

# **PYGMALION<sup>+</sup>**

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<https://pygmalionplus.herokuapp.com/>



# Pygmalion+ Description

- Our project seeks to create a learning environment for the Python programming language.
- It is unfortunately common for language documentation to be unorganized, and unintuitive to navigate.
- By laying out information in a humane and manageable way, we hope to facilitate accessibility to the proper information required to learn Python development on your own, and with a fun little twist...



# Preliminary User Survey Results

- Users want to have a personal account with information
- Most people want less text and more interactivity/images
  - People also favored the game aspect of our website
- Users would like the option to return to previous lessons
  - And do not want failure to be deemed as failure

## Pygmalion+ Interest

Our project seeks to create a learning environment for the Python programming language.

It is unfortunately common for language documentation to be unorganized, and uninviting to navigate.

By laying out information in a Humane and manageable way, we hope to facilitate accessibility to the proper information required to learn python development on your own, and with a fun little twist...

\* Required

What age group do you belong to? \*

- ☐ younger than 13
- ☐ 13-17
- ☐ 18-22
- ☐ older than 22

How would you best describe your coding background? \*

- ☐ No coding background
- ☐ Some coding experience
- ☐ A good amount of coding experience
- ☐ I wrote the Linux Kernel

Based on your experience, please tell us which of these qualities you would and would not like to see from a python tutorial website: \*

	Would Not Like to See	Neutral/Indifferent	Would Like to See
Interactive tutorials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organization of topics by skill level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fun animations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Game style progression	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Test cases given for tutorials	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reviews between important concepts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Video lessons in addition to text	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Have you tried any online tutorials to learn Python in the past? \*

- ☐ Yes
- ☐ No

If yes, select those you have used:

- ☐ CodingBat
- ☐ W3Schools
- ☐ Python's website
- ☐ TutorialsPoint
- ☐ LearnPython.org
- ☐ Codecademy
- ☐ Other: \_\_\_\_\_

Approximately how long, on average, did you spend on these sites?

- ☐ Less than an hour
- ☐ A few hours
- ☐ A day or two
- ☐ A week
- ☐ More than one week

# Persona

Name: Bill Smith

Age: 18

Location: Brooklyn, NY

Programming skill: Basic block coding

Traits: Extroverted, not as tall as his friends, always wears a Yankees baseball cap, enjoys learning about U.S. history, hates English class

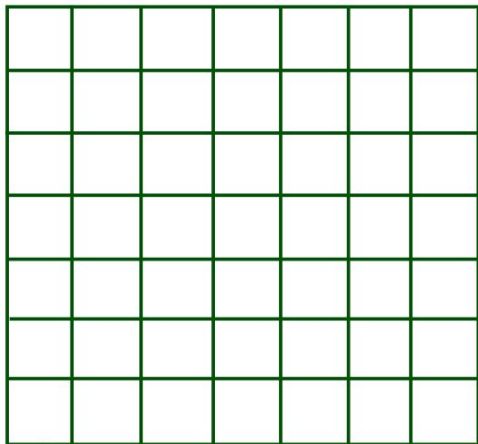
Description / Story: Billy is from Brooklyn, NY and he attends a private high school. His 20-year old brother is in college as a computer science major, and Bill was curious to learn more about coding aside from his block coding experience. Bill has attempted to learn python before, but has given up multiple times due to losing interest when reading through documentation and boring YouTube videos. Bill enjoys baseball and is a huge Yankees fan. Bill is a bright student but he does not apply himself as much as he should. He believes that Andrew Jackson was the worst U.S. president.



# First Design



Let's Play!



This is your first lesson! Click here to start!

This is your progress before your first boss challenge!

Sign Up

\* Name:

\* Email:

\* Password:  ?

\* Re-type password:

☐ I agree to the [Terms of Use](#) and [Privacy Policy](#).

[Learn more](#)



# User Feedback

- “I like the idea of building upon past levels in order to reinforce learning. It will help with retention of levels without making users repeat levels if they feel fuzzy on a topic.”
- Seemed afraid of the idea of snakes and ladders, being that typically in snakes and ladders, you lose progress permanently. However, this is not how our game works. We give suggestions based on progress and efficiency, rather than rewarding and punishing.
- Liked the idea of a game to learn coding



# Iterations



**Gameboard**

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

**Sign Up**

First name\* Last name\* Age \*

Email\*

Password\*

\*Indicates required field

CLOSE SIGN UP

**Pygmalion**

HOME PLAY ACCOUNT SIGN OUT

Pygmalion uses step-by-step tutorials to help you in the world of code!

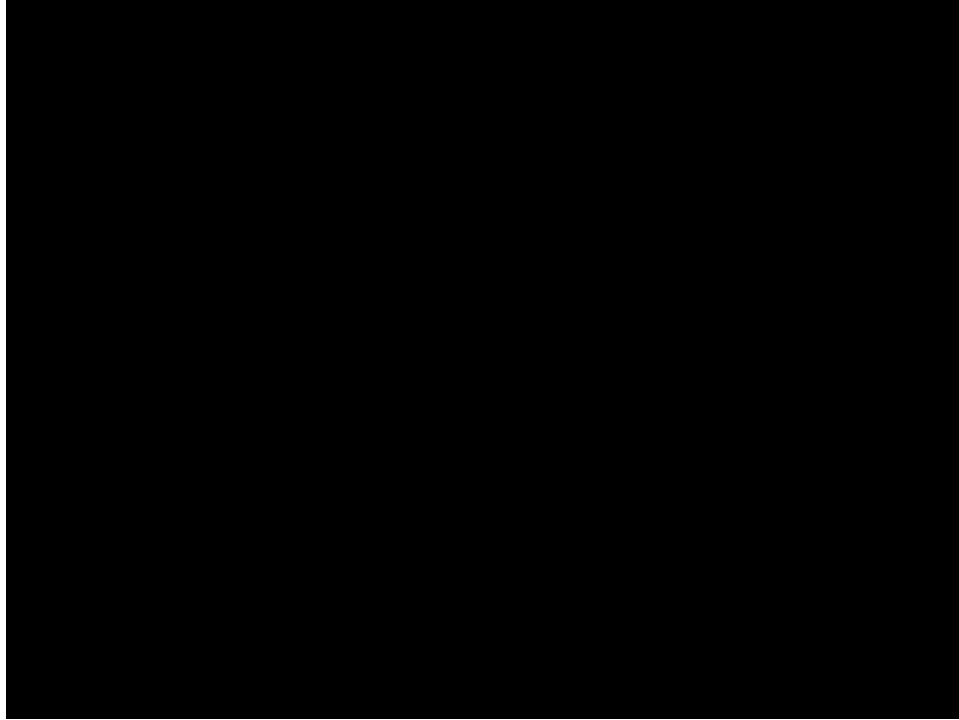
## Steps to get started:

1. Go to your [first lesson!](#)
2. Click the first square of the gameboard!
3. Be open minded to what Pyg the snake tries to teach you!
4. Keep practicing, even outside the classroom

# Demo/Walkthrough Final Design



Link below:



[https://drive.google.com/open?id=1XFAG\\_CWwrb4682qR6X\\_O7IAiKiuAXK-P](https://drive.google.com/open?id=1XFAG_CWwrb4682qR6X_O7IAiKiuAXK-P)





# Reviews of Design

- Perhaps could use more color to keep the user from getting bored
- The game design could be fleshed out more
  - How to implement snakes and ladders on the site
- Account page could be more descriptive



# Review of Design - Primary E

- Ease of use:
  - As it stands, a lot of documentation for certain facets of python are incomprehensible due to the sheer information being presented to the reader at once.
- We solved this problem by stripping out unnecessary information and making our lessons as concise as possible
  - This keeps the users attention from running out
  - This also strives to keep the user from getting confused and giving up



# Reviews of Design - Laws of Simplicity

- Minimalistic, simplistic, not designed to distract the user
- Mostly focused on “learn” and “reduce”
  - Learn - enforced the idea of repetition and comprehension
  - Reduce - minimized information overload and streamlined lessons



# Reviews of Design - PAR

## Perception

- simple to navigate interface with a clean background color contrast to be accessible for anyone
- minimalistic navigation menu bar right on top to clearly convey where any page is

## Attention

- game-like interface since games keep the attention of younger audiences

## Retention

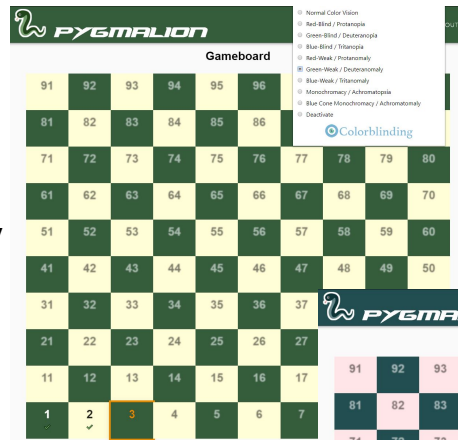
- relies on the retention of knowledge that the user gains from our educational interface
- will be required to remember long-term (or at the very least short-term...) if the user plans on proceeding to the next portion of the game and eventually winning the game.



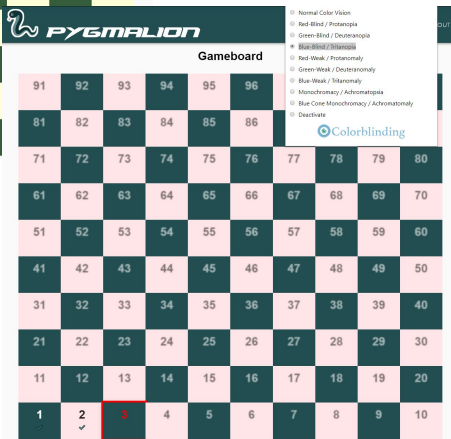
# Reviews of Design - Accessibility

- Design for our target audience
- Focus on younger user groups
  - Large fonts
  - High contrast colors
  - Friendly images
- Tooltips // Pyg, AI
- Game aspect!
- Useable for colorblind audiences
  - Use of icons, outlines, and blurs, rather than just changing color of gameboard

Green-Weak /  
Deuteranomaly



Blue-Blind /  
Tritanopia





# Future Work

- Future curriculums for other languages
  - Most likely JavaScript next
- A more robust gaming experience
- Mobile Application
  - iOS first for graphics
  - Android after because of larger learning curve

# Link to GitHub Repos



First high fidelity iteration (Bootstrap):

[https://github.com/mbrenner57/CS545\\_Pygmalion](https://github.com/mbrenner57/CS545_Pygmalion)



Current iteration (Vue):

<https://github.com/zildj/Pygmalion>

<https://pygmalionplus.herokuapp.com/>

