If/Else in C

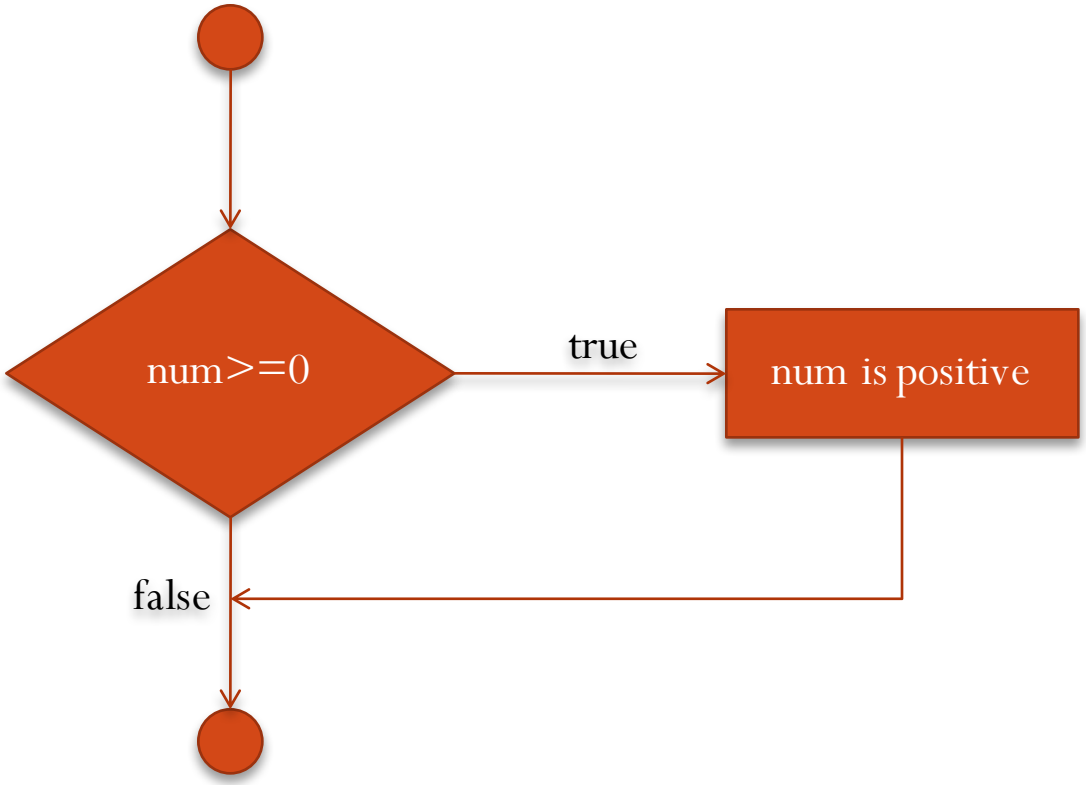
Increment & Decrement

- **Postfix**
- **j=i++;**
  - First current value of **i** is assigned to **j**
  - Then **i** is incremented
  - If the current value of **i** is 5
    - After the execution of the statement the value of
      - **i**: 6
      - **j**: 5

Increment & Decrement

- **Prefix**
- **j=++i;**
  - First **i** is incremented
  - Then current value of **i** is assigned to **j**
  - If the current value of **i** is 5
    - After the execution of the statement the value of
      - **i**: 6
      - **j**: 6

if statement



if statement

- Selection statement/conditional statement
- Operation governed by outcome of a conditional test
- **if(*expression*) *statement*;**
  - *expression*:
    - any valid C expression
  - If *expression* is **true** *statement* will be executed
  - If *expression* is **false** *statement* will be bypassed
  - **true**: any nonzero value
  - **false**: zero
  - Normally *expression* consists of relational & logical operator

true, false

- **true**: any **nonzero** value
- **false**: **zero**

if statement

```
#include<stdio.h>
int main(void)
{
  int num;
  scanf("%d", &num);
  if(num>=0) {
    printf("num is positive");
  }
  return 0;
}
```

if statement

- Common programming error:
  - Placing ; (semicolon) immediately after condition in **if**
    - if(*expression*); *statement*;
  - Confusing equality operator (==) with assignment operator (=)
    - if(a=b)
    - if(a=5)
    - if(9=5)
      - left operand must be l-value
    - if(9+5)

if statement

```
#include<stdio.h>
int main(void)
{
  int num;
  scanf("%d", &num);
  if(num>=0) {
     printf("num is positive");
  }
  if(num<0) {
     printf("num is negative");
  }
  return 0;
}
```

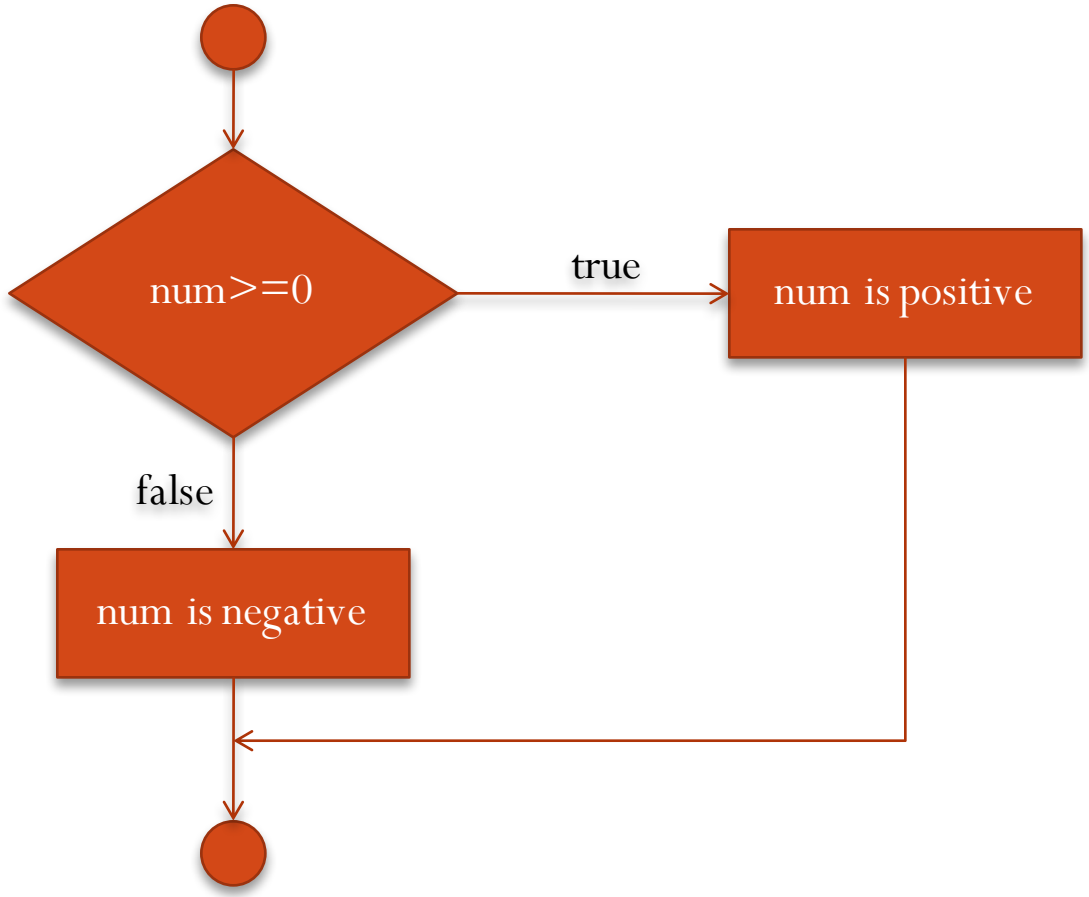
if-else statement

- if(*expression*) *statement1*;

  else *statement2*;

  - If *expression* is **true** *statement1* will be evaluated and *statement2* will be skipped
  - If *expression* is **false** *statement1* will be bypassed and *statement2* will be executed
  - Under no circumstances both the statements will execute
  - Two-way decision path

if-else statement



if-else statement

```
#include<stdio.h>
int main(void)
{
   int num;
   scanf("%d", &num);
    if(num>=0) {
            printf("num is positive");
    }
    else {
            printf("num is negative");
    }
   return 0;
}
```