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# COMPUTER PROGRAMMING

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## Control Flow Statement



## □ Control Flow Statement

### ■ IF ~ [ELSE]

➤ example

### ■ SWITCH ~ CASE

➤ example

# CONTROL FLOW STATEMENT

- In Java language, providing if, switch statements for supporting logical control flow statement
- if-else statement

```
if (conditional statement) statement1;  
[else statement2;]
```

- 예

```
int a,b;  
boolean flag;  
flag = false;  
// .....생략  
if (a < b) flag = true;  
System.out.println("Flag is" + flag);
```

```
int a,b;  
boolean flag;  
// .....생략  
if (a < b)  
    flag = true;  
else  
    flag = false;  
System.out.println("Flag is" + flag);
```

# CONTROL FLOW STATEMENT

```
boolean dataAvailable;  
// ...  
if (dataAvailable)  
    ProcessData();  
else  
    waitForMoreData();
```

```
int bytesAvailable;  
// ...  
if (bytesAvailable > 0) {  
    ProcessData();  
    bytesAvailable -= n;  
} else {  
    waitForMoreData();  
    bytesAvailable = n;  
}
```

# CONTROL FLOW STATEMENT

## □ Nested IF statement

```
if(i == 10) {  
    if(j < 20) a = b;  
    if(k > 100) c = d;  
    else a = c;  
}  
else a = d;
```

# CONTROL FLOW STATEMENT

## □ IF – ELSE – IF statement

```
if (conditional statement)
    statement1;
else if(conditional statement)
    statement2;
else if(conditional statement)
    statement3;
...
...
else
    statement n;
```

# EXAMPLE (IF ~ ELSE)

```
class IFelse {
    public static void main(String args[]) {

        int month = Integer.parseInt(args[0]);
        String MtoS;

        if(month == 12 || month == 1 || month == 2)
            MtoS = "겨울";
        else if(month == 3 || month == 4 || month == 5)
            MtoS = "봄";
        else if(month == 6 || month == 7 || month == 8)
            MtoS = "여름";
        else if(month == 9 || month == 10 || month == 11)
            MtoS = "가을";
        else
            MtoS = "해당되는 계절이 없습니다.";

        System.out.println( month + " 월은 " + MtoS + " 입니다.");
    }
}
```

# Quiz: Grade processing depending on input values

```
class IFelse {
    public static void main(String args[]) {

        int month = Integer.parseInt(args[0]);
        String MtoS;

        if(month == 12 || month == 1 || month == 2)
            MtoS = "겨울";
        else if(month == 3 || month == 4 || month == 5)
            MtoS = "봄";
        else if(month == 6 || month == 7 || month == 8)
            MtoS = "여름";
        else if(month == 9 || month == 10 || month == 11)
            MtoS = "가을";
        else
            MtoS = "해당되는 계절이 없습니다.";

        System.out.println( month + " 월은 " + MtoS + " 입니다.");
    }
}
```



# CONTROL FLOW STATEMENT( SWITCH )

## □ SWITCH STATEMENT

- Multiple selection; have a number of possible execution paths.
- Suitable for use depending on the values of the results
- similar to if-else-if statement

```
switch (expression) {  
    case value1:  
        statements ;  
        break;  
    case value2:  
        statements;  
        break;  
    .....  
    case value n:  
        statements;  
        break;  
    default:  
        statements to be processed implicitly;  
}
```

# CONTROL FLOW STATEMENT( SWITCH )

## □ Nested SWITCH statement

```
switch(count) {  
  case 1:  
    switch(flag) {  
      case 0:  
        System.out.println("flag is zero");  
        break;  
      case 1:  
        System.out.println("flag is one");  
        break;  
    }  
    System.out.println("내포된 switch문 실행");  
    break;  
  case 2:  
    .....
```

# EXAMPLE (SWITCH)

```
class Switch {
    public static void main(String args[]) {
        for(int i=1; i<5; i++)
            switch(i) {
                case 1:
                    System.out.println(i + " : 가위 ");
                    break;
                case 2:
                    System.out.println(i + " : 바위");
                    break;
                case 3:
                    System.out.println(i + " : 보");
                    break;
                default:
                    System.out.println(i + "는 1에서 3사이의 값이 아닙니다.");
            }
        }
    }
}
```

# EXAMPLE (SWITCH)

```
class SwitchNoBreak {
    public static void main(String args[]) {
        int month = Integer.parseInt(args[0]);
        String MtoS;
        switch (month) {
            case 12:
            case 1:
            case 2:
                MtoS = "겨울 입니다.";
                break;
            case 3:
            case 4:
            case 5:
                MtoS = "봄 입니다.";
                break;
            case 6:
            case 7:
            case 8:
                MtoS = "여름 입니다.";
                break;
```

```
        case 9:
        case 10:
        case 11:
            MtoS = "가을 입니다.";
            break;
        default:
            MtoS = "12개월 이내의 달이 아닙니다.";
        }
        System.out.println(month + "월은 " + MtoS );
    }
}
```

# Quiz: 성적의 산술 환산점수 계산 PG

```
class SwitchNoBreak {
    public static void main(String args[]) {
        int month = Integer.parseInt(args[0]);
        String MtoS;
        switch (month) {
            case 12:
            case 1:
            case 2:
                MtoS = "겨울 입니다.";
                break;
            case 3:
            case 4:
            case 5:
                MtoS = "봄 입니다.";
                break;
            case 6:
            case 7:
            case 8:
                MtoS = "여름 입니다.";
                break;
```

```
        case 9:
        case 10:
        case 11:
            MtoS = "가을 입니다.";
            break;
        default:
            MtoS = "12개월 이내의 달이 아닙니다.";
        }
        System.out.println(month + "월은 " + MtoS );
    }
}
```

## □ Control Flow Statement

- IF ~ [ELSE]

- SWITCH ~ CASE