This is CS 50. Harvard College’s Introduction to Computer Science I

COMPUTER SCIENCE 50

WEEK 0

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let socks_on_feet = 0
while socks_on_feet != 2
   open sock drawer
   look for sock
   if you find a sock then
      put on sock
      socks_on_feet++
   end if
   look for matching sock
   if you find a matching sock then
      put on matching sock
      socks_on_feet++
   end if
   close sock drawer
else
   remove first sock from foot
   socks_on_feet--
end else
else
   do laundry and replenish sock drawer
#include <stdio.h>

int main(int argc, char *argv[]) {
    printf("O hai, world!\n");
}

0 hai, C!

hai.c
#include <stdio.h>

int
main(int argc, char *argv[])
{
    printf("O hai, world!\n");
}
0 hai, Scratch!

Hai1.sb
Statements

say "O hai, world!"

wait 1 secs

play sound "meow"
Statements

Hai{2,3}.sb
Boolean Expressions

touching mouse-pointer?
mouse down?
and
Conditions
Conditions
Hai\{4,5\}.sb
Loops

- `forever`
- `repeat 10`
Loops
Hai{6,7,8}.sb
Variables

Count{1,2}.sb
Arrays

- add thing to inventory
- delete 1 of inventory
- insert thing at 1 of inventory
- replace item 1 of inventory with thing
- item 1 of inventory
- length of inventory
Arrays

FruitcraftRPG.sb

- When I receive outside
- Show
- Forever if touching hero?
- Add Orange to inventory
- Hide
Threads

Move1.sb

- when clicked
- go to x: 0 y: 0
- point in direction 90°
- forever
- if touching edge?
- play sound Scream-male2 until done
- turn 180 degrees
- move 5 steps
Threads
Move2.sb

when clicked

go to x: -150 y: 150

point in direction 45

forever

if touching edge ?
    if on edge, bounce

if not touching cat ?
    move 3 steps

when clicked

go to x: -160 y: -160

point in direction pick random 91 to 179

forever

if touching bird ?
    play sound roar
    stop script

point towards bird

move 1 steps
Threads

Hai10.sb
Threads
David.sb

when flag clicked
set size to 70%
go to x: 0 y: -5
set score to 0
point in direction 90
clear graphic effects

forever
point in direction 90
set x to pick random (-180) to (180)
wait 0.5 secs
say [ ]
if touching leftGlove or touching rightGlove
say stop that
change score by 1
point in direction pick random 70 to 90
change color effect by 10
if score > 15
point in direction 0
say I got pwned!
stop script

when down arrow key pressed
-go to front
set y to -140
point in direction 0
move 60 steps
turn ↼ -15 degrees
play sound Glass2
rest for 0.4 beats
turn ↼ 15 degrees
move ↼ -60 steps

when left arrow key pressed
change x by -6

when right arrow key pressed
change x by 6
Events

Marco.sb

when clicked
forever
if key space pressed?
say Marco! for 2 secs
broadcast event

when I receive event
say Polo! for 2 secs
Sensors

singer.sb, Masquerade.sb, davidwu.sb
Oscartime

Oscartime.sb
Oscartime

Displaying the instructions

Drag as much falling trash as you can to Oscar’s trash can before his song ends!
Oscartime
Making trash fall
Oscartime
Implementing dragging
Oscartime

Imposing a time limit

when green-flag clicked
set costume to oscar1
set score to 0
set scoring to 0
play sound soundtrack
wait 104 secs
set playing to 0
wait 2 secs
set costume to oscar1
wait 0.25 secs
set costume to oscar2
wait 01 secs
set costume to oscar3
wait 01 secs
set costume to oscar4
wait 01 secs
set costume to oscar5
wait 01 secs
set costume to oscar6
wait 1 secs
say Your score is...
wait 3 secs
say score
wait 3 secs
say Thanks for all the trash!
wait 5 secs
stop all

Thanks for all the trash!
Oscartime
Keeping score

when I receive scored
if playing = 1
set scoring to 1
wait 0.5 secs
set costume to oscar1
wait 0.25 secs
set costume to oscar3
wait 0.1 secs
set costume to oscar4
wait 0.1 secs
set costume to oscar5
wait 0.1 secs
set costume to oscar6
change score by 1
say score
wait 1.5 secs
say nothing
set costume to oscar7
wait 0.1 secs
set costume to oscar8
wait 0.1 secs
set costume to oscar1
wait 0.1 secs
set scoring to 0
Oscartime

Raising Oscar’s lid

when clicked
forever
if playing = 1 and not scoring = 1
if distance to Trash < 40 or distance to Sneaker < 40 or distance to Newspaper < 40 or
set costume to oscar2
else
set costume to oscar1
Scratch Meets C

int main(int argc, char * argv[])
{
    printf("O hai, world!\n");
}

```c
```
Statements

Scratch v. C

printf("O hai, world!\n");
Boolean Expressions

Scratch v. C

\[(x < y) \land (y < z)\]
if (x < y)
{
    printf("x is less than y\n");
}
else if (x > y)
{
    printf("x is greater than y\n");
}
else
{
    printf("x is equal to y\n");
}
while (1) {
    printf("O hai!\n");
}

for (int i = 0; i < 10; i++) {
    printf("O hai!\n");
}
int counter = 0;
while (1) {
    printf("%d\n", counter);
    counter++;
}
Arrays

Scratch v. C

```c
char *inventory[SIZE];
inventory[i] = "Orange";
```