

The slide features a light blue background with abstract circuit-like patterns in purple and orange. These patterns include lines, dots, and small circular components, primarily located in the top-left, bottom-left, and bottom-right corners. The word "Tests" is prominently displayed in the center-left in a large, bold, dark blue font.

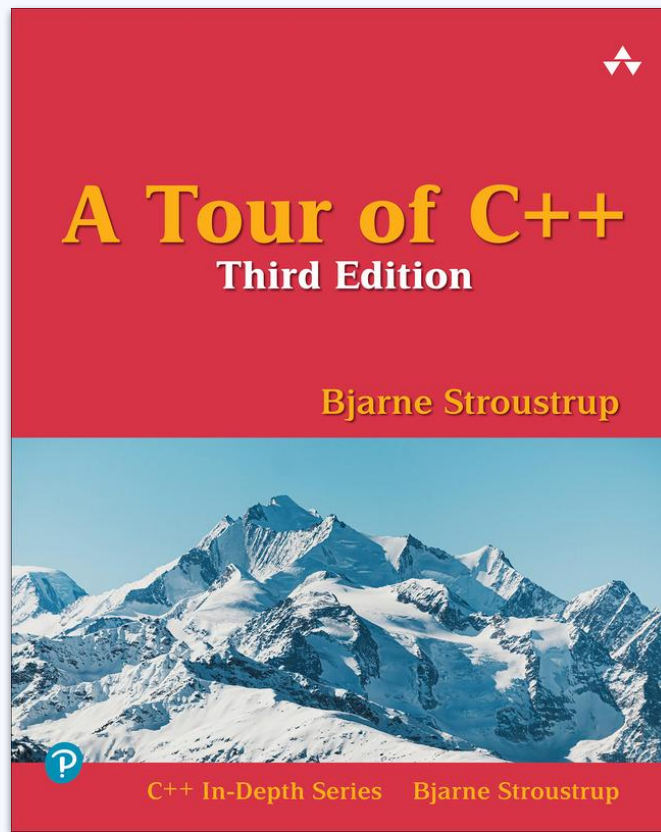
# Tests

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CSE 232 – Dr. Josh Nahum

# Reading:

Section 1.8





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00

if / else

---



# flow control bodies

## single statement body

```
if (x == 6)
    std::cout << "x is six";
```

No need for braces if body  
consists of just one statement

## multi-statement body

```
if (x == 6) {
    std::cout << "x is six";
    ++x;
}
```

Braces allow the body of a flow  
control statement to consist of  
zero or more statements

# else statements

## single statement body

```
if ( x == 6)
    std::cout << "x is six";
else
    std::cout << "not six";
```

## multi-statement body

```
if (x == 6) {
    std::cout << "x is six";
    ++x;
} else {
    std::cout << "not six"; --x;
}
```

# conditional expressions

## "true" values

```
if (x)
```

```
while (x)
```

```
for (...; x; ...)
```

All of the above check if x has a "true" value. Any non-zero value is considered true.

## Both equivalent

```
if (x)
```

```
if (x != 0)
```

```
if (!x)
```

```
if (x == 0)
```

```
'\0', 0, nullptr
```

These are all the same



01

**break / continue**

---



# break

```
for (int x = 0; x < 5; ++x) {  
    if (x % 3 == 0) {  
        cout << "x is evenly divisible by 3"  
            << endl;  
        break;  
    }  
    cout << "x is " << x << endl;  
}
```

Prints out:

x is evenly divisible by 3

# continue

```
for (int x = 0; x < 5; ++x) {  
    if (x % 3 == 0) {  
        cout << "x is evenly divisible by 3"  
            << endl;  
        continue;  
    }  
    cout << "x is " << x << endl;  
}
```

Prints out:

x is evenly divisible by 3  
x is 1  
x is 2  
x is evenly divisible by 3  
x is 4



**02**

**for loop details**

---



# for loop (while loop)

```
for (init_statement; condition; iteration_expression)  
    statement
```

Mostly equivalent to:

```
init_statement;  
while (condition) {  
    statement;  
    iteration_expression;  
}
```

# for loop (optional parts)

```
for (init_statement; condition; iteration_expression)
    statement
```

The `init_statement`, `condition`, and `iteration_expression` are all optional. An empty condition is always true.

```
for (;;) { // Infinite loop unless there is a break statement.
    ...
}
```

# for loop (scope)

```
for (init_statement; condition; iteration_expression)  
    statement
```

Variables declared in the `init_statement` are in scope until the end of the for loop.

As mentioned previously, a `continue` statement causes the for loop statement to end, with the `iteration_expression` being executed next.



**03**

**other flow control**

---



# Other flow control



## Do-while loops

The body is executed before the condition is checked



## Conditional operator

An operator that allows flow control within an expression



## Goto

A statement that allows jumping to a label

The above are optional content that is not required for 232.



# Attribution

Please ask questions via Piazza

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