



9/9

0800 Antan started
 1000 " stopped - antan ✓

| | | | | |
|--|------------------------|---------|------------------------|-----------------------|
| | | | { 1.2700 | 9.037 847 025 |
| | | | | 9.037 846 995 correct |
| | 13 ⁰⁰ (032) | MP - MC | 1.98247000 | |
| | | | 2.130476415 | 4.615925059(-2) |
| | (033) | PRO 2 | 2.130476415 | |
| | | correct | 2.130676415 | |

Relays 6-2 in 033 failed special speed test
 in relay " 10.000 test.

Relay
 2145
 Relay 3370

1100 Started Cosine Tape (Sine check)
 1525 Started Mult + Adder Test.

1545



Relay #70 Panel F
 (moth) in relay.

First actual case of bug being found.
~~1630~~ Antan started.
 1700 closed down.

`say` `hello, world!`

statements

```
say hello, world!
```

mouse down?

Boolean expressions

mouse down?

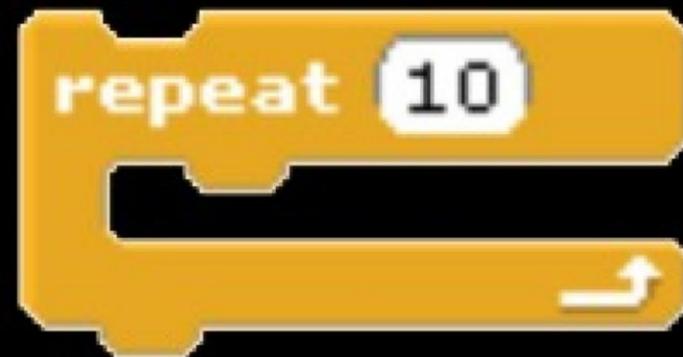


conditions





loops

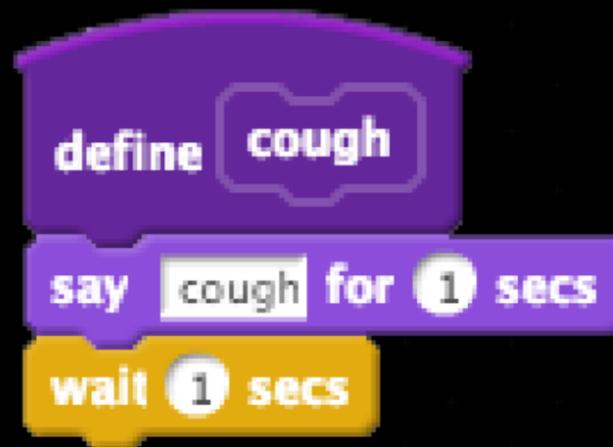


define cough

say cough for 1 secs

wait 1 secs

functions



code source code

`#include`

`<stdio.h>`

```
int    main(void)
{
    printf("hello,
world\n");
}
```

compiler

source code

compiler

source code

compiler object code

00000000 00000000 00000000 00000000 00000000 00100000 00000000 00000000

...



when  clicked

say



```
int    main(void)
{
    printf("hello, world\n");
}
```

statements

A Scratch-style 'say' block with a purple background and a white text field containing the text 'hello, world'.

say hello, world

statements

A Scratch-style 'say' block with a purple background and a white text field containing the text 'hello, world'.

say hello, world

```
printf("hello, world\n");
```

loops



loops



```
while (true)
{
    printf("hello, world\n");
}
```

loops



A Scratch 'repeat' block (yellow) with the number '10' in a white circle. Inside the repeat block is a 'say' block (purple) with the text 'hello, world' in a white box. The 'say' block has a small white arrow pointing to the right at its bottom right corner.

loops



A Scratch 'repeat' block (yellow) with the number '10' in a white circle. Inside the repeat block is a 'say' block (purple) with the text 'hello, world' in a white box. The 'say' block has a small white arrow pointing to the right at its bottom right corner.

```
for (int i = 0; i <
10; i++)
{
    printf("hello, world!\n");
}
```

variables



variables

```
int counter = 0;  
while (true)
```



```
{  
  printf("%d\n",  
  counter);  
  counter++;  
}
```

```
printf("%d\n",  
counter);  
counter++;
```

Boolean expressions

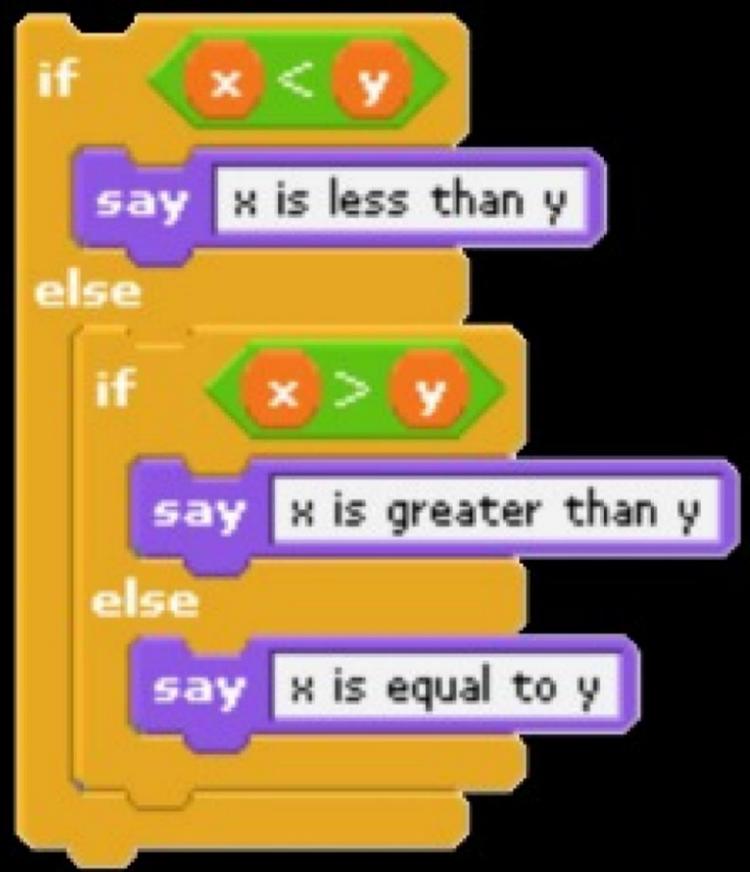


Boolean expressions



`((x < y) && (y < z))`

conditions



A Scratch code block containing an 'if' statement with three branches. The first branch is 'if x < y' with a 'say x is less than y' block. The second branch is 'else if x > y' with a 'say x is greater than y' block. The third branch is 'else' with a 'say x is equal to y' block.

```
if (x < y)
{
    printf("x is less than y")
}
else if (x > y)
{
    printf("x is greater than y")
}
else
{
    printf("x is equal to y")
}
```

```
#include <stdio.h>
```

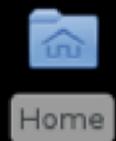
```
int main(void)
```

```
{
```

```
    printf("hello,
```

```
world!");
```

```
}
```



CS50

how to write a program

gedit



hello.c (~) - gedit

File Edit View Search Documents Help

Source Code

Functions
main

hello.c x

```
1 #include <stdio.h>
2
3 int main(void)
4 {
5     printf("hello, world\n");
6 }
```

jharvard@appliance (~):

Terminal

C v

Tab Width: 4 v

Ln 6, Col 3

INS

50 Menu



hello.c (~) - gedit

19-0



20 Menu



hello.c (~) - gedit

18-0



how to compile a
program

```
make hello
```

how to run a program

```
./hello
```

Linux commands

ls

mkdir

cd rm

rmdir

...

how to compile a
program

```
clang ---o hello hello.c
```

how to run a program

```
./hello
```

functions

```
main
```

Standard Library

```
stdio.h
```

printf

...

CS50 Library

cs50.h

GetChar

GetDouble

GetFloat

GetInt

GetLongLong

GetString

types

char

double

float

int

long

long

...

to be continued...