

hello, section!

week 1

## CS50 resources

- walkthroughs
- lecture notes
- office hours
- conceptual shorts
- reference sheets
- reference50
- CS50 discourse

variables

variables

containers for values

```
int x = 5;
```



int x

variables

declaration

```
int x;
```



```
int x
```

variables

assignment

`x = 5;`



`int x`

variables

instantiation

```
int x = 5;
```



```
int x
```

variables

instantiation

```
int x = 5;
```



```
int x
```



variables

## native data types

- int 4 bytes
- long 8 bytes
- char 1 byte
- float 4 bytes
- double 8 bytes

1 byte = 8 bits

variables

## CS50 data types

→ string

→ bool

qualifiers

→ unsigned

operators

## operators

`x = x + 1;`

`x += 1;`

`x++;`

# operators

+

-

\*

/

%

operators

&&

||

!

# operators

<

<=

>

>=

==

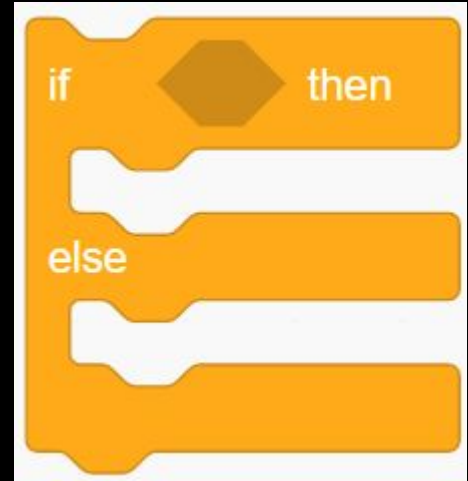
!=

conditionals



# conditionals

```
if (temperature is over 80°)
{
    wear shorts
}
else if (temperature is over 30°)
{
    wear jeans
}
else
{
    cry
    wear leggings and jeans
}
```



# conditionals

```
if (sad)
{
    cry
}
if (temperature is over 80°)
{
    wear shorts
}
else
{
    wear jeans
}
```

# conditionals

```
if (temperature is over 80° && formal)
{
    wear dress
}
else if (temperature is over 80° && casual)
{
    wear shorts
}
else
{
    wear jeans
}
```

# conditionals

```
int x = get_int("Give me a 1, 2, or 3\n");

switch(x)
{
    case 1:
        printf("One!\n");
        break;
    case 2:
        printf("Two!\n");
        break;
    case 3:
        printf("Three!\n");
        break;
    default:
        printf("Sorry!\n");
}
```

## conditionals

`x < 10 && y >= 3`

`x == 5 || y > 17.6`

`((x > 10 && y < 5) || z != 14)`

## conditionals

`x < 10 && y >= 3`

`x == 5 || y > 17.6`

`((x > 10 && y < 5) || z != 14)`

looping

# looping

```
while (boolean-expression)  
{  
}
```





# looping

do

{

}

while (boolean-expression)

# looping

```
for (int i = 0; i < 10; i++)  
{  
}
```



# looping

```
int i = 0;
while (i < 10)
{
    printf("%i\n", i);
    i++;
}
```

```
int j = 0;
do
{
    printf("%i\n", j);
    j++;
}
while (j < 10);
```

```
for (int k = 0; k < 10; k++)
{
    printf("%i\n", k);
}
```

linux commands

# linux commands

ls

ctrl-c

make

hands on activities

## pset requirements

- make a github account
- hello.c
- mario.c (less comfy OR more comfy)
- cash.c OR credit.c

be sure to use CS50 Labs!