Final Projects

Sketchy, Pacman, Othello & Indy
What are the CS15 final projects?

- Final chance to show off and develop your Object-Oriented Programming skills with a large individual program!
- 25% of your final grade
- Like all other projects, you **must** meet Minimum Functionality on the Final Project to pass the course
Logistics

- **All final projects will be completed individually**
- There are 4 Final Project options for you to choose from
- We’ve divided our TA staff among the projects; each project will have their own TA hours schedule
- Starting early is CRUCIAL! The average student reports ~40-50 hours
- You **cannot** use late days on this assignment; if you submit past the on-time handin, you will get an 8% deduction
Timeline

- **Today, November 16th**.................................................FPs released
- **Saturday, November 18th @ 1PM ET**........................Virtual FP Help Sessions
- **Saturday, November 18th @ 11:59PM ET**................FP Declaration Form due
- **Sunday, December 3rd, @ 10:00PM ET**......................Code checkpoint due
  - Must come to Conceptual Hours to be checked off for your FP-specific code checkpoint
- **Sunday, December 10th @ 11:59PM ET**.......................Early handin deadline
- **Tuesday, December 12th @ 11:59PM ET**.....................On-time handin deadline
- **Thursday, December 14th @ 5PM ET**.........................Late handin deadline
  - the late deadline should only be used if you need to meet MF. You will lose -8% of your grade if you submit on the late deadline, you may NOT use late days for the final project
  - If you haven’t submitted anything by 5PM on Dec 14th, you will NC the course
Final Project Options

- Sketchy — Graphical editing program
- Othello — Human and AI Othello board game simulation
- Pacman — Classic Pacman arcade game
- Indy — DIY Final Project
“Dumping on other projects is key. They have to be vicious.” -avd

Let the roasts commence!
Couldn’t get in? make it yourself!
Missing MS paint? make it yourself!
RISD degree? make it yourself!
- Build an application which lets you make art!
- Manipulate shapes (fill color, resize, rotate, etc.)
- Draw lines
- Undo/Redo
- File saving and loading
Unleash your inner artist!

Adobe Photoshop (Single App) - ...
$263.88
adobe.com

Free delivery

Sketchy

PRICELESS
Why Sketchy?

Easy! to test!

You want to waste time learning how to PLAY?
Tetris got you down?

Why Sketchy?

Tired of all those ArrayIndexOutOfBoundsExceptions?

We have the solution for you!
Why Sketchy?

You never have to use 2D Arrays again. EVER.*

*We can’t actually guarantee that you’ll never use them again in your life. Sorry.
Emma Watson would've done Sketchy

Why Sketchy?

I ❤️ SKETCHY
It’s Andy’s Favorite FP!

source: Man invented computer graphics, you’re saying he won’t love painting with a computer?
The Made in Sketchy Gallery 😊
"The feminine urge to just..."
INDY STUDENTS WRITING THEIR PROPOSALS

SKETCH ALREADY

ME SHOWING UP TO DEBUGGING FOR THE 1000TH TIME
2d arrays? You still on that? booo

BFS?? more like BarF. Sounds... it’s not even real AI.

Ghosts? Halloween was last month - past tense.

Where’s the originality? The creativity?
Some other hashtags support sketchy more than their own too 💖 💘 💝 ❤️🔥💞
I hate to bring it up, but... COINCIDENCE ISN'T REAL.
Othello: It’s a real tragedy 😔

Raise your hand if you know what Othello is.

Code it? Gonna have to learn how.

Visual Hole. 4th gen flop. No slay colors.

Brown · 11h
if there one thing cs15 is good for, it’s ruining my favorite games

adam · 12:31 PM
I spent 1.5 hours trying to understand Othello rules 😅
Othello: It's a real tragedy 😔

Mississippi Floods

"At least I can still play Othello"

- nobody

IT'S OH HELLLL NO, NOT OTHHELLO
Demo
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 player or another AI
- Can play the game with oreos
Roast
Othello
Most STACKED TA Staff!!!!

Creator of GPTA (he learned AI from Othello!!)

Former cartoon winners💪👑🥇

Answers all your ed questions

lexi 21 days ago
no need to flex that you have ayman in your house

anastasio 12 days ago
You are a God @ayman

grant 7 days ago
Wait why are we all cracked

cameron 7 days ago
because all the smart and cool people do othello
SKETCHY

“You guys always act like you're better than me”

OTHELLO  PACMAN  INDY

OTHELLO  ANDY

PACMAN

SKETCHY
emily h 11:30 AM
@channel if anyone is free, can you come to the CIT right now to be an extra in the Sketchy skit

sarah o 11:37 AM
pls 🙈

2 replies Last reply today at 11:39 AM
STOP HE'S ALREADY DEAD

any and all are welcome, we accept people from pacman, othello, and even sketchy (edited)
<table>
<thead>
<tr>
<th>SKETCHY 😄</th>
<th>OTHELLO</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Laughable</td>
<td>- Cool</td>
</tr>
<tr>
<td>- bffr</td>
<td>- Not ugly</td>
</tr>
<tr>
<td></td>
<td>- Imagine showing your friends back home AI you programmed - vs Imagine showing them Sketchy 🙁</td>
</tr>
</tbody>
</table>
I’M GONNA DO PACMAN!
Mom, can we have PACMAN?

No. There is PACMAN At Home

PACMAN At home...

![Pacman Game](https://imgflip.com)
Is the breadth-first search algorithm considered to be AI?

The Breadth-First Search (BFS) algorithm itself is not considered artificial intelligence (AI). BFS is a fundamental algorithm used for traversing or searching tree or graph structures. It systematically explores all the vertices at the same level before moving on to the next level, making it useful for tasks such as finding the shortest path between two nodes in a graph.
<table>
<thead>
<tr>
<th>Pacman 😊</th>
<th>Othello</th>
</tr>
</thead>
<tbody>
<tr>
<td>- That debugging line...</td>
<td>- You'll be home before the queue ends</td>
</tr>
<tr>
<td>- Ugly</td>
<td>- Sexy</td>
</tr>
<tr>
<td>- Lame</td>
<td>- Fun</td>
</tr>
<tr>
<td>- Boring</td>
<td>- Highest grade avg 😊</td>
</tr>
<tr>
<td>- BFS (fake AI)</td>
<td>- Real AI</td>
</tr>
</tbody>
</table>

Hates andy 🙄рактикующий 👎

Loves andy 😍❤️🔥

![Image of Keanu Reeves with heart](image-url)
3: INDY 💀
imagine
INDY STUDENTS EXPLAINING THEIR PROJECT

THEY DON'T KNOW I DID INDY AS MY FP
The indy tas over thanksgiving break, 2022
Gavin pondering his life choices after choosing Indy
Anastasio searching for Indy TAs
<table>
<thead>
<tr>
<th>Indy 🎭</th>
<th>Othello 💪</th>
</tr>
</thead>
<tbody>
<tr>
<td>- That project proposal... 😞</td>
<td></td>
</tr>
<tr>
<td>- hard</td>
<td></td>
</tr>
<tr>
<td>- Why would you do this</td>
<td></td>
</tr>
<tr>
<td>- No project proposal</td>
<td></td>
</tr>
<tr>
<td>- Less thinking</td>
<td></td>
</tr>
<tr>
<td>- Will not make your life hell (probably)</td>
<td></td>
</tr>
<tr>
<td>- More fun</td>
<td></td>
</tr>
<tr>
<td>- It's lit🔥</td>
<td></td>
</tr>
</tbody>
</table>
Which CS15 final project has the hottest and coolest TA’s?

<table>
<thead>
<tr>
<th>Project</th>
<th>Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Othello</td>
<td>83.5%</td>
</tr>
<tr>
<td>Sketchy</td>
<td>11.0%</td>
</tr>
<tr>
<td>Indy</td>
<td>6.8%</td>
</tr>
<tr>
<td>Pacman</td>
<td>2.3%</td>
</tr>
<tr>
<td>Prefer not to answer</td>
<td>0.3%</td>
</tr>
<tr>
<td>Other</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Chart: Peter Swope • Source: Brown Daily Herald & Brown Opinion Project • Get the data • Created with Datawrapper
CONCLUSION:

HOT PEOPLE DO OTHELLO
Demo!!
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
Brown Trivia 69: The Pax in CPax stands for Christina Paxman in honor of her favorite CS15 final project.
Top Reasons to Do Pacman
We Got Adam

You get to spend time with Adam - the only TA with a Morgan Stanley Vest ;)))

Has most ed answers out of any (former) HTA!!

We Have 2/3 STAs
(stands for smartest TAs)

Source: 2021 skits
...and all the other Sexiest TAs

Brown · Just now
To whoever decided Allie and Lexi would be the HTAs for Pac-Man, I love you. And them. Marry me Allie?

Brown · Just now
Ok can that one CS15 TA Julie pleaseeee step on me

Brown · Just now
My Pac-Man ta (Adam) just saw that he’s my screensaver. Wtf do I do I wanna cry

Brown · Just now
What am I gonna without Robyn and Juan next year. There will be nothing beautiful for me to look at. Nothing worth having eyes for anymore.

Brown · Just now
I want Caden to teach me about my systems 😚😊

Brown · Just now
I hope both sides of Owen’s pillows are cold tn❤️
Look at this duo

And Ilan with over 100 ed answers
Pacman is actually relevant

Proof that no one cares about the other projects

Look at the Pacman stats though ;))

HTAs fighting over who gets Pacman

Sketchy’s own HTA didn’t want it

Sketchy TAs had to beg the Slack for extras…pathetic
Pacman is superior to Othello

Even the TAs hate dislike Othello.

Othello TAs trying to rebrand it as “cookie mayhem” to make it sound less boring.

Not even Apple’s spell-check knows what Othello is.

What even is Othello? - Othello TA Karim (also part of the cookie mayhem movement)
Othello TAs are dirty

Cannon doesn’t even wash his hair…

Also rumor has it Cannon doesn’t believe in washing his hands/using hand sanitizer…?
JUMP SCARE
Othello TAs are all try-hards
Grant literally replies to ALL of his own ed posts

Grant and Sarah R pressure their students???
NEVER okay.

GRANT AND SARAH ARE THE BEST SECTION TA'S!!!
(Definitely wasn't pressured into doing this)  #604
Does anyone even know how to play Othello??

Yes, I am familiar with the game Pacman. It is a classic arcade game where the player controls a character that moves around a maze, eating pellets while avoiding ghosts. The objective is to eat all the pellets in the maze without getting caught by any of the ghosts. If you have any specific questions about implementing Pacman or any related concepts, feel free to ask! Keep up your enthusiasm for learning!

No
(4/5) Pacman is superior to Sketchy

Sketchy is all about pretty pictures so we took some relevant screenshots:

The Sketchy handout is 26 pages. Pacman’s is a respectable 19 <3

TV in Page-Rob telling you not to open any emails from Sketchy
What’s Sarah’s (Sketchy HTA) biggest weakness? Gmail or fun? We’ll let you decide for yourselves.

Good luck getting any help from Sketchy TAs. Doesn’t look like they have email figured out yet.

Can we get an f in the chat for the minion react?
Pacman is superior to Indy

Indy? More like
In the CIII all the time

Anastasio after convincing you
Indy is a good idea then
leaving you for the wolves (his
average response time on Ed
is 1.2 days)

Indy TAs are ruthless… see
for yourself

Not to mention their god
complexes

“i hAvE pRiOr
cOdInG
eXpErIeNcE”
In case you need more reasons not to do Indy...

Anastasio. Anastasio is the reason you should not do Indy.
Demo
Indy

(Featuring Anastasio, Gavin, Morgane, & David)
You design your own project!!✨

Requirements:

○ Appropriate length (e.g., not Pong)
○ Uses polymorphism
○ Uses a new data structure
○ Uses an algorithm of moderate complexity (at least as complicated as Tetris’ line clearing)
○ Originality

Possibilities are endless! ∞
Top Reasons to do Indy (a)

You don’t have to go to conceptual hours ever again 😫 😫 😫 😫 😫

us soon?
Top Reasons to do Indy (b)

1980

1883

Never made it to market
Self proclaimed "free thinkers" when they see little tasty orbs
trend since 1883 :/ (othello dropped)

forgot the rules 💀

they might be playing checkers ❗❗❗❗

not smiling
last to leave the CIT wins a dollar

my brother in christ

My friend

I can't wait to code an AI for othello
more trends :

wtf is an othello

cool shapes go brrrrr

i need to pick a fp

we got gta 6 before sketchy

i will do sketchy
average sketchy student

This month I'm doing a challenge called "November". It's where I try to make it through everyday of November.
STUDENTS all did indy cs15 final project
Top Reasons to do Indy (c)
Top Reasons to do Indy (d)

Guaranteed MOSS score of 0%
Top Reasons to do Indy (e)

You can put Indy in your brand new computer science portfolio (its 100% yours!) 😍

typical pacman student when they need a portfolio for their TikTok internship :( 
future indy student at brown reunion

USED TO BE BROKE BUT

DA ICE COMES WITH AGE

BUT MY MONEY STILL GRU
Top Reasons to do Indy (f)

**Indy** is only one letter away from **Andy**

(and only 3 letters from daddy 😊)
Top Reasons to do Indy (g)

Okay to the girl in cs15 who chatted with me the other day in line for hours... the fact that you’re doing indy is SO HOT. I’ll NEVER be as cool why did i ever pick Pacman😭😭😭...don’t make the same mistake

I JUST GOT ACCEPTED FOR INDY AHHHHH

TBH my biggest regret in life is not doing indy for CS15 FP😩

Ok but Indy student in the Sun Lab last night can... get. it. 😏 
Top Reasons to do Indy (h)

Pacman Handout?

Sketchy Handout?

Othello Handout?

But Othello has an extra handout!

The Indy handout is only 7 pages 😈
Top Reasons to do Indy (i)

- sketchy student after finally reading 26-page handout
- javadocs
- BFS
- pacman student after rewriting their tetris code to set up the board
- othello student after finally reading 21-page handout
Top Reasons to do Indy (j)

the other HTAs regret not doing indy

we have proof
anastasio can i tell you a secret

kk

i've been thinking
and indy is my favorite fp

.mocking:

i wish i didn't have to waste my time on pac-man and sketchy bugs :(

I didn’t choose the bug life
The bug life chose me

anastaso

hi

u so coool

i wish i did indy like you

r u drunk

Delivered

Hey bb

hey anastasio

can i please do indy instead of othello 😞➡️➡️

Edited

i keep forgetting the rules for othello

but indy is so cool because there are no rules!

No
Top Reasons to do Indy (k)

**PacMan:**
maximum score is only 3,333,360 points :(

**Othello:**
you lose to AI 😞

**Sketchy:**
you lost the second you picked sketchy
Logistics

Just a reminder that you do need to meet all the requirements listed in the handout to be approved to do Indy!

**BUT!** Don’t worry——we will help you meet the requirements if you are stuck or need to brainstorm together!

We want you to be as creative as possible while still meeting the requirements, and the Indy team is here to support!😊
Demos
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: aortiz18@cs.brown.edu, gdhanda@cs.brown.edu, mpizigo@cs.brown.edu, and dolaniyi@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 SATURDAY 11:59PM EDT**

- Keep in mind that 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!
Announcements
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Announcements (1/2)

- If you’re interested in Indy:
  - Submit your proposal to the Indy TAs using the form in the handout by Saturday at 11:59PM

- **Everyone, regardless of which project you want to do, must fill out the **FP declaration form **by Saturday at 11:59PM.**
  - This form is binding. If you want to switch afterward, you must email the HTAs.

- Come to HTA hours tomorrow (Friday) 3-4 PM in CIT 210 or on Zoom if you want to talk about which Final Project to do!
Announcements (2/2)

- NO TA hours today or from Monday, November 20 to Sunday Nov 27th
- TA Hours WILL be held from Friday, Nov 17th to Sunday, Nov 19th
- Monday, Nov 28th after Thanksgiving break hours will resume
  - Feel free to post on Ed over Thanksgiving break, although TA response time may be a bit slower
- No lecture on Tuesday!
- Pick up CS15 T-shirts after lecture today!
- Have a great break!
Extra Credit SRC Workshop #2

12/03/23
2:00pm - 3:00pm
3:00pm - 4:00pm

12/04/23
6:00pm - 7:00pm