Sentencias condicionales

Sentencia if-else

- Permite a un programa tomar un camino de ejecución u otro dependiendo del valor de una expresión

```
if (expression)
    statement1
else
    statement2
```

Ejemplo 1

```
short temperature = 25;

if (temperature > 30)
{
    cout << "It's hot" << endl;
}
```

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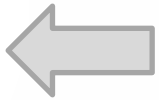
short temperature = 25;

if (temperature > 30);
{
    cout << "It's hot" << endl;
}
```



Ejemplo 2

```
if (true)
     cout << “hello”;
if (0)
     cout << “good-bye”;
```

Ejemplo 3

```
const float PI = 3.1416;
float radius, area;

cout << "enter radius: ";
cin  >> radius;
if (radius <= 0)
{
    cout << "Error: radius must be >0 !" << endl;
    exit(1);
}

area = PI * radius * radius;

cout << "The circle with radius " << radius
     << " has area " << area << "." << endl;
```

Ejemplo 3 (mejorado)

```
cout << "enter radius: ";
cin  >> radius;

if (radius <= 0)
{
    cout << "Error: radius must be >0 !" << endl;
}
else
{
    area = PI * radius * radius;
    cout << "The circle with radius " << radius
         << " has area " << area << "." << endl;
}
```

Indentación

```
if (not_properly_indented == true)
{
    cout << “This is”;
    cout << “ an example”;
  cout << “ of bad”;
       cout << “indentation.”;
cout << endl;}
```

```
const int MAX_GR = 100, MIN_A = 90, MIN_B = 80, MIN_C = 70, MIN_D = 60;

cout << "enter average: ";
cin  >> avg;

if (avg > MAX_GR)
    cout << "Error: average out of range!" << endl;
else
    if (avg >= MIN_A)
        grade = 'A';
    else
        if (avg >= MIN_B)
            grade = 'B';
        else
            if (avg >= MIN_C)
                grade = 'C';
            else
                if (avg >= MIN_D)
                    grade = 'D';
                else
                    grade = 'F';
```

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cout << "enter average: ";
cin  >> avg;

if (avg > MAX_GR)
    cout << "Error: average out of range!" << endl;
else if (avg >= MIN_A)
    grade = 'A';
else if (avg >= MIN_B)
    grade = 'B';
else if (avg >= MIN_C)
    grade = 'C';
else if (avg >= MIN_D)
    grade = 'D';
else
    grade = 'F';
```

Sentencia switch-case

- La sentencia switch-case es una forma más elegante/compacta/sencilla de expresar un if-else encadenado

Sintaxis

```
switch (control_var)
{
     case value1:
          statement1
          break;
     case value2:
          statement2
          break;
     .
     .
     .
     case valueN:
          statementN
          break;
     default:
          default_statement
}
```

```
short choice;

cout << "\t\tAnimal Sounds" << endl << endl
     << "\t1. Pig" << endl
     << "\t2. Dog" << endl
     << "\t3. Cow" << endl << endl
     << "\t\tYour choice: ";
cin  >> choice;

switch (choice)
{
    case 1:
        cout << "Oink";
        break;
    case 2:
        cout << "Bark";
        cout << "Ruffruff";
        break;
    case 3:
        cout << "Moooo" << endl;
        break;
}
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introduzco: 2

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