

## Final Projects

Sketchy, Othello, Pacman, Evolution,  
Indy

1

---

---

---

---

---

---

## Sketchy

TAs: Taylor, Lucy, Aalia, Andy,  
Wambui, Cooper, Dora, Georgia, Lily,  
Niyoshi, Olivia, Nicole, Milla

2

---

---

---

---

---

---

## Some info

- Build an application which lets you make art
- Manipulate shapes (fill color, resize, rotate, etc.)
- Draw lines
- Layer shapes
- Undo/Redo
- File saving and loading



3

---

---

---

---

---

---

## Video

---

4

---

---

---

---

---

---

### Top 5 Reasons to do Sketchy (1/5)

---

Adobe Photoshop = really complicated?????



Windows Paint = 😞

Sketchy = literally the greatest product ever designed



---

---

---

---

---

---

5

### Top 5 Reasons to do Sketchy (2/5)

---



2 HTAs for the price of 1

i mean look at them

---

---

---

---

---

---

6

### Top 5 Reasons to do Sketchy (3/5)

You never have to use Arrays again. Ever.\*

```
int[ ][ ] nums = new int[10][10]
```



\*We can't actually guarantee  
that you'll never use them  
again in your life. Sorry.

---

---

---

---

---

---

7

### Top 5 Reasons to do Sketchy (4/5)

I'm sorry, was one shitty arcade game not good enough for you ?????

We don't play games.

---

---

---

---

---

---

8

### Top 5 Reasons to do Sketchy (5/5)

Real footage of Indy HTA Julie Wang talking about being  
~quirky~ and ~not like other TAs~



---

---

---

---

---

---

9

Demo

10

Othello

TAs: Noah, Maura, Gil, Julia, Lisa, Lucy  
W., Marina, Selena, Sierra, Tom, Tzion

11

Some info

- Othello is a two-player strategy board game also known as Reversi
  - Create your own multi-level Artificial Intelligence (AI) player that can play a human user or another AI
  - Have ~fun with recursion~ and make an interactive GUI



12

## Video

---

13

---

---

---

---

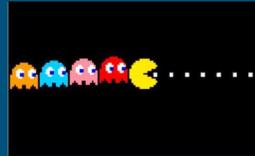
---

---

### Top 5 Reasons to do Othello (1/5)

---

Because who wants to  
make *another* composite  
shape again



(I mean just look at those ghosts)

(and Sketchy is literally just a tool to make  
MORE composite shapes)

14

---

---

---

---

---

---

### Top 5 Reasons to do Othello (2/5)



You can play with Oreos.

No argument necessary really. How  
could you pass this up?

15

---

---

---

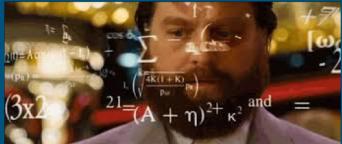
---

---

---

## Top 5 Reasons to do Othello (3/5)

All CS15 TAs that did Othello are now CS15 TAs




---

---

---

---

---

---

16

## Top 5 Reasons to do Othello (4/5)

It's more than creating a project.  
It's creating a long-lasting friendship.




---

---

---

---

---

---

17

## Top 5 Reasons to do Othello (5/5)

What are some of the best recursion jokes?

10 Answers

Anonymous  
Written Apr 23, 2013  
The best recursive joke

What are some of the best recursion jokes?



Jokes · 2 min  
What are some of the best recursion jokes? ↗ 101

Add Question Details  
Comment · Share · Options

2 Answers

Asked to Answer (4)

Your friends will never  
get tired of your super  
original and witty  
recursion jokes

---

---

---

---

---

---

18

Top 5 Reasons to do Othello (6/5)

Even Shakespeare says Othello was his greatest accomplishment

 William Shakespeare @Shakespeare · Nov 15  
Othello (the CS15 project not my play) was my greatest accomplishment

3 46 158

19

---



---



---



---



---



---

Demos

---



---



---



---



---



---



21

---



---



---



---



---



---

Some info

---

- Super rad arcade game
- Write an AI for the Ghosts by implementing a Breadth-First Search algorithm
- Play against said ghosts as you "test your game"
- Opportunities for fun extra credit like fruit and extra levels

22

---

---

---

---

---

---

Video

---



---

---

---

---

---

---

23

Top 5 Reasons to do Pacman (1/5)

---

Have you been having trouble landing your jokes?	Do you want people to think that you're funny?
--	--

"Before doing Pacman I had never told a joke. After completing Pacman, people won't stop laughing at me" -cvogler

2/3 Humor TAs did Pacman!

This day is bananas. B-A-N-A-N-A-S!

---

---

---

---

---

---

24

Top 5 Reasons to do Pacman (2/5)

"To be or not to be, that is the question. To do Othello or not to do Othello, that... that is not even a question."  
(Hamlet, Act III, Scene I)

25

---



---



---



---



---



---

Top 5 Reasons to do Pacman (3/5)

Sketchy is all about pretty pictures so we took a relevant screenshot:

---



---



---



---



---



---

26

Top 5 Reasons to do Pacman (3/5)

---



---



---



---



---



---

27

**Top 5 Reasons to do Pacman (4/5)**

---

All of the Sketchy TAs actually have a deep passion for Pacman but were reassigned to Sketchy to meet TA quotas

**WHEN YOU'VE GOT ALL THE RECEIPTS**

28

---

---

---

---

---

**Top 5 Reasons to do Pacman (5/5)**

---

Indy? More like IntheCITallthetime

"I hAvE pRiOr cOdiNg eXpErieNcE"

29

---

---

---

---

---

**Demos**

---

30

---

---

---

---

---



TAs: Noah, Mikey, Marlene, Madison,  
Rachel, Julie, Zoe, Zach, Will

31

---



---



---



---



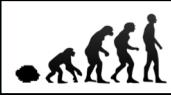
---



---

### Some info

- A brand new final project!
- ML based project where Birds learn how to play FlappyBird on their own
- Broken up into 3 parts:
  - Part 1: Code FlappyBird (it's like an easier DoodleJump)
  - Part 2: Make a population of birds that learn how to beat the game by themselves!
  - Part 3: Optimize your design
- Go through the super satisfying experience of watching your bird babies learn to fly hnnng



32

---



---



---



---



---



---

### Some More info

- Since this project is brand new, we will be restricting the number of students that can take this project.
- You must fill out the form at the top of the handout by Wednesday (tomorrow, 11/20) at noon to be considered.
- You'll hear back Wednesday (tomorrow) night

33

---



---



---



---



---



---

Generation 1

---

---

---

---

---

34

Generation 2

---

---

---

---

---

35

Generation 3

---

---

---

---

---

36

## Generation 4

---

37

---

---

---

---

---

---

## Generation 5

---

38

---

---

---

---

---

---

## Generation 6

---

39

---

---

---

---

---

---

## Top 5 Reasons to do Evolution (1/5)

- If you choose another FP it means you don't believe in evolution

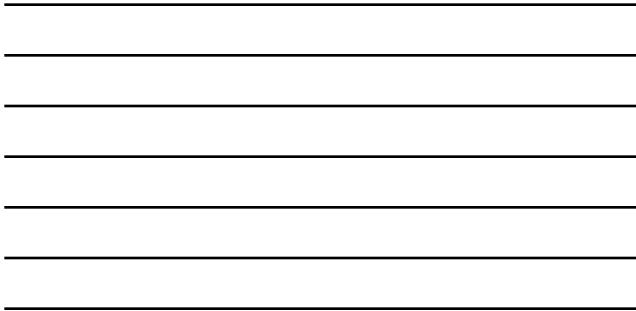


Charles Darwin @dwn · Nov 16  
Anybody who doesn't do Evolution doesn't believe in evolution

1 0 0 0 0 0 0

\*made in shitty microsoft paint sketchy

40



Top 5 Reasons to do Evolution (2/5)	
• It's the only project that actually has AI	
<b>DOING SKETCHY</b>	
<b>[IMPLEMENTING "BFS" AT [IF STATEMENTS] IN PACMAN]</b>	
<b>[IMPLEMENTING "GAME PLAYING" AT [IF STATEMENTS] IN OTHELLO]</b>	
<b>ACTUALLY IMPLEMENTING AI IN EVOLUTION</b>	

41



## Top 5 Reasons to do Evolution (3/5)

- Because no one has ever TA'd this project before, there will be ample opportunities to post about how bad we are on Dear Blueno

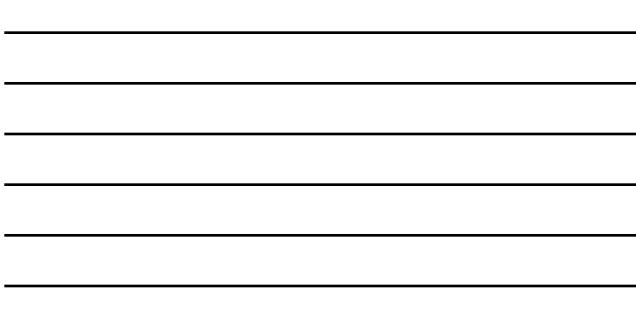


Dear Blueno  
November 17 at 3:31 PM · 

13370 - Why do I feel like none of these Evolution TAs have ever done the project before?

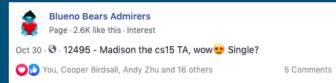
  8 15 Comments

42



## Top 5 Reasons to do Evolution (4/5)

- Because we are the most attractive TAs, there will also be ample opportunities to post about how attractive we are on Blueno Bears Admirers



43

---

---

---

---

---

---

---

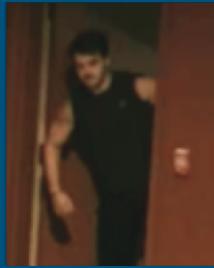
---

---

---

## Top 5 Reasons to do Evolution (5/5)

- If you don't do evolution then you've gots to be garbage collected




---

---

---

---

---

---

---

---

---

---

44

Demo

---

---

---

---

---

---

---

---

---

---

45

VIDEO taylor pls

---



---



---



---



---

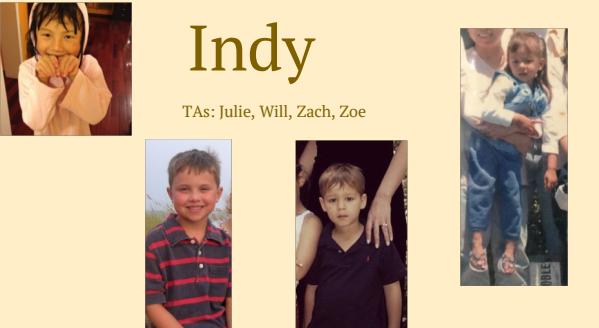


---

46

## Indy

TAs: Julie, Will, Zach, Zoe




---



---



---



---



---



---

47

## Some info

- You design your own project!!
- Requirements:
  - Appropriate length (e.g. not LiteBrite)
  - Use a data structure
  - Use an algorithm of moderate complexity (at least as complicated as Tetris's line clearing)
  - Originality
- Possibilities are endless!

---



---



---



---

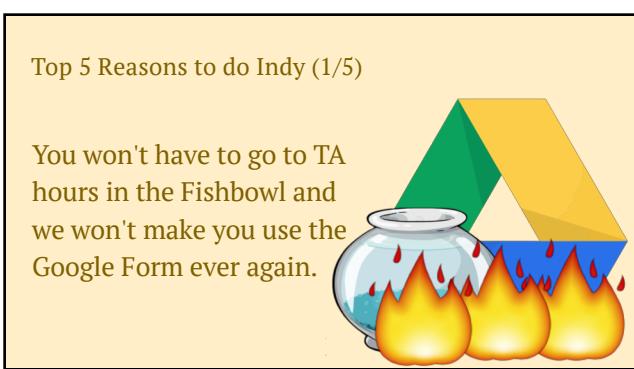


---



---

48



49

---



---



---



---



---



50

---



---



---



---



---



51

---



---



---



---



---

### Top 5 Reasons to do Indy (3/5)

None of Pacman's reasons were even about Pacman, they were all just about the other FPs




---

---

---

---

---

52

### Top 5 Reasons to do Indy (4/5)

Indy is only one letter away from Andy




---

---

---

---

---

53

### Top 5 Reasons to do Indy (5/5)

010010011 - Wow, I can't believe how fulfilling it has been to design, code, and test my own project!!

12913 - Tag your favorite CS15 TAs!!

2874 - TBH my one regret is not doing Indy in CS15

---

---

---

---

---

54

## Top 5 Reasons to do Indy (6/5)

**You get to interact with  
Cooper Birdsall and  
Cooper Birdsall**

i mean.. uhh.. zach and will




---

---

---

---

---

55

## Demos

---

---

---

---

---

56

## Very Important Indy Information

- If you're interested in doing Indy, you should
  - Develop an initial plan for yours soon. If you have any questions you can email the Indy TAs at: [jwang73@cs.brown.edu](mailto:jwang73@cs.brown.edu), [wbuerger@cs.brown.edu](mailto:wbuerger@cs.brown.edu), [zbeckman@cs.brown.edu](mailto:zbeckman@cs.brown.edu) and [zmothner@cs.brown.edu](mailto:zmothner@cs.brown.edu)
  - Find a "backup" Final Project that you'll do in case your project doesn't get approved
- **Send us a project proposal by THIS THURSDAY MIDNIGHT**
- Keep in mind—Indy is a much larger time commitment than the other final projects
  - You'll be responsible for creating your own program specs and design (other projects already have this planned out)
  - There's a lot of freedom in this assignment—be comfortable with the lack of structure!
- It's a lot of work, but a lot of fun!

---

---

---

---

---

57

## Announcements

---

---

---

---

---

---

---

58

## Announcements

---

- Final Project Help Sessions during class time **\*this Thursday\***
  - Locations were sent out in email yesterday
  - Make sure to read the handout thoroughly before coming—it'll save you lots of time down the road
- Fill out the Final Project Declaration form by Saturday 11:59 pm
  - You will only be able to sign up for hours for the project you pick, so think carefully!
- Tetris late deadline is today at 11:59 pm

---

---

---

---

---

---

---

59