statements

- 1. Simple statements:  
statements that consists of single expression.  
e.g. `a=b+c ;`
- 2. Compound statements:  
Contains more than one statements. E.g;

```
{  
    statement1  
    statement2  
    statement3  
}
```

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## Selection structures in C

IF

SWITCH-CASE

?: (conditional operator)

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## IF statement

```

if (expression)
  statement1
statement
            
```

if expression==1  
statement1  
statement

if expression==0  
statement

```

if (expression)
  statement1
else
  statement2
statement
            
```

if expression==1  
statement1  
statement

if expression==0  
statement2  
statement

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## IF statement

```

if (expression_1)
  statement1
else if (expression_2)
  statement2
  ...
else if (expression_n)
  statement_n
else
  statement_(n+1)
statement
            
```

if expression\_1==1  
statement1  
statement

if expression\_1==0  
check expression\_2

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## Logical expression

```

if(a<4)
if(a<4&&b!=8)
if((4&b)!=8)

if(1)
if(a)
if(a+15)
if(a%4!=0) <----> if(a%4)
...

```

```

if (expression)
    statement1
statement

```

```

!!!
if(a<5)
{
}
else
    a++;

```

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## switch case

```

switch(expression)
{
    case value1:
        ...
    case value2:
        ...
        ...
    case value_n :
        ...
    default:
        ...
}

```

```

switch(expression)
{
    case value1:
        ...
        break;
    case value2:
        ...
        break;
        ...
    case value_n :
        ...
        break;
    default:
        ...
}

```

```

int a=2;
switch(a)
{
    case 1:
        printf("one");
        break;
    case 2:
        printf("two");
        break;
    case 3:
        printf("three");
        break;
    default:
        printf("??");
}

```

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## Conditional operator

..... ? ..... : .....

e.g: finding absolute value by using condition operator:

```
abs_a = (a>=0) ? a : -a ;
```

```
(a>=0) ? (abs_a = a) : (abs_a = -a) ;
```

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## 'while' Iteration Statement

```
while (expression)
    statement1
```

```
statement
```

Repeat statement1 as long as  
expression is TRUE

i.e.  
statement1  
statement1  
...  
statement1  
statement

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