Selection Statements

- if Statements
- switch Statements
- Conditional Operators

if Statements

```
if (booleanExpression)
{
  statement(s);
}
```

Example:

```
if ((i >= 0) && (i <= 10))
{
  System.out.println("i is an " +
    "integer between 0 and 10");
}
```


The *if...else* Statement

```
if (booleanExpression)
{
  statement(s)-for-the-true-case;
}
else
{
  statement(s)-for-the-false-case;
}
```

if...else Example

```
if (radius >= 0)
{
  area = radius*radius*PI;
 System.out.println("The area for the “
    + “circle of radius " + radius +
    " is " + area);
}
else
{
  System.out.println("Negative input");
}
```


Nested if Statements

- Example : Using Nested `if` Statements
  - Write down a program that reads in number of years and loan amount and computes the monthly payment and total payment. The interest rate is determined by number of years.

Conditional Operator

```
if (x > 0) y = 1
else y = -1;
```

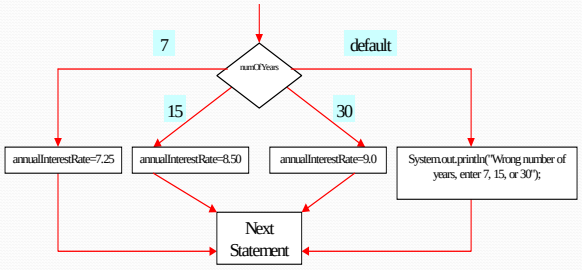
is equivalent to

```
y = (x > 0) ? 1 : -1;
```


switch Statements

```
switch (year)
{
  case 7:  annualInterestRate = 7.25;
           break;
  case 15: annualInterestRate = 8.50;
           break;
  case 30: annualInterestRate = 9.0;
           break;
  default: System.out.println(
   "Wrong number of years, enter 7, 15, or 30");
}
```

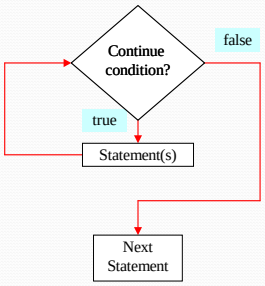
switch Statement Flow Chart



Repetitions

- `while` Loops
- `do` Loops
- `for` Loops
- `break` and `continue`

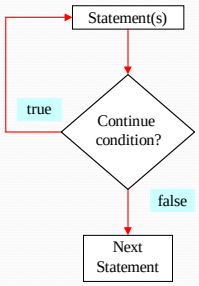
while Loop Flow Chart



do Loops

```
do
{
  // Loop body;
} while (continue-condition)
```

do Loop Flow Chart



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for Loops

```
for (control-variable-initializer;
      continue-condition; adjustment-statement)
{
   //loop body;
}
```

```
int i = 0;
while (i < 100)
{
  System.out.println("Welcome to Java! " + i);
  i++;
}
```

Example:

```
int i;
for (i = 0; i<100; i++)
{
  System.out.println("Welcome to Java! " + i);
```

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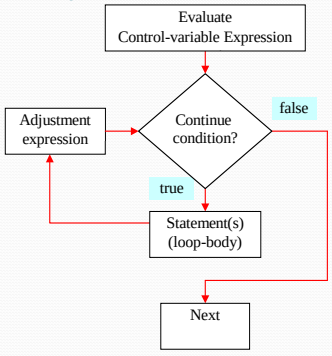
for Loop Flow Chart



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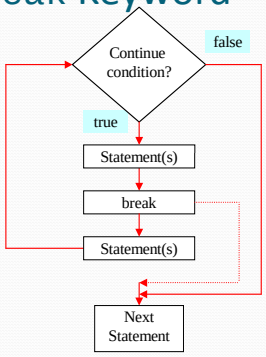
The break Keyword



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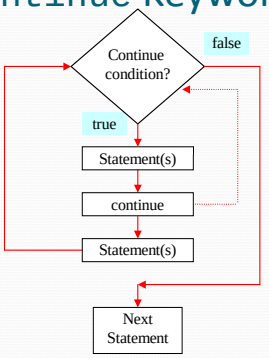
The `continue` Keyword



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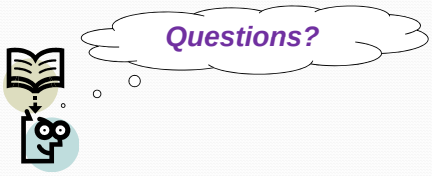
The End



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