Conditional program flow

true or false?

0 is false

Anything but 0 is true

Comparison ==, <, >, <=, >=, !=

```
== /*equal */
<= /* less than */
>= /* greater than */
!=  /* not equal */
!    /* means not */
```

```
5 == 5 /* is true */
4 == 5 /* is false */
4 <= 5 /* is true */
4 >= 5 /* is false */
4 != 5  /* is true */
!1        /* is false */
!0        /* is true */
```

if

```
if(  /* condition is true */  ) {
   /* then this code is executed */
}
```

```
#include <stdio.h>

int main(int argc, char **argv)
{
   int x=5, y=8;

   if( x < y ) {
      printf("x is less than y\n");
   }
   return 0;
}
```

if-else

```
if(  /* condition is true */  ) {
   /* then this code is executed */
} else {
   /* condition is false, this code is executed */
}
```

```
#include <stdio.h>

int main(int argc, char **argv)
{
    int x=5, y=8;
    if( x < y ) {
        printf("x is less than y\n");
    } else {
        printf("x is more than y\n");
    }
}
```

for

```
for( /* start */ ; /* condition */ ; /* each loop */  ) {
    /* then this code is executed */
}
```

```
#include <stdio.h>

int main(int argc, char **argv)
{
    for( i=0; i < 10; i++ ) {
        printf("%d < 10 is %d\n",i, i<10);
    }
    printf("after loop\n");
    printf("%d < 10 is %d\n",i, i<10);
    return 0;
}
```

while

```
while(  /* condition is true */  ) {
   /* then this code is executed until */
   /* the condition evaluates to false */
}
```

```
#include <stdio.h>

int main(int arga, char**argv)
{
   int x=0, y=8;

   while( x < y ) {
      printf("%d < %d\n",x,y);
      x++;
   }
   return 0;
}
```

do-while

```
do {
    /* then this code is executed until */
    /* the condition evaluates to false */
} while (  /* condition is true */  );
```

```
#include <stdio.h>

int main(int argc, char**argv)
{
    int x=0, y=8;
    do {
        printf("%d < %d\n",x,y);
        x++;
    } while( x < y );
    return 0;
}
```

```
#include <stdio.h>

int main(int argc, char**argv)
{
    int x=0, y=8;
    do {
        printf("%d < %d\n",x,y);
    } while( ++x < y );
    return 0;
}
```

switch

```
switch (expression) {
    case 0:
        /* expression is == 0 */
    break;
    case 1:
        /* expression == 1 */
    break;
    default:
        /* expression is not 0 or 1 */
    break;
}
```

```
#include <stdio.h>

int main(int arga, char**argv)
{
    for( int i=0; i < 4; i++ ) {
        switch( i ) {
            case 0:
                printf("i==0\n");
            break;
            case 1:
                printf("i==1\n"); break;
            default:
                printf("%d is not 0 or 1\n",i);
            break;
        }
    }
    return 0;
}
```

Assignment

Clone my repo michellundell/3a-program-flow-operators

Compile and run 3a-conditions-and-bits.c, look at the code and compare with the output.

Then edit the 3a-using-all-stuff.c and add code that use if, for, while, do, switch statements. It should also demonstrate the use of comparisons ==, !=, <=, >= and how to use the !

Then make a pull-request for your changes of the 3a-using-all-stuff.c

Happy coding.