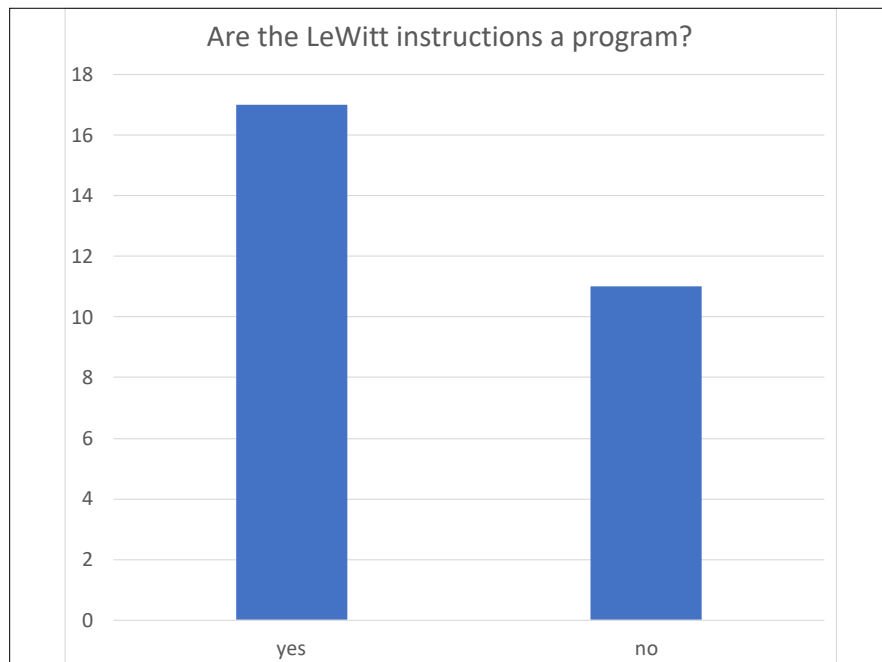


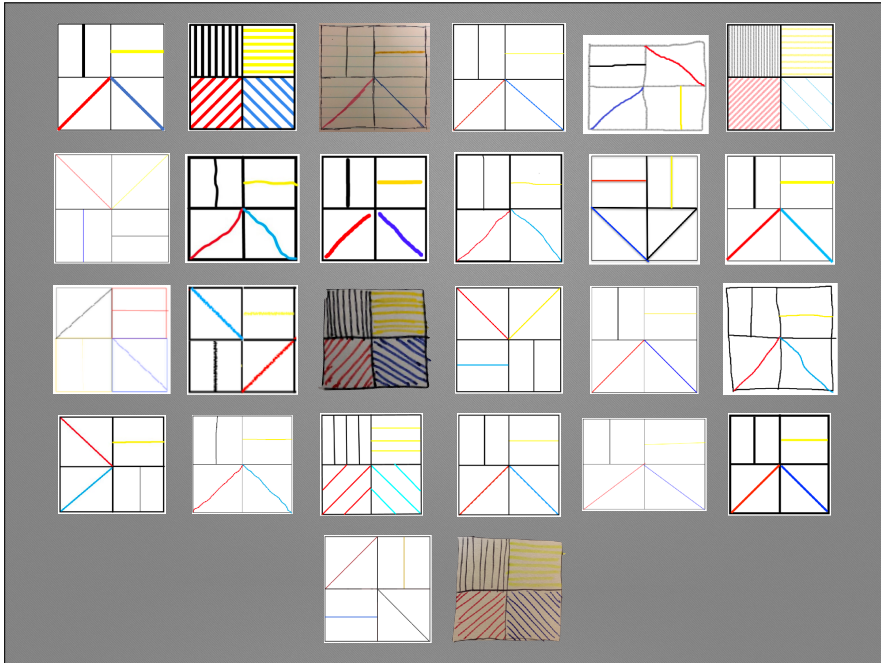
CSCI 334:  
Principles of Programming Languages

Lecture 2

Instructor: Dan Barowy  
**Williams**

Are the LeWitt instructions a program?





When are you done?



Sketches



## Context

## Context

The painting was inspired by the artist's sister, who hallucinated seeing their deceased parents in the house.

## Context

The painting was inspired by the artist's sister, who hallucinated seeing their deceased parents in the house.

"I wanted to say something about how life just simply evaporates...When you are young, you always think things are ahead of you. You get older you realize that there's not so much ahead; it's all in the past. I wanted to capture that."



Activity:

Activity:

1. Look at each sketch, comparing to final painting.

Activity:

1. Look at each sketch, comparing to final painting.
2. What do you think was the purpose of each sketch?

Activity:

1. Look at each sketch, comparing to final painting.
2. What do you think was the purpose of each sketch?
3. What differences or similarities do you see between sketches?

Activity:

1. Look at each sketch, comparing to final painting.
2. What do you think was the purpose of each sketch?
3. What differences or similarities do you see between sketches?
4. If you could write down the artist's "process" as an algorithm, what do you think that it would look like?

I think both processes are essentially the same.

I think both processes are essentially the same.

aesthetic

I think both processes are essentially the same.

aesthetic

+

I think both processes are  
essentially the same.

aesthetic  
+  
technical

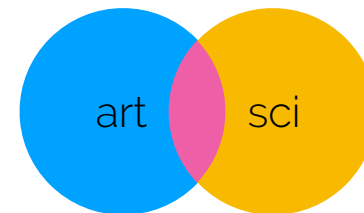
I think both processes are  
essentially the same.

aesthetic  
+  
technical

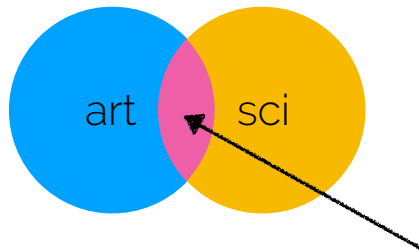
(Knuth)

If programming were just science,  
we wouldn't have to do it anymore.

If programming were just science,  
we wouldn't have to do it anymore.

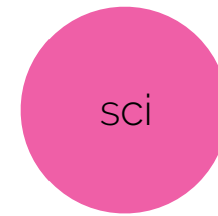


If programming were just science,  
we wouldn't have to do it anymore.

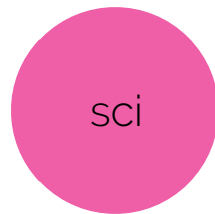


most real programming is here

The goal of PL research is generally to  
make programming a science:



The goal of PL research is generally to  
make programming a science:



Me: Yes! In the meantime, recognize the  
importance of the "non-science" part.

"perhaps programming languages should be written  
more intuitively to enhance the 'trance'" — Hee-Sung



Which watch would you rather buy?



C

C

Read the "Intro" doc.

C

Read the "Intro" doc.

If you haven't started, start now.

## Function Declaration

```
#include <stdio.h>

int main() {
    printf("Hello world!\n");
    return 0;
}
```

```
#include <stdio.h>

int main() {
    hello();
    return 0;
}

void hello() {
    printf("Hello world!\n");
}
```

```
#include <stdio.h>

void hello() {
    printf("Hello world!\n");
}

int main() {
    hello();
    return 0;
}
```

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

```
void hello();
```

```
int main() {  
    hello();  
    return 0;  
}
```

```
void hello() {  
    printf("Hello world!\n");  
}
```

## Function Application

## Call stack

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

```
void hello() {  
    printf("Hello world!\n");  
}
```

```
int main() {  
    hello();  
    return 0;  
}
```

---

Call stack

```
#include <stdio.h>

void hello() {
    printf("Hello world!\n");
}

→ int main() {
    hello();
    return 0;
}
```

Call stack

```
#include <stdio.h>

void hello() {
    printf("Hello world!\n");
}

→ int main() {
    hello();
    return 0;
}
```

Call stack

```
#include <stdio.h>

→ void hello() {
    printf("Hello world!\n");
}

int main() {
    hello();
    return 0;
}
```

Call stack

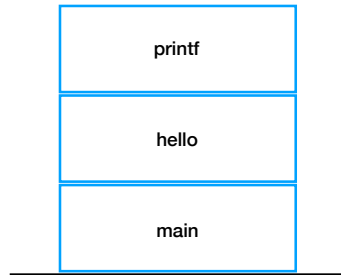
```
#include <stdio.h>

→ void hello() {
    printf("Hello world!\n");
}

int main() {
    hello();
    return 0;
}
```

Call stack





Call stack

```
#include <stdio.h>

void hello() {
    printf("Hello world!\n");
}

int main() {
    hello();
    return 0;
}
```

```
#include <stdio.h>

void hello() {
    printf("Hello world!\n");
}

int main() {
    hello();
    return 0;
}
```



Call stack



Call stack

```
#include <stdio.h>

void hello() {
    printf("Hello world!\n");
}

int main() {
    hello();
    return 0;
}
```



Call stack

```
#include <stdio.h>

void hello() {
    printf("Hello world!\n");
}

int main() {
    hello();
    return 0;
}
```

program is done

"man" pages

Final projects

