This is CS50

syllabus at cs50.yale.edu
Week 0
73% of CS50 students have never taken CS before
More Comfortable 9%

Somewhere in Between 33%

Less Comfortable 58%
what ultimately matters in this course is not so much where you end up relative to your classmates but where you, in **Week 11**, end up relative to yourself in **Week 0**
problem solving
inputs $\rightarrow$ [ ] $\rightarrow$ outputs
binary
0, 1
decimal
0, 1, 2, 3, 4, 5, 6, 7, 8, 9
1 2 3
ASCII

A B C D E F G H I ...
65 66 67 68 69 70 71 72 73 ...
H
72 73 33
HI!
72 73 33
algorithms
pick up phone book
open to middle of phone book
look at names
if Smith is among names
call Mike
else if Smith is earlier in book
open to middle of left half of book
go back to step 2
else if Smith is later in book
open to middle of right half of book
go back to step 2
else
quit
pick up phone book
open to middle of phone book
look at names
if Smith is among names
  call Mike
else if Smith is earlier in book
  open to middle of left half of book
go back to step 2
else if Smith is later in book
  open to middle of right half of book
go back to step 2
else
  quit
0 pick up phone book
1 open to middle of phone book
2 look at names
3 if Smith is among names
   call Mike
4 else if Smith is earlier in book
   open to middle of left half of book
   go back to step 2
5 else if Smith is later in book
   open to middle of right half of book
   go back to step 2
6 else
    quit
0 pick up phone book
1 open to middle of phone book
2 look at names
3 if Smith is among names
   call Mike
4 else if Smith is earlier in book
   open to middle of left half of book
   go back to step 2
5 else if Smith is later in book
   open to middle of right half of book
   go back to step 2
6 else
   quit
pick up phone book
open to middle of phone book
look at names
if Smith is among names
call Mike
else if Smith is earlier in book
open to middle of left half of book
go back to step 2
else if Smith is later in book
open to middle of right half of book
go back to step 2
else
quit
The graph shows the relationship between the size of the problem and the time to solve it. The equation is $n \propto n/2$, indicating that the time to solve grows linearly with the size of the problem.
The graph illustrates the time to solve a problem as a function of the size of the problem. The time to solve for a problem of size $n$ is represented by the red line, for $n/2$ by the yellow line, and for $\log n$ by the green line.
problem solving
This is CS50
lectures

attend first

...

attend middle

...

attend last
lectures

Scratch
C
Arrays
Algorithms
Memory
Data Structures
...
Machine Learning
Python
HTTP
SQL
JavaScript
The End
walkthroughs

most Thursdays at 4pm

embedded in every problem set
problem sets

released on Fridays

due (10 days later) on Mondays at noon
problem sets

Scratch
C
C
C
C
C
C
Python
Python, SQL
JavaScript
take as first year?

take with other courses?
sections

less comfortable

more comfortable

somewhere in between
sections

Mondays

Tuesdays
office hours

Wednesdays
Thursdays
Sundays
CS50 Puzzle Day
17 Hillhouse
Sat 9/3/16, 12pm - 3:30pm
cs50.yale.edu/register
CS50 Coding Contest
```c
#include <stdio.h>

int main(void)
{
    printf("hello, world\n");
}
```
functions
loops
variables
Boolean expressions
conditions
arrays
threads
events
...
say hello, world
forever
say hello, world
repeat 50
  say hello, world
$x < y$
If $x < y$ then
say $x$ is less than $y$
else
If $x > y$ then
say $x$ is greater than $y$
else
say $x$ is equal to $y$
broadcast message
when I receive message
define cough n

repeat n

say cough for 1 secs

wait 1 secs