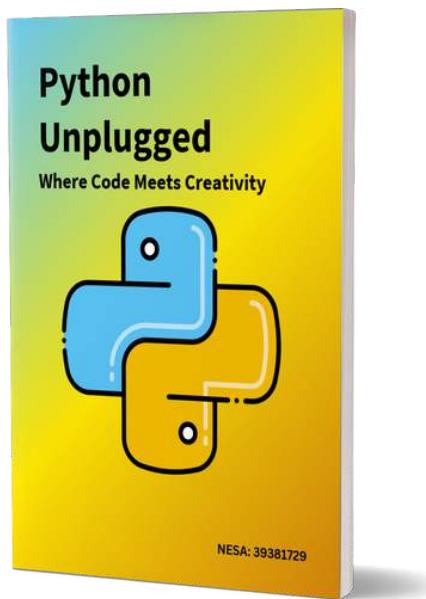


# PYTHON UNPLUGGED

A student-produced magazine exploring Python through creativity,  
logic and design



**39381729**

**Multimedia Technologies**

HSC 2025

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## Statement of intent

### Why Python? Why Unplugged?

My passion for Python began early in high school, but it was truly ignited through my participation in a Zoom-based Python bootcamp. Working on collaborative projects exposed me to real-world coding challenges and creative problem-solving, showing me how accessible and powerful Python can be. These experiences motivated me to go beyond following instructions and consider how programming could be taught in a more engaging and approachable way.

One of my first key decisions was to move away from traditional resources such as textbooks and video tutorials. I chose instead to create Python Unplugged, a magazine that combines clear teaching, dynamic visual design and humour. This format allowed me to present core programming concepts in a more interactive and visually stimulating manner.

After researching different formats, I decided on a physical magazine rather than a purely digital one. This was a deliberate choice to create a more memorable and hands-on learning experience. However, to ensure the magazine remained connected to the digital world, I integrated QR codes throughout the publication. These link to code demonstrations, Wikipedia entries and interactive puzzles. This hybrid approach supports active learning and ongoing updates.

Design-wise, I decided to use Canva as my main tool due to its layout flexibility, ease of collaboration and integration with multimedia elements. Through testing multiple layouts, I refined the visual hierarchy and colour palette to support readability and user engagement.

I also decided to include real coding moments, both successful and flawed, to authentically represent the learning journey. By showcasing bugs, problem-solving strategies and small wins, I aimed to encourage beginner coders and normalise the challenges of learning to code.

This portfolio documents the entire journey of producing Python Unplugged, from initial concept and research through to content creation and layout design. It reflects the decisions, experimentation and problem-solving involved in creating a resource that is both informative and engaging.

My goals for this project were to:

- Transform core Python concepts into interactive and creative experiences
- Celebrate coding as a tool for problem-solving and innovation
- Design a magazine that is informative, engaging and visually appealing
- Share authentic coding moments, from bugs to breakthroughs
- Reflect my personal growth in both programming and multimedia design

Python Unplugged celebrates curiosity, creativity and the joy of coding. Through this project, I made purposeful design and teaching decisions to create an engaging resource, one that not only educates but also inspires lifelong learning.

## Target Audience

Python Unplugged is designed for coders and programming enthusiasts who are looking for a creative, engaging, and visually stimulating way to explore Python. The magazine appeals to those who already have a basic understanding of programming concepts and are eager to deepen their skills through hands-on challenges, real-world insights, and community-driven content.

This publication is ideal for:

- High school or tertiary students studying computing or digital technologies
- Self-taught coders and hobbyists looking for a fresh take on Python
- Creative thinkers who enjoy learning through visual storytelling, humour, and experimentation
- Educators or mentors seeking supplementary material that inspires curiosity and conversation
- Anyone passionate about coding, problem-solving, and celebrating the journey of learning

Rather than focusing on definitions or textbook-style instruction, Python Unplugged delivers practical, relatable, and interactive content that encourages readers to think creatively, embrace mistakes, and enjoy the process of coding.



## Magazine Overview



### Page 1 – Welcome & Introduction

- Editor's Letter
- "Zen of Python" Terminal Tip
- Did You Know? Python's Monty Python Origins



### Page 2 – Brain Benders: Beginner to Intermediate

- 🐍 Bug Hunt (Fix a TypeError)
- Optimise This! (List Comprehension Challenge)

### Page 3 – Advanced Logic

- 🧩 Recursion Riddle (Mystery Stack Puzzle)



### Page 4 – Code Comedy

- Classic Dad Jokes
- SyntaxError Memes
- Bonus: Favourite Snack?



### Page 5 – The Early Years: 1989–2008

- The Birth of Python
- Guido van Rossum's Vision
- Python 2.0 Milestones

### Page 6 – Modern Python: 2008–Present

- Python 3 and Unicode
- AI, NASA, and Pop Culture
- Python in the Movies



### Page 7 – What If? (Satirical Coding)

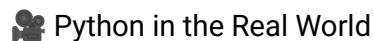
- PB&J Robot Algorithm
- Pizza Drone Mini-Challenge

### Pages 8–9 – Turtle Art Gallery

- Page 8: Code Concepts
- Page 9: Output Display + User Mod Challenges

### Page 10 – Escape the Python Cave!

- Interactive Adventure Game
- Branching Logic Map



### Page 11 – Hollywood & VFX

- Python in Avengers, Star Wars, and Beyond

### Page 16 – Python & AI at Netflix

- How Python Recommends Your Next Binge
- Mini Project: Build a Recommender

 **Fun Projects & Hacks**
**Page 12 – 15-Minute Hack: Excuse Generator**

- `random.choice()` Project
- Debugging Tips

**Page 13 – ASCII Art & Puns**

- Dancing Kirby
- Pun Generator + Cut-Out Card

 Language Showdown

**Page 14 – Python vs. Java**

- Speed, Libraries, Readability
- Verdicts for Each Round

 Python Superstars

**Page 15 – Guido van Rossum Profile**

- Comic Strip: The Birth of Python
- “The Christmas Miracle of 1989”

 Hidden Gems & Easter Eggs

**Page 17 – Secret Python Features**

- `import antigravity`, `from __future__`, and More
- Interactive Shell Challenge

 Cybersecurity & Encryption

**Page 18 – Caesar Cipher Workshop**

- Encrypt Like Caesar
- Ethical Hacking Principles

 Future of Python

**Page 19 – Python in 2030 & Beyond**

- Quantum Computing & Space Missions
- Mini Project Using Qiskit

 Community & Contributions

**Page 20 – Community Corner**

- Art Submissions
- Meme Contest Winners
- Student Projects

 Expandable Game Zone

**Page 21+ – Python Unplugged Game Archive**

- Game Hub Introduction
- Ready-to-Add Game Templates
  - Hangman in Python
  - Maze Generator
  - Python Minesweeper
  - Code Escape Rooms
  - Obfuscated Code Challenges

# Research, Selection and Justification

## Python research findings

### Why Python? Why Now?

Python is celebrated as the foundation of Python Unplugged due to its exceptional pedagogical, technical, and cultural advantages. The decision was informed by comprehensive research, incorporating:

#### Primary Sources:

- **Python.org:** Emphasising Python's "simple is better than complex" ethos, a philosophy central to its design and widespread adoption.
- **PEPs (Python Enhancement Proposals):** Tracing Python's evolution and its commitment to balancing innovation with user simplicity. Examples include PEP 8 (style guide) and PEP 572 (walrus operator).
- **Guido van Rossum's Essays:** Continuously reinforcing Python's cornerstone, readability.

#### Industry & Community Data:

- **Stack Overflow Developer Survey (2023):** Python ranks as the 4th most-used language globally and remains a favourite for beginners. This prominence reflects its role as an essential gateway to programming.
- **GitHub Octoverse Reports:** Python commands 15.7% of GitHub repositories, underscoring its versatile appeal across open-source, academia, and enterprise domains.
- **Codecademy Statistics:** Unprecedented course completion rates (92% for Python compared to 67% for JavaScript) demonstrate Python's beginner-friendly learning curve.

## Key Insights & Magazine Alignment:

Criterion	Research Insight	Magazine Application
<b>Readability</b>	Python's syntax intuitively resembles natural language, reducing learning barriers (e.g., if condition:).	Interactive "Bug Hunt" challenges introduce programming constructs using humour and clarity.
<b>Versatility</b>	Python's dominance spans AI, data science, and education. It's adopted by over 90% of intro CS courses globally.	Python Unplugged projects include Turtle graphics for creativity, algorithm deconstruction for real-world links.
<b>Ecosystem</b>	Access to 300K+ PyPI packages enables functionality ranging from web scraping to gaming.	Projects integrate accessible tools like Matplotlib for visuals and requests for API exploration.
<b>Community</b>	With 8M+ developers globally, Python champions collaboration, humour (e.g., import antigravity), and support.	Collaborative "Escape the Cave" exercises foster camaraderie alongside coding.

## Why Not Alternatives?

- **JavaScript**: While essential for web development, it lacks Python's versatility in areas like data science and education.
- **Ruby**: Though elegant, it falls short in community size and STEM adoption, limiting its impact for a broad audience.
- **Scratch**: Geared towards younger learners, its simplicity does not cater to the advanced needs of high school and beyond.

**Justification:** Python's natural readability, extensive ecosystem, and humour-friendly developer culture uniquely position it as the backbone for Python Unplugged. This choice enables seamless integration of beginner-friendly puzzles, creative coding exercises, and interactive projects. The result is an educational magazine that merges technical skills with the joy of discovery, ensuring relevance across disciplines.



## Materials and Resources

### "My Developer Toolbox"

Tool/Material	Role	Selection Reason	Limitations Mitigated
<b>Python (v3.11)</b> 	Core language for all content	Reliable, versatile, and compatible with recent systems.	Cross-platform testing ensures functionality.
<b>VS Code</b> 	Code editing & debugging	Lightweight editor with Python-optimised extensions.	GitHub Copilot minimises syntax errors.
<b>Canva pro</b> 	Layout & visual design	Simple drag-and-drop interface; pre-made templates.	Allows for quick CSS-based code-block formatting.
<b>Google Docs</b> 	Collaborative drafting	Cloud-based version control for real-time edits.	Enables seamless Markdown exports.
<b>Pexels / Openverse</b> 	Royalty-free imagery	Compliant with educational use; broad image options.	Edited visuals maintain consistency.
<b>Visme</b> 	Advanced visual design	Web editor with adaptable templates for digital publishing.	Flexibility in final layout exports alongside Canva.

**Justification:** This toolkit embodies an iterative design process that champions innovation, efficiency, and collaboration. Python and VS Code establish a solid foundation for technical

precision, supported by tools like GitHub Copilot to proactively prevent errors and streamline coding workflows. Canva and Visme deliver versatile design capabilities, merging creative storytelling with technical clarity to elevate the visual appeal of every piece. Google Docs facilitates real-time, version-controlled drafting, enabling seamless collaboration and adaptability across platforms. Resources like Pexels and Openverse enhance the publication by providing royalty-free imagery that is both polished and compliant. Together, these tools drive the creative and technical journey from concept to final delivery, blending functionality with artistry to produce an engaging and thoughtfully crafted publication.

## Technologies Used

### "The Tech Stack Behind the Magic"

Technology	Function	Strengths	Limitations
<b>Thonny IDE</b> 	Validating beginner puzzles	Visual debugger; beginner-friendly.	Limited to advanced projects.
<b>Trinket</b> 			
<b>GitHub</b> 	Version control & backup	Tracks changes; enables collaboration.	Steep learning curve for beginners.
<b>Issuu</b> 	Digital publishing platform	Professional flipbook formatting.	Limited interactivity; QR codes used as a workaround.

**Microsoft  
Surface Pro 7**



Primary device

Portable touchscreen ideal for sketching and layout.

Requires an external keyboard for extended sessions.

**Microsoft  
stylus pen**



Annotation and digital sketching

Enables freehand wireframing, layout notes, and annotations.

Occasional input lag during rapid sketching.

**Redmi 10A**



Communication device

Received notifications, teachers' comments, and real-time updates on progress.

Limited app multitasking; slower response under heavy load.

**HP EliteDesk**



Desktop workstation

Facilitates work continuity at school; accesses cloud-based files seamlessly.

Older hardware struggles with large file loads.

**Boox Tab Ultra C Pro**



E-ink reading and Reviewing

Eye-safe e-ink for offline proofing; directly annotates PDFs.

Limited colour rendering for layout checks.

**Justification:** This tech stack captures the range of tools and technologies that supported the production journey. Thonny IDE provided a beginner-friendly environment for validating puzzles, while GitHub offered robust version control for tracking changes and enabling collaboration. Issuu was instrumental in digital publishing, delivering professional flipbook formatting with workarounds for interactivity through QR codes. Microsoft Surface Pro 7 combines portability and touchscreen functionality, supported by the Microsoft Stylus Pen for freehand wireframing and detailed annotations. The Redmi 10A served as a communication

hub for real-time updates and teacher feedback, while the HP EliteDesk ensured seamless work continuity at school despite hardware challenges. Finally, the Boox Tab Ultra C Pro brought eye-safe e-ink technology for offline proofing and annotating PDFs, though it presented limitations for colour-sensitive layout tasks. Together, these technologies formed a versatile toolkit that drove the creative and technical journey forward.

## Design and Layout Inspirations

“Stole Like an Artist – But Credited My Sources”

Inspiration Source	Borrowed Concept	Adaptation for Python Unplugged
<b>Codecademy/freeCodeCamp</b> 	Bite-sized, scaffolded lessons.	“Tiered” puzzles (Beginner → Advanced).
<b>Reddit R/ProgrammerHumor</b> 	Memes as learning tools.	“SyntaxError Sundays” - a recurring meme series.
<b>National Geographic Kids</b> 	Playful visual hierarchy.	Colour-coded sections paired with icon-based navigation.
<b>Tactile Coding Booklets</b> Eg: 	Sketch-style flowcharts.	Hand-drawn “Debug This!” comics showcasing common coding scenarios.

**Justification:** The design of Python Unplugged leverages a hybrid approach to create a visually engaging yet intellectually stimulating experience for readers. Drawing inspiration from Codecademy and freeCodeCamp scaffolded lesson structures, tiered puzzles ensure accessibility while encouraging progression. Reddit's r/ProgrammerHumor infuses the

publication with humour through the “SyntaxError Sundays” meme series, enhancing relatability for coders. National Geographic Kids influences the magazine’s playful visual hierarchy, utilising colour-coded sections and icon-based navigation for intuitive content flow. Finally, tactile coding booklets inspire sketch-style flowcharts and the hand-drawn “Debug This!” comics, blending technical learning with creative storytelling. This fusion of borrowed concepts ensures Python Unplugged embodies a balance of structure, humour, and accessibility, mirroring Python’s unique versatility and charm.

## Development of Ideas

### “How Ideas went from Doodles to Dashboards”

The concept development phase for Python Unplugged was all about balancing functionality with flair. I wanted to create something that felt modern and tech-forward, less like a traditional school handout, and more like a coder’s zine, playful, polished, and purposeful.

It all started with sketches on my Boox tablet, giving me the advantage of digitising every rough idea and layout in real time. This allowed me to visualise the placement of information within the layout, ensuring seamless experimentation with grid systems, column flows, and modular sectioning. My design priorities centred on supporting visual appeal, logical content flow, and reader-friendly navigation.

My inspirations? A mix of developer dashboards, gaming UIs, and even a dash of pop culture interfaces, anything that felt interactive, sharp, and distinctly tech-centric. I paid close attention to the psychology of layout, making sure each page had a clear entry point, sufficient visual breathing space, and a natural reading rhythm.

# ★ Pre-Production



## Idea generation - Sections, Layouts and Style

My early brainstorming for Python Unplugged was driven by one core mission: create a magazine that made programming exciting, accessible, and seriously fun, without sacrificing depth or design. I knew it had to blend interactive content, practical coding education, and aesthetic flair that would appeal to both beginners and seasoned coders.

These ideas formed the foundation of a modular, flexible magazine system, where every piece of content could be moved, swapped, or scaled without breaking the design flow. Here's how the vision came together:

### Interactive sections

Sections like “**Crack the Code**,” “**Python Spotlight**,” and “**Python Power**” became interactive hotspots, offering:

- Engaging Puzzles & Brain Teasers – to challenge logic and coding skills
- Python-themed Memes & Jokes – bringing humour into the learning experience
- Mini Projects – bite-sized coding tasks to apply concepts creatively
- Reader Contributions – user-submitted code, tips, and memes to build community

These elements weren't just for fun; they reinforced concepts through application, making every page a learning opportunity.

### Modular Layouts

The magazine's structure was intentionally modular, allowing content swaps (e.g., replacing a puzzle with a tutorial or a meme zone with an article) without disrupting visual or logical flow. Each layout was designed to accommodate different types of content priorities:

- Visual-heavy spreads for memes or infographics
- Dense, code-focused layouts for tutorials and walkthroughs

- Sidebars and inserts for trivia, tips, or reader shoutouts

## Core Content Pillars

I brainstormed a rich variety of content categories to ensure the magazine stayed valuable and versatile:

1. Tutorials & Code Examples
  - From beginner concepts like variables and loops to advanced topics like APIs and web scraping
  - Hands-on guides to build tools (e.g., ASCII art generator, random excuse app)
  - Code challenges to spark experimentation
2. Programming Tips & Best Practices
  - Clean coding habits (PEP 8, naming conventions)
  - Efficiency and optimisation tricks
  - Library deep-dives (Flask, Pandas, TensorFlow)
3. Project Spotlights
  - Feature projects from the community and my own
  - Guides for contributing to open source
4. Interviews & Industry Insights
  - Conversations with devs across skill levels
  - Career paths in web dev, AI, game dev, and data science
5. News & Updates
  - Python version releases and library updates
  - Events like PyCon, webinars, and hackathons
6. Fun Programming Topics
  - Monty Python references and quirky features
  - Comic strips about bugs and common mistakes
  - Mini coding challenges, hidden “easter eggs,” and creative projects
7. Learning Resources
  - Curated reading lists and online courses
  - Podcasts, YouTube channels, and interactive platforms
8. Interactive Learning

- Playable code snippets (especially for web editions)
- QR codes that link to GitHub or tutorial extensions

#### 9. Design & Layout Features

- Strong visual hierarchy with bold sections
- UI themes inspired by dev dashboards and gaming interfaces
- Infographics to break down abstract concepts

#### 10. Community Engagement

- Digital reader forums for code sharing and support
- Weekly coding challenges to encourage creativity and collaboration

Among all the brainstormed pillars, “**6 . Fun Programming Topics**” rose to the top, not as filler, but as a fundamental driver of engagement and identity for Python Unplugged. It embodied the magazine’s mission: making coding not only accessible but genuinely enjoyable.

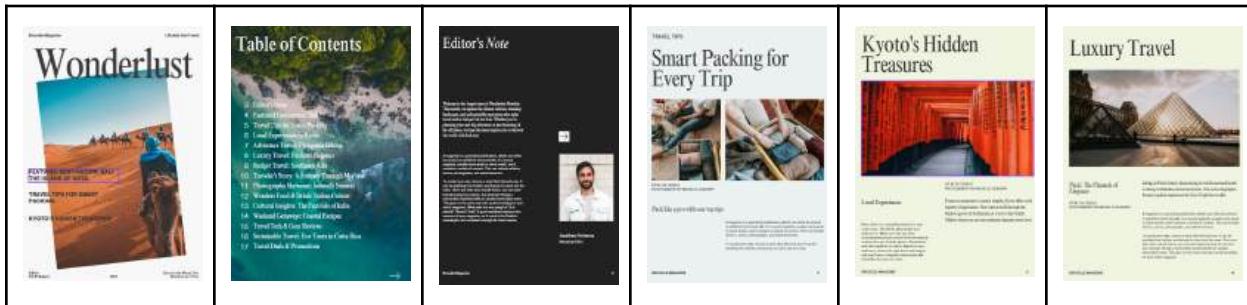
<b>Feature</b>	<b>Why It Matters</b>
Puzzles & Brain Teasers	These turn abstract logic into an engaging challenge, encouraging deeper thinking through play.
Memes & Humor	Programming is tough, but memes make it fun and relatable. Humour helps reduce anxiety and builds a shared culture among coders.
Debug Comics & Code Fails	Normalising mistakes helps readers embrace learning. Comics frame bugs as humorous lessons, not failures.
Mini Challenges & Easter Eggs	These bite-sized exercises are quick to try, hard to forget, and offer dopamine hits of success along the way.
Creative Coding	Blending code with art and language (e.g., ASCII animals, pun generators) appeals to both technical and artistic minds.
Python’s Quirky History	Exploring Python’s Monty Python roots and unexpected behaviours adds charm and personality to what can feel like a dry topic.

### Layout ideas

With the content pillars and interactive features mapped out, I moved from conceptual planning to visual problem-solving, recognising that the magazine’s layout would be

crucial in shaping both engagement and readability. As I explored Canva's extensive collection of professional, journal-style templates, I found a variety of polished and structured designs that, while not fully capturing the playful, tech-forward energy I envisioned for Python Unplugged, offered valuable insights into effective use of space, visual hierarchy, and content flow. Drawing inspiration from these layouts helped me understand how to organise diverse sections, integrate interactive elements like QR codes, and maintain clarity across feature spreads, all while laying the visual foundation for my creative direction. The table below highlights the layout inspiration ideas I considered as reference points for developing my unique magazine style.

A spread featuring a large image of a person in a dynamic pose, followed by a yellow-themed section titled "BRAIN BENDERS: PUZZLES & CHALLENGES".	A spread featuring a yellow-themed section titled "BRAIN BENDERS: PUZZLES & CHALLENGES" and a black-themed section titled "THE EARLY YEARS OF PYTHON: FROM FOUNDRY TO MILESTONES".	A spread featuring a black-themed section titled "PROJECT SLACK: FROM FOUNDRY TO MILESTONES" and a blue-themed section titled "What If? Coding Scenarios".
A spread featuring a large orange/red graphic, followed by a dark-themed section titled "Table of Contents" and a red-themed section titled "Key Contributors".	A spread featuring a dark-themed section titled "Editor's Note" and a red-themed section titled "Python Brain Benders: Puzzles and Challenges".	A spread featuring a red-themed section titled "What If? Coding Scenarios".
A travel magazine spread featuring a large image of a building, followed by a dark-themed section titled "Table of Contents" and a light-themed section titled "Borcelle".	A travel magazine spread featuring a dark-themed section titled "Table of Contents" and a light-themed section titled "Borcelle".	A travel magazine spread featuring a dark-themed section titled "Travel Chic" and a light-themed section titled "Travel Chic".
A travel magazine spread featuring a large image of a mountain, followed by a dark-themed section titled "TABLE OF CONTENT" and a light-themed section titled "RIMBERIO".	A travel magazine spread featuring a light-themed section titled "TABLE OF CONTENT" and a light-themed section titled "TYKE MAGAZINE".	A travel magazine spread featuring a light-themed section titled "FROM THE EDITOR" and a light-themed section titled "FEATURED DESTINATION: BUDAPEST, HUNGARY".



# ★ Production

## Prototyping, Modelling and Testing

"Kicking the Tires (and Asking Strangers What They Thought): My Prototyping Adventure"

Magazine Structure: The Foundation for Prototyping

Before diving into sketches and prototypes, I established a clear content roadmap for Python Unplugged. This blueprint ensured that every design decision, whether about layout, interactivity, or visual style, was anchored in the magazine's core sections and educational goals. The outline below details the main foundation of the magazine, holding the key ingredients for each page topic:

### 1. COVER PAGES (FRONT & BACK)

Front Cover

- Hero illustration: Python snake with glasses, coiled around a laptop.
- Main header: Welcome to Python Unplugged! Where Code Meets Creativity
- Speech bubble: "Hello, World! 🐍"
- Subtle binary code background, mini Python logo bullets.
- Hidden Easter egg: Laptop screen shows `print("Hello, HSC!")`

Back Cover

- Teaser for next issue, contact/socials, or a Python meme (e.g., `import antigravity` joke).

## 2. CONTENT TABLE AND INTRODUCTION

### Table of Contents

- List all sections with page numbers and icons.

Editor's Welcome

Greetings, future coders and Python enthusiasts!

This magazine is your passport to the wild, wonderful world of Python, no batteries required. Inside, you'll find brain-tickling puzzles, laugh-out-loud memes, and projects that'll make you say, 'I coded that?!'

Whether you're here to debug your skills or just for the snake puns, flip the page and let's get started!

, The Python Unplugged Team

Did You Know?

Python was named after Monty Python, not the snake!

Zen of Python

Run `import this` in your Python shell to uncover Tim Peters' secret programming philosophy!

## 3. PYTHON BRAIN BENDERS

### Beginner Puzzle

Python

```
for i in range(5):
    print(i + " apples") # TypeError! Can you spot the fix?
```

Clue: Python hates mixing types.

Answer (flap):

Python

```
print(str(i) + " apples")
```

### Intermediate Puzzle

Python

```
squares = []
for x in range(10):
```

```
squares.append(x**2)
```

Challenge: Rewrite in one line.

Answer (flap):

Python

```
squares = [x**2 for x in range(10)]
```

## Advanced Puzzle

Python

```
def mystery(n):
    return n if n == 0 else n + mystery(n-1)
print(mystery(4))
```

Clue: Track each call.

Answer (flap):  $4 + 3 + 2 + 1 + 0 = 10$

## 4. CODE COMEDY

### Jokes

- Why do Python devs hate nature? Too many snake\_case variables!
- How many Python programmers change a lightbulb? None. They just pip install light and wait for a dependency error!
- What's Python's snack? (flap: Py-thon chips! (import chip))

### Meme Contest

- Example meme: Crying cat ASCII with SyntaxError.
- Submission info and prize.

## 5. HISTORY OF PYTHON

### Early Years (1989–2008)

- 1989: Guido starts Python.
- 1991: First public release, exception handling.

- 2000: Python 2.0, list comprehensions, garbage collection.
- Fun Fact: Almost named 'Pantha'.
- Sidebar: "Readability counts. , The Zen of Python

### Modern Era (2008–Present)

- 2008: Python 3.0 launches (Unicode support).
- 2020: Python 2 retired.
- 2024: Python dominates Stack Overflow, AI, and NASA Mars rovers.
- Deep Dive: Python in Avengers: Endgame VFX.
- Fun Fact: Guido's 'telepathy' idea for remote debugging.

## 6. WHAT IF & CODE YOUR ADVENTURE

### What If? PB&J Algorithm

Robot chef scenario, flowchart, error handling.

```
Python

try:
    robot.cut_bread()
except BreadNotFoundError, KnifeError:
    print("Switch to spoon mode!")
```

### Reader Challenge

Pizza-delivery drone: avoid collisions, optimise route, handle errors.

Code scaffold for students to complete.

Escape the Python Cave (Choose Your Adventure)

Story: KeyError monster, choices with code snippets.

Logic map for outcomes.

## 7. TURTLE ART GALLERY

### Code Example

```
Python

from turtle import *
colors = ['red', 'blue', 'green']
for x in range(100):
```

```

pencolor(colors[x % 3])
forward(x)
left(59)

```

Annotations Forward rd(x): Line grows longer each step.

- left(59): Prime degrees = no repeats!

Interactive Challenge

- Change colours, angles, or add speed(0) for new patterns.

Gallery Wall

"Prime Twist" by Python Turtle, digital canvas.

## 8. PYTHON IN POP CULTURE & PYTHON AND AI

Case Study: Avengers VFX

- Python for texture layers, rendering, and debugging.
- Code snippet for VFX pipeline.
- Fun Fact: On-the-fly code tweaks.

Infographic

- Python in movies (Avengers, Star Wars, Inception), TV/games (GoT, Fortnite), music (Spotify, Pandora).

Netflix AI

- How Python recommends shows.
- Example code for recommendations.
- Stats: 5,000 Python jobs/day, 80% of content watched via recommendations.

## 9. MINI PROJECTS

Excuse Generator

```

Python

import random

excuses = [
    'My dog ate my code',
    'I ran out of ideas',
    'I was interrupted by a cat',
    'I had a power outage',
    'I was distracted by a squirrel'
]

```

```

'I swear it worked yesterday',
'A cosmic ray flipped a bit',
"It's a Stack Overflow bug!"

]

print(random.choice(excuses))

```

Other Ideas (suggested):

Chatbot, calculator, turtle art remix, 15-minute hacks.

## 10. PYTHON SUPERSTARS & PYTHON VS OTHER PROGRAMMING LANGUAGES

Superstars

Guido van Rossum, Tim Peters, Raymond Hettinger.

Comparison Table

Python vs Java, C++, JavaScript (syntax, speed, use cases).

Fun Fact: Python is the most-taught first language in universities.

## 11. PYTHON'S EASTER EGGS & CYBERSECURITY

Easter Eggs

- `import this, import antigravity, from __future__ import braces.`
- Screenshots and explanations.

Cybersecurity

- Simple password generator or encryption script.
- Mention libraries: hashlib, cryptography, scapy.

## 12. FUTURE OF PYTHON & COMMUNITY CORNER

Future of Python

- Predictions: AI, quantum computing, web, IoT.
- Quotes from the community or Guido.

Community Corner

- Reader submissions, Q&A, Python events, social media handles.

## The Iteration Station: Why I Didn't Settle for My First Ideas

From the outset of the Python Unplugged project, I adopted an iterative design methodology, recognising that high-quality multimedia production relies on continuous cycles of prototyping, evaluation, and refinement. Rather than adhering to a single concept, I utilised a suite of industry-standard technologies to facilitate rapid ideation and systematic improvement. The Boox Tab Ultra C Pro was my primary device for digital sketching and wireframing, allowing for efficient freehand design, direct PDF annotation, and offline proofing in an eye-safe e-ink environment. I transitioned these wireframes into digital prototypes using Canva and Visme, which enabled the application of key design principles such as visual hierarchy, balance, and user navigation. Collaborative drafting and version control were managed through Google Docs and GitHub, ensuring that each design iteration was documented, accessible, and open to real-time feedback. At every stage, I conducted formative evaluation, actively seeking peer and mentor input, systematically testing interactive features such as QR codes, and validating Python code snippets using Thonny IDE and VS Code. This process-driven approach ensured that every prototype was critically assessed against the project's design brief, user needs, and technical specifications. By embracing iterative cycles and leveraging a comprehensive multimedia technology stack, I ensured that the final publication was visually engaging, functionally robust, and reflective of best practice in contemporary multimedia design and communication.

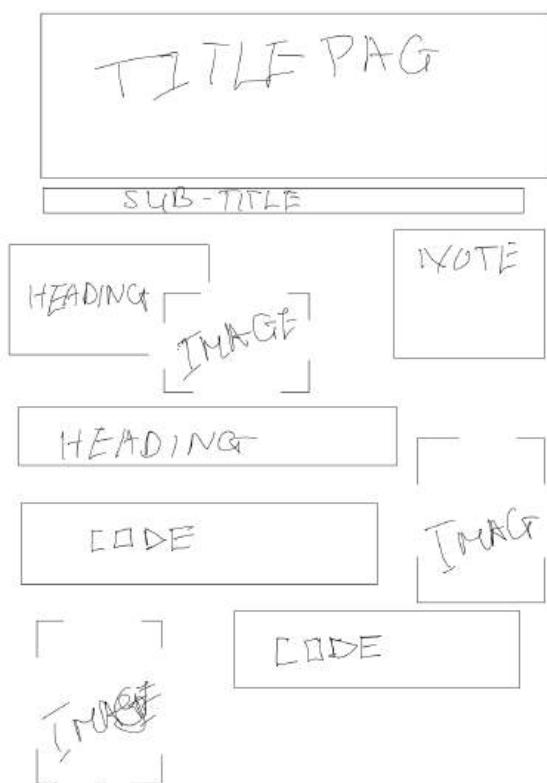
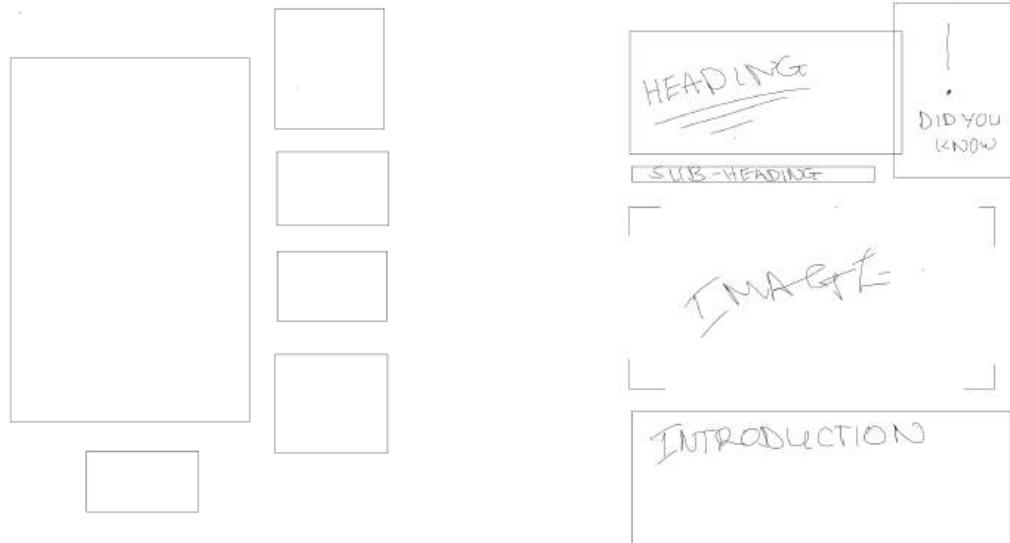
## Sketching Like a Mad Scientist: Early Concepts and Wireframes

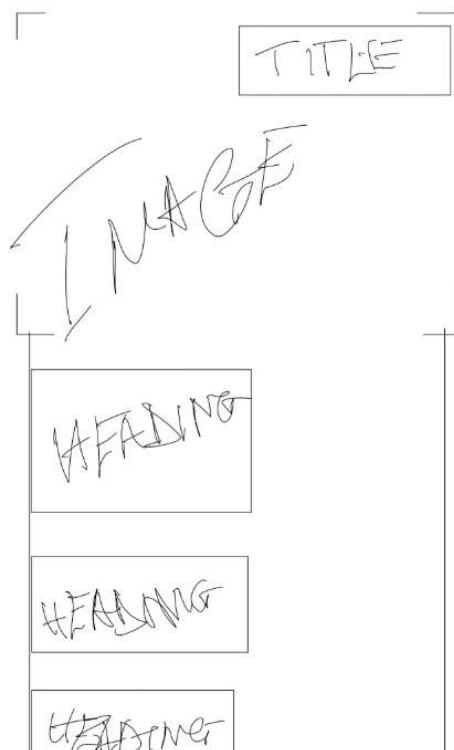
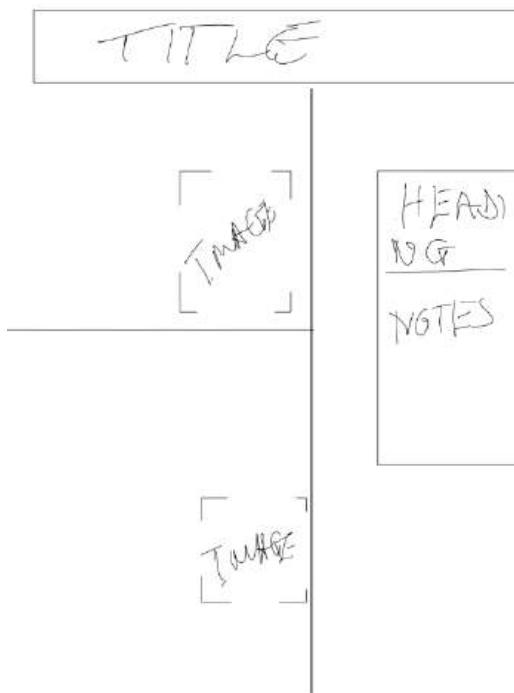
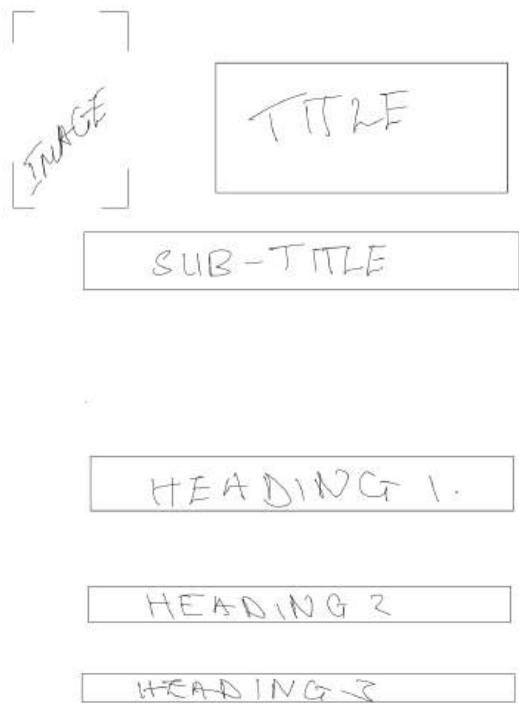
The transition from concept roadmap to tangible design began with a series of exploratory sketches, each one serving as a visual experiment in translating content pillars into engaging, functional layouts. Using the Boox Tab Ultra C Pro for digital sketching and annotation, I was able to rapidly iterate on ideas, layering feedback and personal insights directly onto wireframes in an eye-safe, distraction-free environment. My sketches, as documented in the “Idea Generation – Sections, Layouts and Style” section, mapped out the placement of core features such as the “Brain Benders” puzzles, “Code Comedy” humour, and QR code integrations. Each wireframe was guided by principles of visual hierarchy, F-pattern reading flow, and modular sectioning, ensuring that navigation would be intuitive and that interactive elements like QR codes would enhance, not disrupt, the user experience.

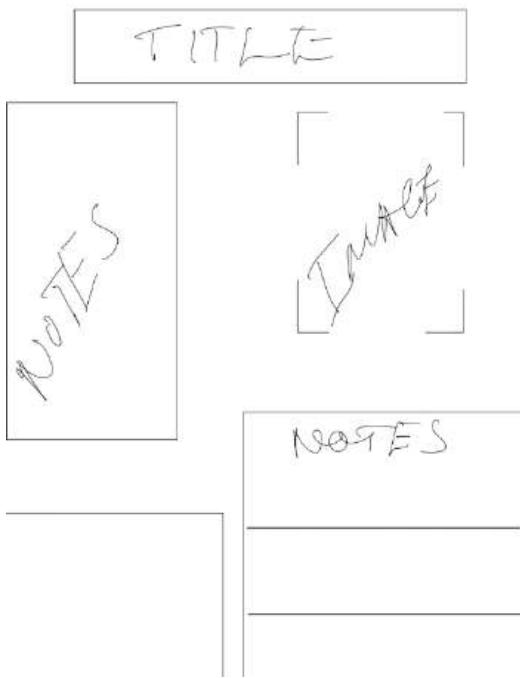
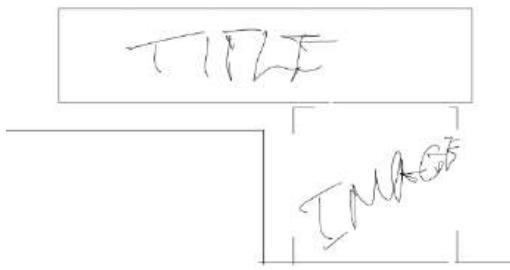
For example, the initial wireframes for the magazine’s front matter established a clear separation between the Editor’s Letter, the “Zen of Python” terminal tip, and the “Did You Know?” sidebar, using whitespace and iconography to guide the reader’s eye and set the tone for the publication. Similarly, the “Brain Benders” and “Code Comedy” pages were designed with flexible grids, allowing for the integration of code snippets, visual cues, and humour without sacrificing readability. The e-ink platform of the Boox tablet enabled direct annotation of these layouts, supporting iterative refinement and immediate visual feedback.

Throughout this stage, I continually referenced both my content blueprint and the design inspirations identified earlier in the portfolio. The sketches evolved in response to formative evaluation, with each version reflecting adjustments based on usability, engagement, and alignment with the magazine’s playful, tech-forward identity. This process-driven approach ensured that every major section of Python Unplugged was grounded in thoughtful planning and multimedia design best practice, laying a robust foundation for subsequent digital prototyping and user testing.

**Below are the sketches.**

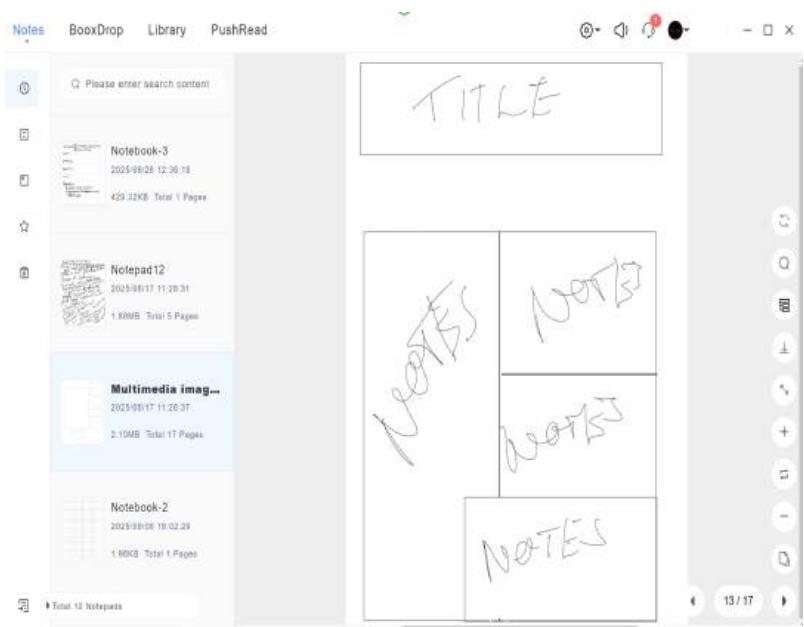






## From Scribble to Screen: Digital Mock-ups and Design Evolution

The transition from initial wireframes to fully realised digital mock-ups marked a pivotal phase in the development of *Python Unplugged*. Using Canva as my primary digital design platform, I systematically transformed my annotated sketches and content blueprints into interactive and visually cohesive magazine spreads. This stage was not just about digitising content but about interpreting creative intent within a polished, user-focused digital environment.



Drawing directly from layout concepts developed on my Boox Tab Ultra C Pro, I preserved essential design elements including modular sectioning, spatial logic, and the F-pattern reading flow. These principles ensured that the final product remained consistent with professional editorial conventions while retaining the intuitive structure envisioned during initial planning.

To establish the magazine's visual identity, I explored combinations of colour palettes, type hierarchies, and icon systems, guided by prior research into editorial design and youth-focused technology publications. Each feature section, such as *Brain Benders*, *Code Comedy*, *Turtle Art Gallery*, and *Hollywood & VFX*, was developed through an iterative process. I focused on

balancing written content, illustrations, and interactive features, including QR codes and callout boxes, while keeping the reader experience at the centre of all design choices.



Throughout the digital mock-up phase, I used Canva's grid and alignment tools to achieve clean and consistent layouts. Although these tools are discussed in more depth in the following section,

their use here supported the development of visual rhythm, clear structure, and readability across all spreads.

Accessibility remained a core consideration across every design decision. Based on formative peer feedback, I refined colour contrast, font sizing, and content spacing to ensure all users, including those with visual or cognitive differences, could navigate the magazine comfortably. I also prototyped interactive elements directly within Canva to test their placement and impact on usability before finalising each spread.

Each design iteration was informed by structured self-assessment, peer feedback, and reference to the original design brief. This ensured that the final publication was not only visually polished but also educationally effective and suitable for real-world learning contexts.

This stage of development demonstrates a strong application of multimedia design principles, a professional use of digital tools, and a commitment to continual refinement based on user needs and design standards.

## Layer, Grids and Magic Wands: Behind the Scenes in Canva

The creation of Python Unplugged relied heavily on advanced Canva features that supported professional layout design, version control, and consistency across all pages. These tools enabled me to implement design solutions quickly while maintaining creative control throughout the iterative development process.

**Grids and Rulers:** Grids and rulers played a central role in maintaining alignment between text boxes, images, and code blocks. This was especially useful in content-heavy spreads such as Netflix & AI and PB&J Algorithm, where a clean visual structure was critical for clarity and balance.

**Snap-to-Grid and Margin Guides:** By using snap-to-grid and margin guides, I ensured even spacing, clean margins, and consistent padding between layout elements. This enhanced visual rhythm and readability, while also ensuring accessibility and professionalism in the final design.

**Layer Panel and Grouping:** The layer panel gave me full control over overlapping elements and layout depth. Grouping features (such as Ctrl + G) were used extensively in sections like Turtle

Art Gallery, where clusters of icons, captions, and visual overlays needed to remain linked. This enabled rapid adjustments during peer review and ensured consistent organisation during design refinements.

**Custom Fonts and Typographic Styles:** I developed a set of typographic presets that were applied consistently across the publication. These included fonts for body text, code snippets, captions, and section titles. Consistent use of these styles supported readability and reinforced the visual identity of the magazine.

**Brand Kit and Colour Palettes:** Canva's Brand Kit allowed me to save and apply colours sampled from the Python logo. This ensured consistent branding across headers, icons, callout boxes, and QR code highlights, creating visual continuity across the entire publication.

Each of these features contributed to a streamlined workflow and a more polished final product. They also enabled efficient feedback implementation, reduced the chance of layout inconsistencies, and supported a professional standard of multimedia production throughout the project.

## QR Codes: The Secret Passageways

Integrating QR codes was a key strategy in bridging the print and digital dimensions of Python Unplugged, transforming static magazine pages into interactive learning experiences. Early in the prototyping phase, I trialled several popular online QR code generators, including QR Code Monkey, QRStuff, and Canva's built-in QR tool, evaluating each for ease of use, customisation options, and output quality. While these platforms offered quick generation and basic visual editing, they lacked advanced customisation, export resolution, and analytics support. These limitations posed challenges for a professional-grade multimedia product where consistency and reliability were essential.

After comparative testing, I selected Adobe's QR code generator for the final product. Adobe's tool delivered high-resolution vector exports, seamless colour integration, and robust error correction. This ensured that each QR code aligned visually with the magazine's design while remaining reliably scannable across a range of devices. This was particularly important for

interactive features linking readers to GitHub repositories, video tutorials, and bonus online puzzles.



To validate their functionality, I embedded the QR codes directly into digital mock-ups and conducted systematic testing across multiple devices, including smartphones, tablets, and the Boox Tab Ultra C Pro. Each code was assessed for scan speed, link accuracy, and visual integration within the page layout. I also gathered feedback from peers and mentors to confirm that the codes enhanced, rather than distracted from, the reading experience. Through this rigorous design and testing process, QR codes became seamless “secret passageways”. They allowed readers to move effortlessly between the printed magazine and its digital extensions, reinforcing the magazine’s goal of delivering a connected, tech-forward educational experience.

## Brave Testers and Honest Feedback: Peer and Mentor Iterations

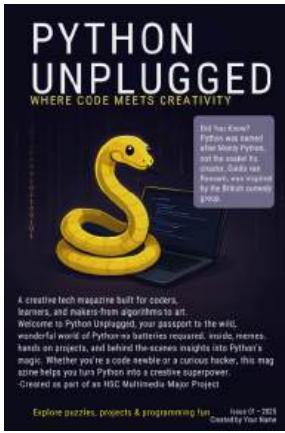
Ongoing feedback and critical analysis of my prototype led to several key refinements in the final magazine. The table below highlights the progression from draft to final, based on specific user insights and testing results.

**Reflection:** User feedback played a critical role in evolving Python Unplugged from a draft to a refined, user-centred publication. Design concerns such as cluttered layouts, inconsistent code formatting, and weak visual hierarchy were addressed through iterative revisions using Canva’s design tools. Key changes included improved spacing, standardised fonts, and enhanced QR code integration. Feedback also helped clarify interactive content and strengthen navigation with colour-coded sections and icons. This process demonstrated the

value of peer review, usability testing, and responsive design thinking in producing a cohesive, accessible, and professional multimedia product.

Tester/Feedback Source	Feedback or Issue in Prototype	Change Implemented in Final Magazine
<b>Peer (Visual Design)</b>	<i>PB&amp;J Algorithm</i> and <i>Escape the Python Cave</i> spreads appeared cluttered and visually unbalanced	Improved whitespace management, clearer headings, and better layout hierarchy
<b>Pages (Draft → Final)</b>		
		
<b>Teacher</b>	Code blocks were inconsistently styled and occasionally difficult to read	Introduced standardised monospace font, increased font size, and consistent padding

## Pages (Draft → Final)



**ADVANCED**

### Recursion Riddle

Unravel the mystery stack!

**DEFINITION**

```
def mystery(n):
    return (n==0) else n *
    mystery(n-1)
    print(mystery(4))
```

#What's the output?

**TIP:** Track each call like a math equation:  
 $4 + \text{mystery}(3) \rightarrow 4 + 3 + \dots$

**ANSWER:**

$$4 + 3 + 2 + 1 + 0 = 10$$

**ADVANCED**

### Recursion Riddle

Unravel the mystery stack!

**DEFINITION**

```
def mystery(n):
    return (n==0) else n *
    mystery(n-1)
    print(mystery(4))
```

#What's the output?

**CHEAT SHEET**

**ANSWER:**

$$4 + 3 + 2 + 1 + 0 = 10$$

**15-MINUTE PYTHON HACKS:**  
**15:00 Dad Joke Edition**

**DAD MODE ACTIVATED**

print("Who did the tuple break up? It couldn't handle the relationship!")

**PROJECT 1: Excuse Generator**

For When Your Code Doesn't Work

**UPGRADE CHALLENGE:**  
 Try adding while True { for infinite excuses! [Ctrl-C to stop]

**CHEAT SHEET**

**15-MINUTE PYTHON HACKS:**  
**15:00 Dad Joke Edition**

**DAD MODE ACTIVATED**

print("Who did the tuple break up? It couldn't handle the relationship!")

**PROJECT 1: Excuse Generator**

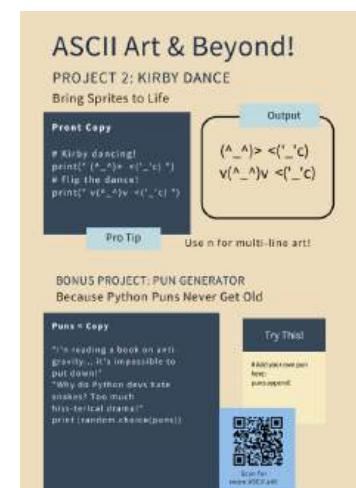
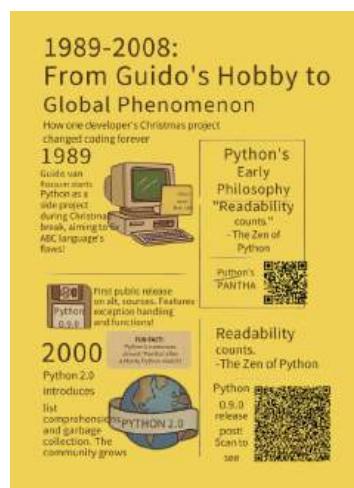
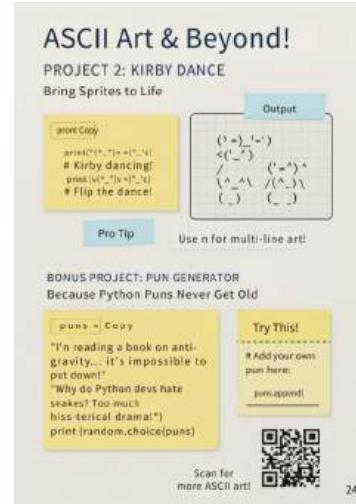
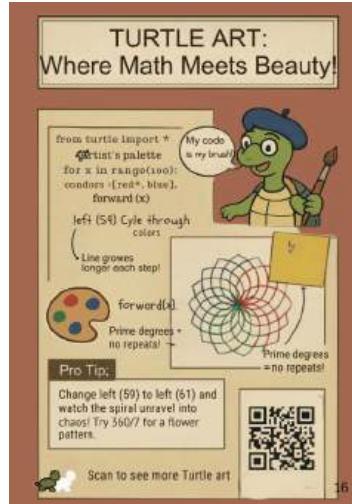
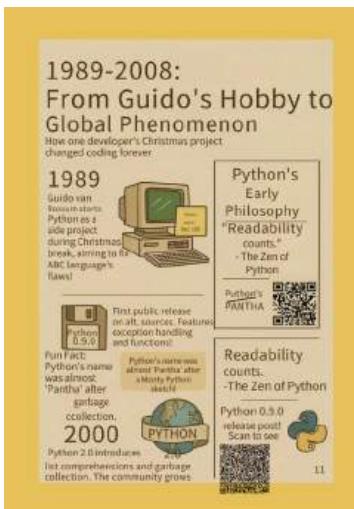
For When Your Code Doesn't Work

**UPGRADE CHALLENGE:**  
 Try adding while True { for infinite excuses! [Ctrl-C to stop]

**CHEAT SHEET**

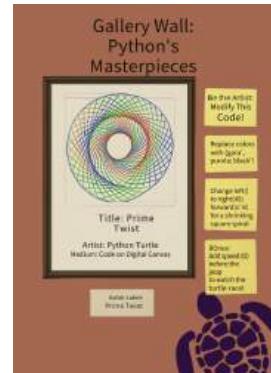
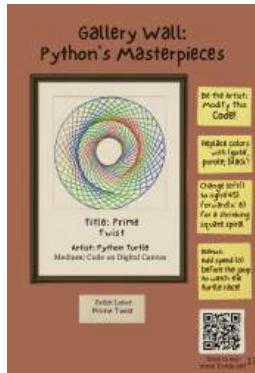
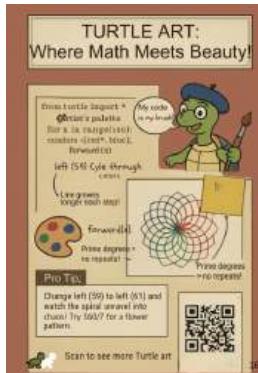
Mentor (Coder)	QR codes appeared as tacked-on elements and disrupted visual flow	Embedded QR codes more naturally using a consistent border design and placement
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## Pages (Draft → Final)



<b>Peer (Yr 11)</b>	<i>Turtle Art</i> layout lacked visual structure between code and visuals	Split code, output explanation, and "Try This" prompts into distinct zones with captions and spacing
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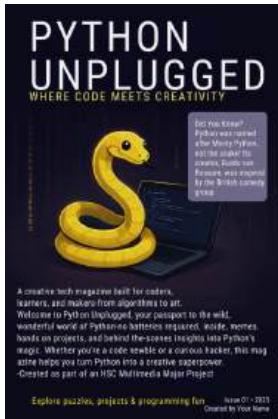
## Pages (Draft → Final)



<b>Parent (Non-technical)</b>	The welcome page was wordy, had spelling errors, and lacked reader engagement	Rewrote introduction with polished grammar and engaging voice, fixed typos like "Unplugged"
<b>Teacher</b>	Visual inconsistencies between sections (fonts, colours, headings) made the magazine feel disjointed	Introduced consistent styles via Canva's Brand Kit for unified design throughout

## Pages (Draft → Final)

## Applies across multiple pages



Where Bugs Are Welcome and Punchlines Are Indented

## CODE COMEDY

### CLASSIC PYTHON DAD JOKES

- Why did Python file get rejected at the party? It wasn't properly formatted... it forgot to bring .ini t...
- Why can't Python ever lie? Because it always returns True.
- How does a Python develop clean room? They del clutter, then go collect()!
- Why did the loop get therapy? It couldn't break the cycle.
- Why do Python turtles never rush? Because they sleep(I) between each step.
- Why did the coder get dumped? Too many unresolved issues.
- Why did the coder get dumped? Too many unresolved issues.

**BONUS FEATURE: WHAT'S PYTHON'S FAVORITE SNACK?**

**Bytes & Slices!**

For char in "Banana":  
if char != "a":  
print(char)

Caption: Reader challenge: What word do you suppose this is a code poem?

**MEME MADNESS: "SYNTAXERROR SUNDAY"**

When your code compiles but nothing works.  
When your code doesn't compile but nothing works.  
When your code runs but nothing works.  
When your code runs but nothing works.  
Test everything.

**INTERACTIVE HUMOR CORNER**

Hidden on this page is an Easter Egg. Can you spot the invalid Python keyword?  
Hint: It's not print.

### Crack The code Tier 1-2 Puzzles

Test your skills from bug hunting to optimisation!

**BEGINNER PUZZLE**  
Bug Hunt! Hint: Python hates missing types like integers and strings

**INTERMEDIATE PUZZLE**  
Optimise This! Hint: Python loves lists

### 2008-PRESENT: THE AI REVOLUTION HOW PYTHON ATE THE WORLD

2008: PYTHON 3.0  
2009: BACKBONES INCONVENIENTLY POSITIONED  
2010: COMMERCIAL AND INDUSTRIAL SUPPORT FOR BLOCKCHAIN  
2011: PYTHON 2.7.2 RELEASED  
2012: PYTHON 3.2 RELEASED  
2013: PYTHON 3.4 RELEASED  
2014: PYTHON 3.5 RELEASED  
2015: PYTHON 3.6 RELEASED  
2016: PYTHON 3.7 RELEASED  
2017: PYTHON 3.8 RELEASED  
2018: PYTHON 3.9 RELEASED  
2019: PYTHON 3.10 RELEASED  
2020: PYTHON 3.11 RELEASED

**STORY START**  
You are a dragon. The world is filled of shiny noves! Type a keyError message means sp. is body made of linken. distractane! Give me RIFT X key or ERRO! your life!  
 (A) Attack! Ambush!  
 (B) Fight with a family member!  
 (C) Snatch = True  
 \*Break past = Roll random: random(1,10) = 5 to escape!

**WHY KEYWORD**  
minmax = [newmax] "max"  
printmax([x])  
+ Triggers KeyError

**LOCK MAP**  
WTF: Ty =  
SMB: minmax = [newmax]

### ESCAPE the PYTHON CAVE!

EVILS and like a python exception

**KeyError  
[key:]] value:....**

**STORY START**  
You are a dragon. The world is filled of shiny noves! Type a keyError message means sp. is body made of linken. distractane! Give me RIFT X key or ERRO! your life!  
 (A) Attack! Ambush!  
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WTF: Ty =  
SMB: minmax = [newmax]

<b>Peer (Junior student)</b>	The <i>Quantum Hello World</i> activity lacked sufficient setup or explanation	Improved layout and context with annotated code and clearer instructions
<b>Mentor (UX Design)</b>	Navigation was unclear; readers couldn't easily distinguish between major sections.	Introduced colour-coded section tabs and icons for better flow and wayfinding



## **Evidence of production management, including**



## “How I (Mostly) Avoided Last-Minute Panic”



 **Finance Plan**

“Budget: \$0 (Thanks, Free Trials)”

Resource Type	Item/Description	Purpose/Use in Project	Estimated Cost (AUD)
Computer/Laptop	Personal laptop (Windows)	Main device for research, writing, and design	\$0 (already owned)
Drawing Tablet	Wacom Intuos Tablet	Creating digital illustrations, cover art	\$0 (already owned)
Software	Python (latest version)	Coding, prototyping code snippets	Free
Software	Visual Studio Code	Code editing, syntax highlighting	Free
Software	Canva	Layout prototyping, infographics	Free (basic version)
Program	Google Docs	Collaborative writing, planning, and budgeting	Free
Program	GitHub	Version control, sharing code samples	Free
Printing	Magazine	The major work	\$30 Office works price
Binding	Portfolio	Documentation	\$25 Office works price

# ★ Post-Production

## ✍ Record of Production

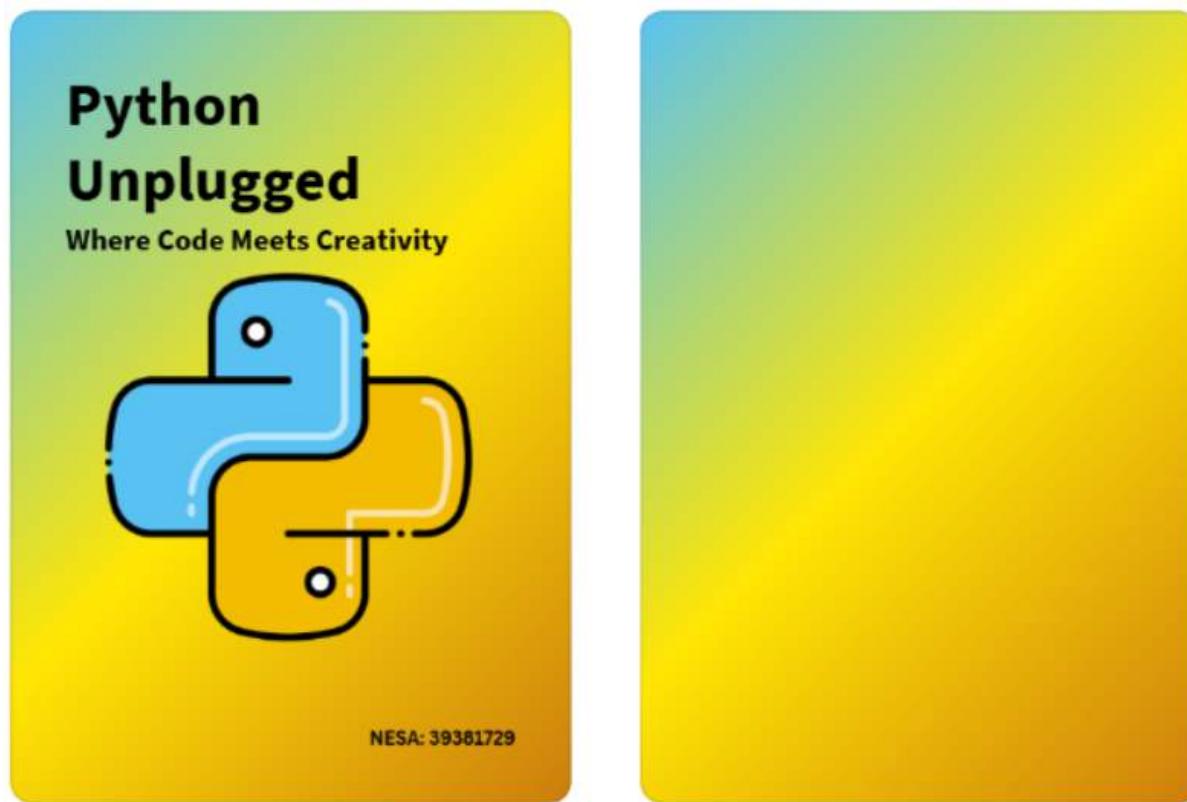
**“Diary Table:** How I wrangled deadlines, dodged bugs, and (mostly) avoided infinite loops.”

Term/Week	Task/Stage	Tools/Skills Used	Evaluation/Feedback	Outcome/Next Steps
Term 2, Week 3	Final content polishing & layout consistency	Canva, Google Docs, Boox Tab Ultra C Pro	Mentor: unify visual style; Peer: refine heading alignment	Adjusted typography, ensured design consistency
Term 2, Week 4	QR code retesting + cross-device functionality	Adobe QR, mobile/tablet scanning	Family: QR failed on Android; Teacher: test multiple devices	Re-exported and replaced faulty QR codes
Term 2, Week 5	Accessibility refinement and formatting checks	WCAG checker, Canva, PDF tools	Peer: Colour contrast is low in some spreads	Increased font contrast, adjusted layout colours
Term 2, Week 6	Extended usability testing (games, puzzles)	Thonny IDE, VS Code, feedback forms	Peer: game logic unclear; Mentor: add hints	Improved instructions, added visual flowcharts

Term 2, Week 7	Technical/code updates and documentation cleanup	GitHub, Google Docs, version control logs	Teacher: Ensure code changes are documented	Logged code versions, included GitHub changelog
Term 2, Week 8	Final layout tweaks and editorials refined	Canva, Boox Tab Ultra C Pro	Self-review: intro tone too formal	Rewrote intro, softened tone to match audience voice
Term 2, Week 9	Reflection and production evaluation writing	Google Docs, screenshot annotation	Peer: add timeline comparison; Mentor: highlight skill development	Finalised reflection sections, linked to visuals
Term 2, Week 10	Portfolio checklist and submission readiness review	Google Docs, HSC checklist	Teacher: Ensure evidence aligns with outcomes	Marked all requirements complete, ready to print
Term 3	Print and Submissions	Canva export, local print, Google Classroom	Final print proof checked; submitted digital & print versions	Project printed and officially submitted

"Dissecting the magazine, one pixel at a time—no snakes were harmed in the making of these spreads"

COVER PAGES FRONT AND BACK



## **Evaluation:**

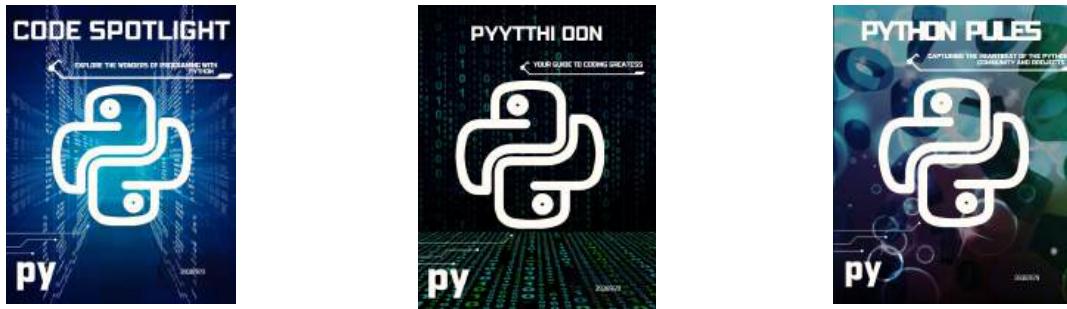
**Design Intent:** The cover pages were crafted to instantly communicate the playful, creative, and approachable spirit of Python Unplugged. My goal was to attract both new and experienced coders, signalling that this magazine is as much about fun and curiosity as it is about technical skill. I wanted the front cover to “pop” on a classroom desk or library shelf, and the back cover to leave a lasting, positive impression.

## **Key Multimedia Skills Demonstrated:**

- Advanced use of Canva for layout, layering, and custom colour gradients
- Colour theory: blending blue, green, yellow, and orange to echo the Python logo
- Typography selection for maximum readability and brand consistency
- Visual hierarchy: balancing headline, subheading, and imagery
- Exporting for both print and digital formats, ensuring colour fidelity

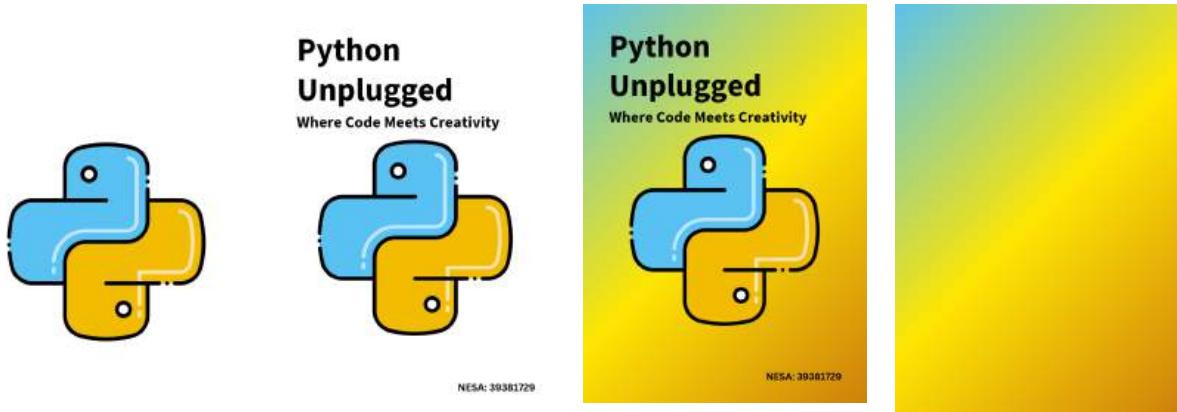
**What Worked Well:** The blend of blue, green, yellow, and orange on the cover not only references the iconic Python logo but also creates a vibrant, energetic palette that stands out from typical tech publications. The gradient background subtly hints at Python’s duality (beginner-friendly yet powerful), while also making the magazine approachable and visually inviting. The use of bold, modern fonts and clean iconography reinforced the magazine’s contemporary, youth-focused brand.

**What Didn’t Work / Feedback Received:** Initial drafts lacked a strong visual identity and didn’t communicate the theme of Python programming. Peer reviewers noted that while the layouts were clean, they appeared somewhat generic and didn’t immediately connect with Python as a language. Mentor feedback focused on making the covers more visually distinctive by using recognisable Python iconography, bolder colour schemes, and more engaging titles that better reflect the dynamic nature of coding.



**Improvements & Iteration:** Based on feedback, I refined the colour palette, adjusted font pairings and added symbolic coding visuals to make the theme clearer. I increased the scale of the title, added a subtle code-inspired border and made sure the colour gradient aligned more closely with the Python logo. I tested these changes across different devices and screen sizes using Canva's preview and download features to check layout accuracy and visual consistency.

#### Evidence & Skill Progression:



#### Reflection:

Designing the cover pages taught me the importance of colour psychology and branding in multimedia publishing. By directly referencing the Python logo's colours, I created an immediate visual association for readers, reinforcing the magazine's identity. The iterative design process guided by feedback and technical testing helped me achieve a balance between creativity and clarity, setting the tone for the entire publication. This experience also deepened my understanding of how small design choices (like colour gradients and motif placement) can have a big impact on user perception and engagement.

## CONTENT TABLE AND INTRODUCTION

Welcome and introduction  
Brain & Intermediate Puzzle  
Advanced logic  
Code Comedy  
The Early Years  
Modern Python  
What If  
Turtle Art Gallary  
Escape the Python Cave  
Hollywood & VFX  
Python & AI at Netflix  
15 Minute Hack  
ASCII Art & Puns  
Guido van Rossum profile  
Python & Java  
Secret Python Features  
Caeser Cipher Workshop  
Python in 2030 & Beyond  
Community Corner  
Python Unplugged Game Archive

**Did You Know?**  
Python was named after Monty Python not the snake! Its creators, Guido van Rossum, was inspired by the British comedy group.

Welcome to Python Unplugged, Your passport to the wild wonderful world of Python-no batteries required. Inside, you'll find brain-tricking puzzles, laugh-out-loud memes, and projects that will make you say, "I coded that?" Whether you're here to debug your skills or just for the snake puns, flip the page and let's get started

**Zen of Python Callout**  
"Run `import this` in your Python shell to uncover Tim Peters' secret programming philosophy!"

## **Evaluation:**

**Design Intent:** The goal of this spread was to introduce readers to the structure and purpose of the magazine while keeping the tone light, friendly and engaging. I wanted the table of contents to feel accessible, not overwhelming, and to give a preview of the magazine's personality. The introduction was designed to build a connection with readers and encourage them to explore each section with curiosity and confidence.

### **Key Multimedia Skills Demonstrated:**

- Layout design using Canva's grid and alignment tools.
- Colour harmony carried over from the cover to create consistency
- Use of decorative elements, like a yellow snake, to give the eye
- Clear typographic hierarchy to separate headings, Subheadings and body text

**What Worked Well:** Bringing in the colour palette from the cover created a seamless visual transition and made the magazine feel unified from the start. The orange floral elements added warmth and helped soften the structure of the content table, making it feel more welcoming. The introduction text was laid out in a way that didn't feel too text-heavy and used line breaks and spacing to maintain a clear reading flow. The overall design stayed clean while still being visually rich.

**What Didn't Work / Feedback Received:** Early versions had issues with alignment and spacing, especially in the table of contents. Some peers said the headings felt cramped and that the page did not match the visual energy of the cover. I also received feedback suggesting that page numbers should be included in the table of contents. However, after careful consideration, I chose not to include them. Because this magazine is compact, with each topic covering its own single page and the layout centred down the middle, adding page numbers would have disrupted the visual flow and created awkward spacing. Since the structure is simple and progresses in a straightforward order, the lack of page numbers does not make navigation difficult. Instead, it keeps the layout clean and balanced. In the introduction, I originally used a very plain layout, which did not set the right tone for the rest of the magazine.

**Improvements & Iteration:** I reworked the layout using Canva's guides to ensure even spacing and better balance across columns. I adjusted the size and weight of fonts to create a clearer hierarchy between titles and descriptions. I also repositioned the floral element to create a visual bridge into the next spread while making sure it didn't distract from the text. Device previews helped ensure the content looked good across screen sizes and resolutions.

### Evidence & Skill Progression:



### Reflection:

Designing the contents and introduction taught me how important early pages are for setting expectations. It's not just about listing sections, but about showing readers how to move through the magazine and what kind of experience they're in for. By refining the layout and applying feedback, I learned to use both structure and decoration in balance. This helped me stay consistent throughout the rest of the spreads and gave me a clearer sense of how to lead a reader visually.

## PYTHON BRAIN BENDERS

## Crack The code Tier

### 1-2 Puzzles

Test your skills-from bug hunting to optimisation!

#### BEGINNER PUZZLE

**Bug Hunt**



```
for i in range(5):
    print(i + " apples") # TypeError! Can you spot the fix?
```

**Hint:** Python hates mixing types like integers and strings

#### INTERMEDIATE PUZZLE

**Optimise This!**



```
squares = []
for x in range(10):
    squares.append(x**2) # Slow and clunky!
```

**Bug hunt fix**  
`print(str(i) + " apples") # or use f-strings`

**One liner fix**  
`squares = [x**2 for x in range(10)] # List comprehension!`

#### ADVANCED

## Recursion Riddle

Unravel the mystery stack!



```
def mystery(n):
    return n if n == 0 else n +
mystery(n-1)

print(mystery(4)) # What's the output?
```

**Clue:**  
`"4 + mystery(3) → 4 + 3 + mystery(2) → ..."`

**4 + 3 + 2 + 1 + 0 = 10**

## **Evaluation:**

**Design Intent:** This page was designed to challenge and engage the reader while still feeling fun and accessible. My goal was to present Python-themed logic puzzles in a way that encouraged problem-solving without feeling intimidating. I wanted the layout to feel interactive and visually stimulating so that readers of all skill levels would be drawn in and motivated to participate.

### **Key Multimedia Skills Demonstrated:**

- Canva-based layout with strong visual hierarchy for puzzle sections
- Use of shape and iconography to create a playful tone
- Consistent colour palette carried from previous pages to maintain flow
- Clear typography for readability and separation of puzzle types
- Grid and spacing tools in Canva to balance visuals and text
- Use of custom-designed headers to match the theme of brain teasers

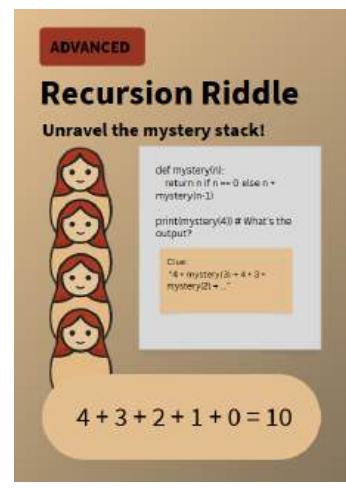
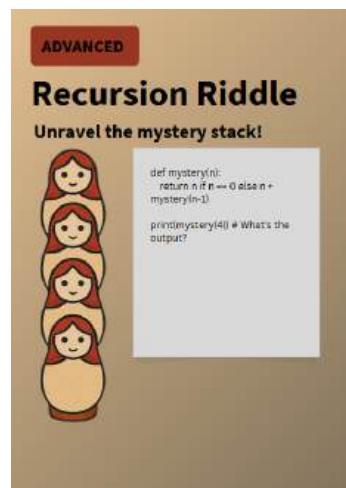
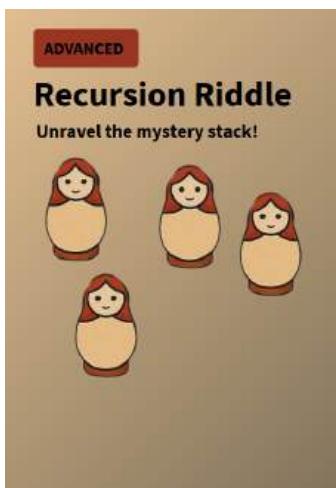
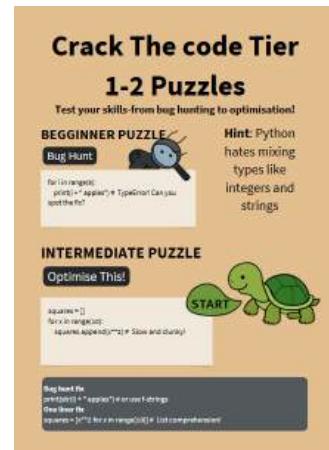
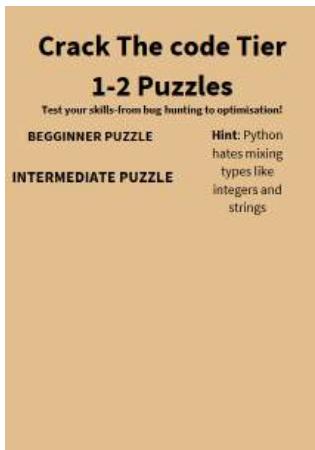
**What Worked Well:** The page successfully balanced function and aesthetics. The puzzles were laid out in sections, making it easy for readers to engage with them without getting lost in the layout. The playful design elements, like icons and shapes, helped lighten the tone of what could have been a dense, logic-heavy spread. Feedback from peers said the page felt “inviting but smart,” which matched my original intention. The structured layout also kept the page from feeling cluttered, even with a lot of text.

**What Didn't Work / Feedback Received:** One challenge was keeping the page visually balanced when dealing with different puzzle lengths. Some early drafts looked uneven or heavy on one side. I also received feedback that the puzzles needed more breathing room, as the text initially felt a bit cramped. Another comment mentioned that the header didn't communicate what kind of content was on the page, so I revised it to better reflect the interactivity and coding theme.

**Improvements & Iteration:** I adjusted spacing between puzzle blocks using Canva's alignment and margin tools. I also increased the padding around each section and used soft dividers to visually separate puzzles without using harsh lines. The header was redesigned to include a subtle Python icon and a playful font to better match the tone of the magazine. I tested different

colour backgrounds and settled on a tone that provided strong contrast with the text but stayed in harmony with the overall colour scheme.

### Evidence & Skill Progression:



### Reflection:

This spread helped me understand how to make interactive content visually engaging and user-friendly. Designing puzzles taught me to think not just about how things look but how readers will use the page. I also learned how spacing and visual rhythm can keep a reader from feeling overwhelmed, even when dealing with complex logic tasks. These lessons helped me improve future content-heavy spreads and gave me confidence in designing with both structure and creativity.

## CODE COMEDY



# CODE COMEDY

### CLASSIC DAD JOKES

**How does a computer get drunk?**

It takes screenshots.

**Why did the programmer quit his job?**

He didn't get arrays.

**What did the Python say to the SQLatemt?**

You call that a query?

### SyntaxError MEMES

I'm telling you, it's always "unexpected EOF while parsing..."

SyntaxError: unexpected EOF while parsing

I'll close the string this time, I swear!

SyntaxError: EOL while scanning string

**BONUS: PYTHON'S FAVORITE SNACK?**

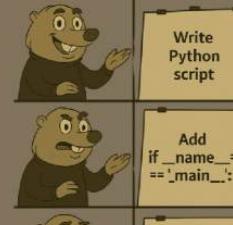
**SLICE OF PI!**

## MEME MADNESS “SYNNTAXERROR SUNDAY”

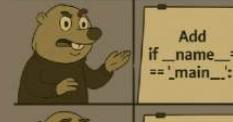
No error....must be fine.....



When your code compiles but nothing works.



Write  
Python  
script



Add  
if \_\_name\_\_ ==  
\_\_main\_\_:



Forget to  
save the  
file

### BONUS FEATURE: WHET'S

### PYTHON'S FAVORITE SNACK?

### Bytes & SLICES!

```
for char in "banana":  
    if char != "a":  
        print(char)
```

What should this  
comic banana say?

### INTERACTIVE HUMOR CORNER

Hidden on this page is an Easter Egg. Can you spot this invalid python keyword?

Hint: It's not print

## **Evaluation:**

**Design Intent:** This page was designed to provide a fun break in the flow of the magazine while still staying on theme. I wanted to show that coding isn't just about logic and structure but can also be creative and humorous. The goal was to keep the reader engaged through relatable jokes, visuals and Python references that appeal to both beginners and experienced coders.

### **Key Multimedia Skills Demonstrated:**

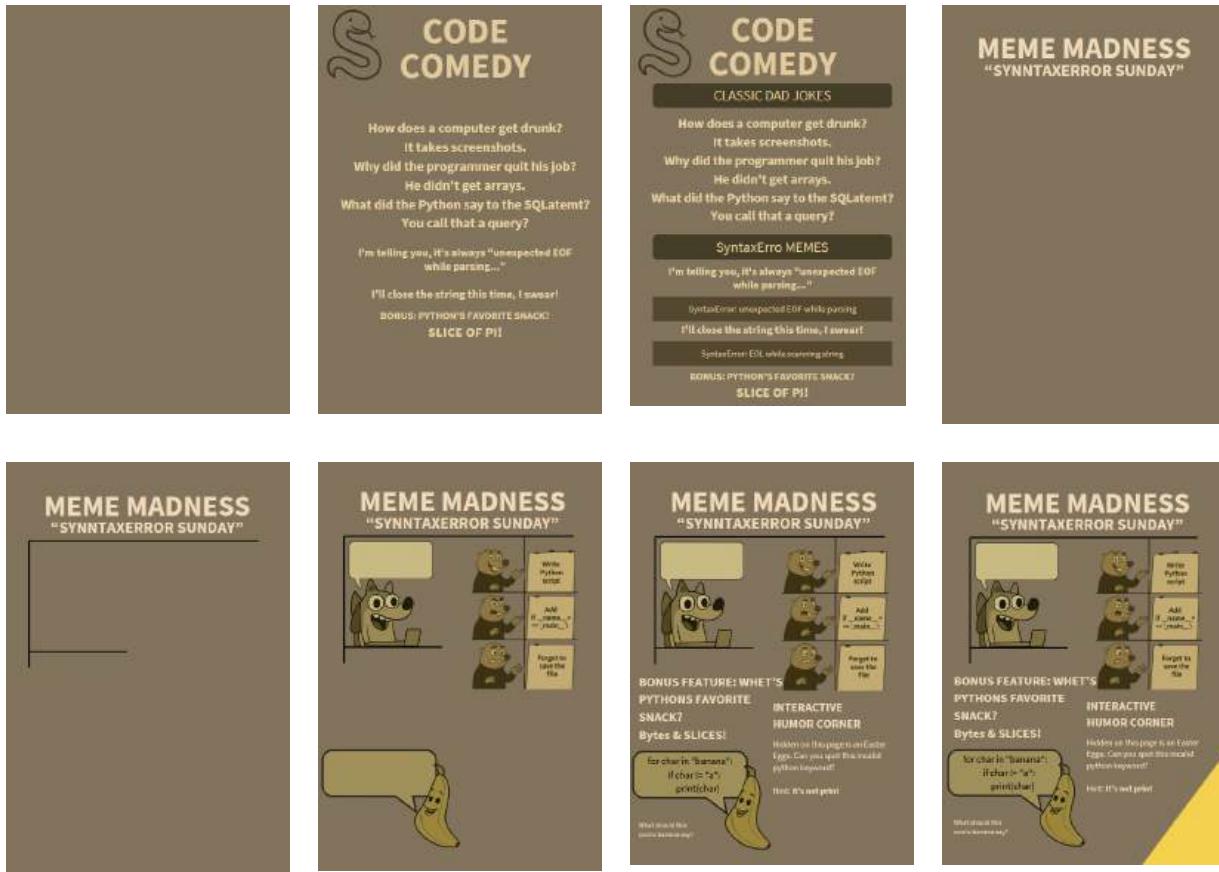
- Canva-based layout using columns for joke formatting
- Visual hierarchy to separate text from graphics and make jokes scannable
- Custom icons and illustrations to support the comedic tone
- Integration of light, playful fonts without sacrificing readability
- Balanced use of white space to avoid visual clutter
- Theme consistency with colours and design elements from other spreads

**What Worked Well:** The tone of the page came through clearly, and readers responded well to the humour. Peer feedback mentioned that the jokes felt "nerdy but accessible," which was exactly what I was aiming for. Canva's layout tools helped me structure the jokes in a way that kept them readable and easy to scan. The use of icons next to punchlines or visual cues added personality to the page and helped with the timing of each joke, almost like comic pacing.

**What Didn't Work / Feedback Received:** One challenge was making sure the humour worked across different reading levels. Some early feedback said that a few jokes were too niche or code-heavy. I also initially used a very stylised font for the punchlines, but it affected readability. Peers and my mentor suggested using cleaner fonts and limiting visual distractions around the text so that the humour could speak for itself.

**Improvements & Iteration:** I revised the joke selection to make sure all readers could understand the punchlines, even if they were new to Python. I changed the font to one that was more playful but still legible, and adjusted spacing between each joke block using Canva's margin tools. I also toned down some background graphics to make sure they didn't compete with the text. Final layout testing was done by previewing across different screen sizes to check how the timing and flow felt visually.

## Evidence & Skill Progression:



## Reflection:

This page helped me understand how humour and visual design can work together. I learned how small changes in font, spacing and layout can change how a joke lands for the reader. It also taught me how to adapt content for a wider audience without losing the core message. Creating this spread was a reminder that design isn't just about looking good, but about making the content easier to enjoy and connect with.

## HISTORY OF PYTHON

**1989-2008:**  
**From Guido's Hobby to Global Phenomenon**

How one developer's Christmas project changed coding forever

**1989**  
Guido van Rossum starts Python as a side project during Christmas break, aiming to fix ABC language's flaws!



Python's Early Philosophy "Readability counts."  
- The Zen of Python

Python's PANTHA



**2000**  
Python 2.0 introduces list comprehensions and garbage collection. The community grows.



FUN FACT: Python's name was almost 'Pymth' after a Monky Python sketch!

Python 0.9.0 release post! Scan to see



**2008-PRESENT:**  
**THE AI REVOLUTION**

HOW PYTHON ATE THE WORLD

**2008**

**PYTHON 3.0**



BACKWARD-INCOMPATIBLE PYTHON 3.0 LAUNCHES. Controversial but necessary FOR UNICODE SUPPORT!

NOTE: PYTHON 2 FINALLY RETIRED 2020 after 12 years of coexistence!

FUN FACT: Guido's original Python sketch (1991) included a planned feature called 'telepathy' for remote debugging.

DEEP DIVE: PYTHON IN POP CULTURE Python scripts rendered THANOS'S SNAP IN AVENGERS: ENDGAME!

SIMPLIFIED VFX PIPELINE EXAMPLE

```
import maya.cmds as mc
mc.render("thanos_snap.ma")
```



## Evaluation:

**Design Intent:** The goal of this page was to present the history of the Python programming language in a way that felt digestible, visually engaging and relevant to young readers. I wanted to avoid a traditional textbook-style timeline and instead create a spread that felt dynamic and told a story. The design needed to make the reader feel curious about how Python evolved while also showing why it still matters today.

### Key Multimedia Skills Demonstrated:

- Canva-based timeline layout using shapes, icons and layering
- Visual storytelling techniques to simplify complex chronological information
- Use of consistent brand colours to keep the page aligned with the rest of the magazine
- Clear type hierarchy to guide the reader through each historical point
- Integration of illustrations and symbols to support each period
- Responsive design testing through Canva's preview feature for digital readability

**What Worked Well:** The timeline layout created a strong sense of flow across the page and helped make historical dates easier to follow. Readers could scan each section and understand the significance of major moments in Python's development. Visual elements like icons and subtle background shapes added personality without distracting from the text. Feedback mentioned that the design made history feel approachable, especially for those who might usually find tech timelines boring.

**What Didn't Work / Feedback Received:** Early versions of the timeline felt too text-heavy and lacked enough visual rhythm. The alignment between text blocks and dates wasn't consistent, which made the timeline harder to follow. Some icons didn't connect to the events they were meant to represent. I also got feedback that the spacing between sections felt cramped, especially on smaller screens.

**Improvements & Iteration:** I restructured the timeline using Canva's alignment tools to ensure consistent spacing and visual flow. I revised or replaced icons to make sure each one matched the event it supported. To improve readability, I added soft dividers between time segments and increased padding around text blocks. I used device previews to make sure the timeline held its

structure across different screen sizes. I also kept colour usage simple to avoid overwhelming the content.

### Evidence & Skill Progression:



### Reflection:

This spread taught me how to turn information-heavy content into something visually engaging. I realised how much design can influence how people experience and remember facts. By using Canva's tools creatively, I was able to move away from a basic timeline and towards a layout that felt alive and meaningful. The skills I gained in organising content visually also helped in other pages where structure and flow were key.

## WHAT IF & CODE YOUR ADVENTURE

**WHAT IF? Python Ruled the World?**

**SCENARIO**  
PB&J Algorithm  
Teaching a Robot to Make a Sandwich

**READER CHALLENGE:**  
Pizza-Delivery Drone  
Your Turn to Code the Future!

A drone needs to deliver pizza in a city with Python-controlled traffic lights. Write the logic to:

- > Avoid CollisionError with other drones
- > Optimize route using google\_naps api
- > Handle NoTipError from customers

```
def deliver_pizza(order):
    try:
        # Step 1: Locate bread
        print("Locate bread")
        if order == "PB&J sandwich":
            print("Switch to spoon mode!")
        else:
            print("Switch to knife mode!")

        # Step 2: Cut the bread
        print("Cut the bread")
        if order == "PB&J sandwich":
            print("Switch to spoon mode!")
        else:
            print("Switch to knife mode!")

        # Step 3: Backup fall-back
        print("Robot error")
        raise RobotError("Critical tool failure")
    except RobotError:
        print("Switch to spoon mode!")

    # Deliver the sandwich
    print("Deliver the sandwich")
    if order == "PB&J sandwich":
        print("Switch to spoon mode...again!")
    else:
        print("Switch to knife mode...again!")
```

**Why did the pizza drone crash?**  
it used pip install pizza instead of import navigation!

**ESCAPE the PYTHON CAVE!**

I'll raise you like a python exception!

**KeyError**  
`[key: ]`  
`value:....`

**STORY START**

You arrive at a dungeon. The air smells of damp NoneType. A KeyError monster rears up, its body made of broken dictionaries! Give me RIFT K key, or ERROR your fate

(A) Attack lambda:  
(B) Fight with a lambda function (fight\_hp)  
(C) Stealth = True  
\*D sneak past - Roll random.  
 $\text{randint}(1,10) > 5$  to escape!

**WHY KEYERROR**

```
monster = {'weakness': "humor"}
print(monster [hp])
→ Triggers KeyError
```

Pssst-flip for a cheat sheet!

**LOGIC MAP**

(A) SE: hp = Slash!  
 $\text{monster\_HP} \leftarrow 10$

## Evaluation:

**Design Intent:** This spread was created to spark creativity and imagination while keeping coding at the core. The What If section encouraged readers to think about futuristic or alternate coding scenarios, while Code Your Adventure was designed to give them a hands-on feel for creating story-based programs. I wanted the page to be playful and narrative-driven, giving students a chance to dream big while learning how code can be used to build experiences.

### Key Multimedia Skills Demonstrated:

- Canva layout combining two distinct but connected sections
- Use of contrasting text styles and colour blocks to separate content types
- Story-driven design using icons, arrows and paths to reflect decision-making logic
- Consistent colour usage to connect with earlier spreads
- Custom header design and visual anchors to help guide the reader
- Canva shapes and lines to support a branching structure layout for the adventure path

**What Worked Well:** The side-by-side structure separated the two ideas while still tying them together through colour and design. The use of playful shapes and arrows in Code Your Adventure helped mimic the feeling of choosing your path, which supported the content theme really well. Feedback highlighted that the layout felt interactive and gave the feeling of motion, even though it was static. Readers found the concept engaging and said it made coding feel more like storytelling.

**What Didn't Work / Feedback Received:** The first draft of Code Your Adventure looked cluttered, and the flow between options wasn't visually clear. Some peers said it was hard to tell where to start reading or how the branches connected. The What If section also lacked visual emphasis at first and got overshadowed by the more graphic-heavy adventure area. Feedback suggested balancing both halves more and simplifying the path visuals.

**Improvements & Iteration:** I simplified the flowchart layout by reducing the number of branching lines and used clear labels and spacing to make navigation easier. I adjusted font weights and sizes to establish a stronger reading order. For What If, I added bold headings and icons to help catch the reader's attention. I tested several layout versions in Canva preview

mode and adjusted contrast to improve clarity between the two sections. The final version has a stronger balance and a clearer user journey.

### Evidence & Skill Progression:



### Reflection:

This page helped me explore how to make code feel creative and personal. I learned that layout can support storytelling, even in static formats, and that clarity is just as important as style. Using Canva to test multiple versions gave me space to experiment and refine. The project reminded me that multimedia design isn't just about how things look, but how ideas are communicated and understood. This approach of playful structure helped shape how I approached later spreads with interactive or conceptual content.

## TURTLE ART GALLERY

**TURTLE ART:  
Where Math Meets Beauty!**



```
from turtle import *
colors = ['red', 'blue', 'green']
for x in range(100):
    pencolor(colors[x % 3])
    forward(x)
    left(59)
```

The turtle turns left by 59 degrees each step while cycling through red, blue, and green in order using the modulus operator %.

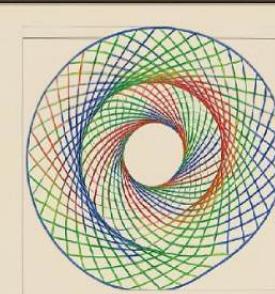
**Pro Tip:**

Change left (59) to left (61) and watch the spiral unravel into chaos! Try 360/7 for a spider pattern.

Scan to learn more Turtle art



**Gallery Wall:  
Python's Masterpieces**



**Title:** Prime Twist  
**Artist:** Python Turtle  
**Medium:** Code on Digital Canvas

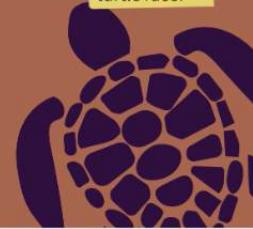
**Be the Artist:  
Modify This Code!**

Replace colors with ('gota', 'purole', 'black')

Change left() to right(45) forward(x' 8) for a shrinking square spiral

**Bonus:** Add speed (0) before the joop to watch the turtle race!

Exhibit Label: Prime Twist



## Evaluation:

**Design Intent:** This page was designed to celebrate the creativity that can come from code. Turtle art is a perfect example of how programming and visual art can intersect, and I wanted the gallery layout to showcase student-created pieces in a way that felt polished, inspiring and museum-like. My goal was to present the code-driven visuals as serious creative work, giving space for each piece to stand out while still feeling like part of a cohesive spread.

### Key Multimedia Skills Demonstrated:

- Canva gallery-style layout using grid structures and spacing
- Image framing and cropping to present turtle graphics professionally
- Use of white space to emphasise each artwork
- Visual consistency with previous pages through colour palette and typography
- Custom captions and labels to provide context for each piece
- Exporting high-resolution images from code into Canva without losing quality

### What Worked Well:

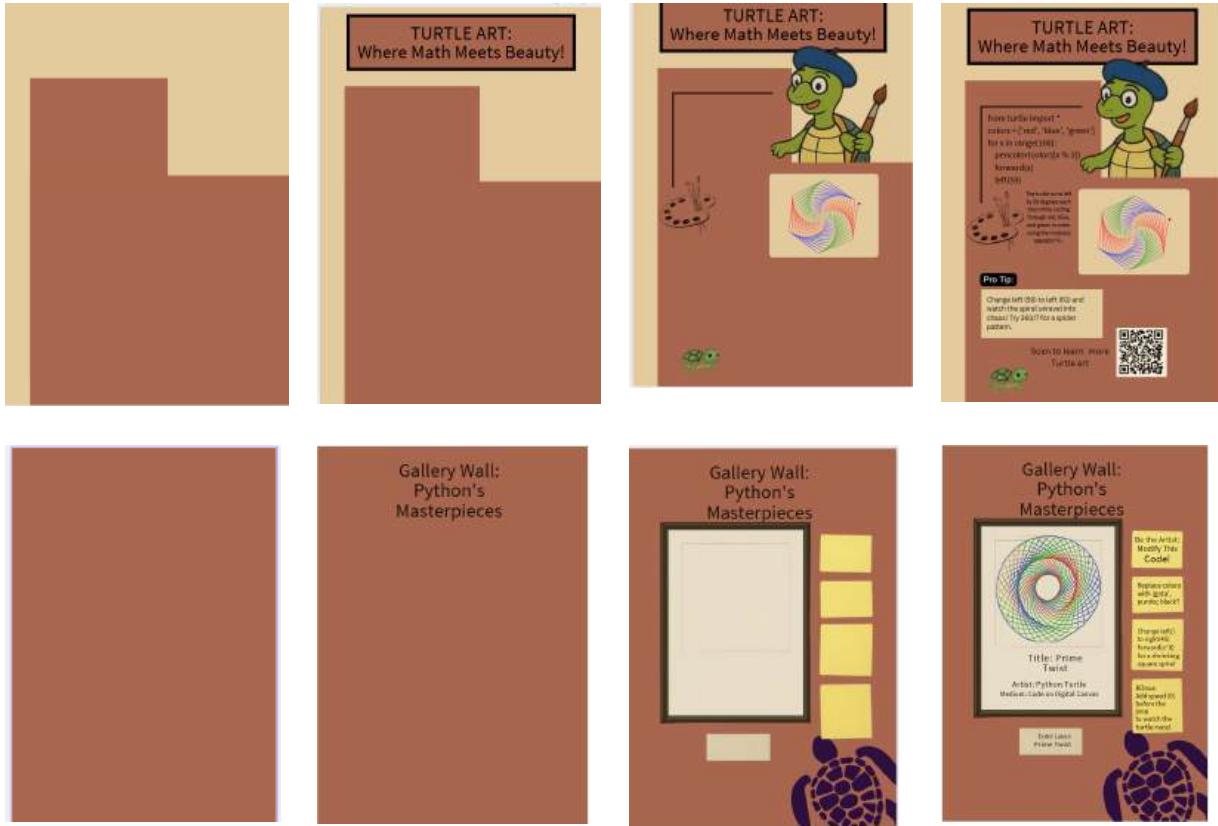
The clean, minimal design helped each turtle artwork stand out without distraction. The grid layout created a natural sense of order, and the use of subtle background colours helped the page feel polished and calm. Feedback from peers mentioned that the page felt like a “real art gallery,” and that the artwork was presented in a way that made it feel important. Canva’s layout tools made it easier to align images perfectly and maintain balance across the page.

### What Didn’t Work / Feedback Received:

The biggest challenge was image quality. Some initial artwork exports came out pixelated or off-centre when imported into Canva. I also got feedback that the captions were too small and lacked contrast, making them hard to read. In early drafts, the layout felt too tight and didn’t give the artwork enough breathing room.

### Improvements & Iteration:

To improve clarity, I re-exported the turtle art at a higher resolution and used Canva’s frame tool to crop and centre each piece. I adjusted the caption font to a more readable typeface and increased the font size and contrast for accessibility. I also added more space between each image and softened the background to reduce visual noise. I used device previews to check that the layout still worked on different screen sizes.

**Evidence & Skill Progression:****Reflection:**

This page helped me appreciate how code can be presented not just as functional, but as artistic. It pushed me to think more about presentation and how layout can elevate content. I learned how to manage image assets more carefully and how spacing and contrast can influence how work is perceived. The experience made me more confident in treating creative coding as a form of visual storytelling and deepened my understanding of layout as a tool for expression.

## PYTHON IN POP CULTURE & PYTHON AND AI

**PYTHON IN SPECIAL EFFECTS: FROM SNAPS TO SPACE!**

**Case Study**  
The visual effects (VFX) in *Avengers: Endgame* represent a pinnacle of cinematic achievement, with over 2,500 VFX shots crafted by leading studios like Weta Digital, ILM, Framestore, and Cinesite. These teams brought to life iconic sequences such as the epic final battle, the emotionally expressive CG character of Smart Hulk, and the photorealistic recreation of past MCU locations through time travel. Innovations in facial animation, crowd simulation, and digital de-aging pushed the boundaries of realism and storytelling, allowing characters like Thanos and Tony Stark to resonate with emotional depth. Seamlessly blending live-action with digital artistry, the film set a new standard for blockbuster filmmaking and earned critical acclaim for its groundbreaking visual work.

**Did you know?**  
Python scripts render Thanos's snap in *Avengers: Endgame*!

**The Science of VFX**

- Movies Processed 90% of snapping Scenes
- TV & GAMES Simulated dragon on fantasy TV
- Music Scikit-learn using for recommended tune

**Reader Snap**  
# Simplified VFX pipeline (IMV style)  
# with Python API  
# tweaks, boosts  
# artistry without the overhead.

**How Netflix Recommends Your Next Binge**

**TOP PICKS**

**You** Stranger Things

75% Match

**THE WITCHER**

**The Python-Powered Magic Behind "Because You Watched....."**

**Data Collection**  
Python logs, your watches, pauses and ratings (even when **you rewind** that kiss scene!)

**(Simplified Netflix-Style Code Example)**  
`import tensorflow as tf  
import tensorflow as tf  
inner = tf.keras.Dense(gettf.nergstirclu,  
sc=(4) genres!)`

**Model Training**  
Key libraries in Python for deep learning:

- TensorFlow, PyTorch for deep learning
- Pandas for data wrangling
- Flask for API endpoints

**USER** → **Python API** → **Watch TWITCHER**

**Quick Fact**  
Netflix users - approx 5,000 python jobs/day, to train models!  
Recommendations drive 80% of watched content.

**TRY THIS!**

```
import random  
shows = ["Stranger Things", "The Witcher", "Squid Game"]  
weights = [0.7, 0.2, 0.1]  
print("Try: {random.choices(shows, weights=weights)}")
```

## Evaluation:

**Design Intent:** This double spread was created to show how Python extends beyond the classroom and into real-world applications and popular culture. The Pop Culture side aimed to surprise readers by showing where Python has been used in unexpected places like games, movies and apps. The AI section focused on the cutting-edge side of Python, helping readers understand how it's powering technologies like machine learning and data analysis. I wanted the two halves to contrast but still feel visually connected.

### Key Multimedia Skills Demonstrated:

- Canva split-page layout to separate themes while keeping overall harmony
- Icon use and imagery to represent pop culture references and AI concepts
- Custom graphic elements and visual metaphors (e.g. brain icons, digital grids)
- Consistent type hierarchy and colour palette for readability
- Canva shape tools to build visual separators without breaking layout flow
- Use of engaging headers and short blocks of text to keep content scannable

**What Worked Well:** The contrasting design themes helped define each topic while still feeling part of the same magazine. The Pop Culture side was more playful, using bright colours and fun references, while the AI section had a sleeker, more technical look with cool tones. Peer feedback said the balance between the two sections worked really well and made both topics accessible. Canva's flexibility made it easier to control visual tone using colour and layout.

**What Didn't Work / Feedback Received:** One issue was that the first layout felt too disconnected – it looked like two separate pages instead of one cohesive spread. The pop culture side originally had too many small images that felt cluttered. The AI side had the opposite problem, with too much text and not enough visual support. Feedback suggested improving the balance by reducing text blocks, adding illustrations and softening transitions between the two sections.

**Improvements & Iteration:** I cleaned up the pop culture layout by removing a few images and grouping references more clearly. On the AI side, I added visuals like simple icons, digital shapes and a “Python + AI” title banner to break up the text. I also used consistent section headers and divider elements across both sides to tie the spread together. I reviewed the entire layout using Canva’s preview and made spacing adjustments to help the eye move naturally between both themes.

## Evidence & Skill Progression:



### Reflection:

Designing this spread helped me think more about how layout affects reader perception. Balancing two very different themes on the same page taught me how to unify a design through consistent structure and visual cues. I also learned how to make complex information, like AI, more engaging by pairing it with visuals and simple explanations. This page helped sharpen my ability to communicate clearly through design and to balance education with entertainment.

## MINI PROJECTS

**15:00**

### 15-MINUTE PYTHON HACKS: Dad Joke Edition



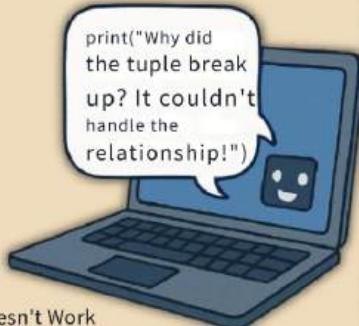
**PROJECT 1:**  
**Excuse  
Generator**  
For When Your Code Doesn't Work

```
import random
excuses = [
    'My dog ate my code',
    'I swear it worked yesterday',
    'A cosmic ray flipped a bit',
    'It's a Stack Overflow bug!']

print(f'{Teacher}, {random.choice(excuses)}
```

**CHEAT SHEET**

**UPGRADE CHALLENGE:**  
Try adding while True: ()  
for infinite excuses! (Ctrl-C to stop)



**f-string random**  
Cleaner than excuses!

**f-string**  
Cleaner than concatenation!

### ASCII Art & Beyond!

#### PROJECT 2: KIRBY DANCE

Bring Sprites to Life

**Print Copy**

```
# Kirby dancing!
print(" (^_^)> <(' '_c) ")
# Flip the dance!
print(" v(^_^)v <(' '_c) ")
```

**Output**

```
(^_^)> <(' '_c)
v(^_^)v <(' '_c)
```

**Pro Tip**  
Use n for multi-line art!

**BONUS PROJECT: PUN GENERATOR**  
Because Python Puns Never Get Old

**Puns = Copy**

```
"I'm reading a book on anti-gravity... it's impossible to put down!"
"Why do Python devs hate snakes? Too much hiss-terical drama!"
print (random.choice(puns))
```

**Try This!**

# Add your own pun here:
puns.append(



## Evaluation:

**Design Intent:** This page was designed to give readers hands-on ideas they could try using Python. I wanted the mini projects to feel accessible and fun, while still showing the real-world potential of coding. The goal was to encourage experimentation and self-directed learning. Each project had to look like a starting point, not a finished product, so readers felt invited to explore rather than intimidated.

### Key Multimedia Skills Demonstrated:

- Canva grid-based layout for consistent project presentation
- Use of icons, code-like text styling and short descriptions for each project
- Visual hierarchy to separate titles, project explanations and outcomes
- Custom colour accents to help each project block stand out
- Clean typography and white space to avoid overwhelming the reader
- Canva's alignment and grouping tools for balance and clarity

### What Worked Well:

The structured grid format made it easy to feature multiple projects while keeping the page clean and scannable. Each project was short and focused, which helped hold attention. Feedback mentioned that the layout felt "motivating" and gave a sense of progress or checklist energy. The balance of text and visuals worked well, and Canva's tools helped make spacing and layout feel precise and even across the whole page.

### What Didn't Work / Feedback Received:

The first version tried to include too much explanation, which made the project blocks feel heavy and text-dense. Some peers said the page felt more like a textbook than an invitation to code. There was also feedback that the titles were too small and didn't stand out enough to draw attention to each project.

### Improvements & Iteration:

I shortened the text and rewrote each project description to focus on what the reader could make, rather than how to do it. I increased the font size for project titles and added icons to visually distinguish each one. I also used Canva's spacing tools to create more breathing room between the blocks and tested the layout at different resolutions to make sure it still felt clean and motivating across devices.

**Evidence & Skill Progression:**

**15-MINUTE PYTHON HACKS: Dad Joke Edition**

15:00

```
import random
excuse = ["My dog ate my code", "I never worked yesterday", "I was trying to flip a bit", "It's a Stack Overflow bug!", "print('Wheee!', flush=True)"]
```

**PROJECT 1: Excuse Generator**

For When Your Code Doesn't Work

import random  
excuse = ["My dog ate my code", "I never worked yesterday", "I was trying to flip a bit", "It's a Stack Overflow bug!", "print('Wheee!', flush=True)"]

**CHEAT SHEET**

import random  
excuse = ["My dog ate my code", "I never worked yesterday", "I was trying to flip a bit", "It's a Stack Overflow bug!", "print('Wheee!', flush=True)"]

**15-MINUTE PYTHON HACKS: Dad Joke Edition**

15:00

**PROJECT 2: KIRBY DANCE Bring Sprites to Life**

Print Copy

```
# Kirby dancing
print("o_n><l_z")
```

Output

```
(^_><'_c)
```

Pro Tip

Use it for multi-line art!

BONUS PROJECT: PUN GENERATOR Because Python Puns Never Get Old

Print Copy

```
"I'm reading a book on anti-gravity... it's impossible to put down!"
```

Try This!

Read your favorite puns instead!

**Reflection:**

This spread taught me how to make technical content inviting. I learned how visual design can support motivation, and how simplifying content helps communicate more effectively. It also reminded me that layout affects how confident readers feel. By creating a structure that feels clear and encouraging, I was able to turn simple project ideas into something that invites creativity and independent learning.

## PYTHON SUPERSTARS & PYTHON VS OTHER PROGRAMMING LANGUAGES

### PYTHON SUPERSTAR



**GUIDO VAN ROSSUM**

Guido van Rossum didn't just invent Python, he changed coding forever. Born in the Netherlands in 1956, he set out to create a language that was elegant, intuitive, and fun. Released in 1991, Python quickly became a favorite for developers, powering everything from AI to web apps. Van Rossum led Python's evolution at Google and Dropbox, earning the playful title "Benevolent Dictator for Life." Even after stepping down in 2018, his legacy lives on as Python remains a powerhouse, proving that sometimes, simplicity is genius.

**THE BIRTH OF PYTHON**

Year	Event	Description
1990	Concept	Guido van Rossum starts developing Python at CWI.
1991	Python 0.9.0	First official release with exception handling & modules.
1994	Python 1.0	Introduces functional programming features (lambda, map, filter).
2000	Python 2.0	Adds list comprehensions and garbage collection.
2008	Python 3.0	Major overhaul with improved syntax, but not backward compatible.
2015	Python 3.5	Brings async and await for asynchronous programming.
2020	Python 3.9	Introduces dictionary merging ('dict. did').
2023	Python 3.12	Performance boosts, better error messages, and enhanced typing.

### 3 ROUNDS, 1 CHAMPION

## PYTHON vs. JAVA THE ULTIMATE SHOWDOWN

**FIGHT**

**ROUND 1: SPEED**

- C++ 🚀: "Raw performance [0.1s runtime]"
- Python 🐍: "Slower but readable [1.2s runtime]"
- Java ☕: "JIT-compiled balance [0.3s runtime]"

**Verdict:** "C++ KOs all for speed!"

**ROUND 2: AI & LIBRARIES**

- Python 🤖: "TensorFlow, PyTorch, 80% of AI projects"
- Java ☕: "DeepLearning4j, but niche"
- C++ 🚀: "Only for optimisation layers"

**Verdict:** "Python wins by TKO!"

**ROUND 3: READABILITY**

- Python 🐍: "Zen-like clarity"
- Java ☕: "if user.happy: print('😊')"
- Java ☕: "if (user.isHappy()) { System.out.println("😊"); } // Verbose!"

**Verdict:** "Python's Zen KO's Java's [];"

**KEY TAKEAWAYS**

- When to Use Python:
  - AI/ML, scripting, rapid prototyping.
  - "When developer time > runtime."
- When to Use Java:
  - Enterprise apps, Android development.
  - "When type safety > agility."
- Wildcard:
  - "Use C++ for game engines or SpaceX rockets!"

## Evaluation:

**Design Intent:** This spread was designed to give recognition to real-world figures who have made an impact using Python and to help readers understand how Python compares to other popular programming languages. The Python Superstars section was meant to inspire by showing the human side of coding, while the Comparison section aimed to build confidence by showing Python's strengths. I wanted the page to feel informative but not too technical, with a balance between storytelling and quick facts.

### Key Multimedia Skills Demonstrated:

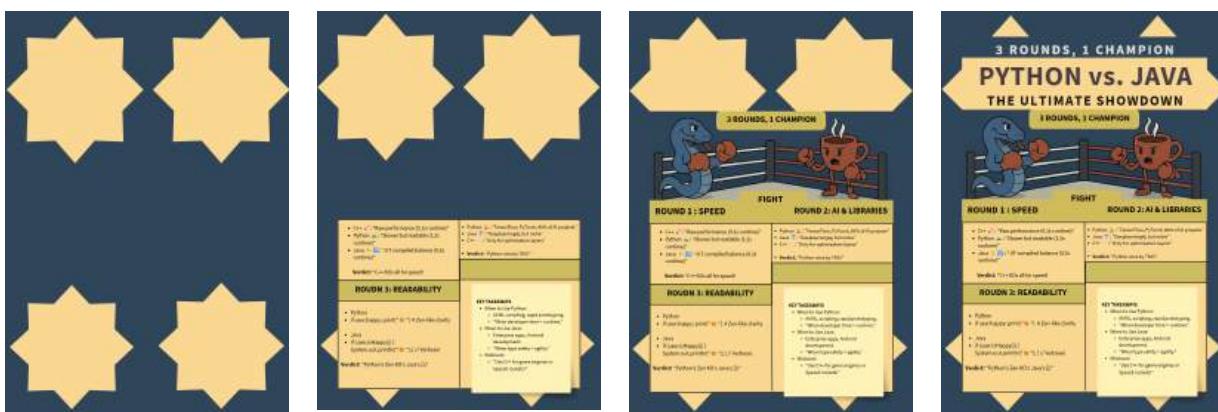
- Canva side-by-side layout to separate and balance two types of content
- Use of profile-style design elements for the superstar section (photos, quotes, bios)
- Icon-based comparison table for visual clarity
- Custom colour accents to distinguish sections while keeping harmony
- Strong typographic hierarchy for readability across dense information
- Use of Canva's alignment and grouping tools to ensure a clean presentation

**What Worked Well:** The superstar profiles gave the spread personality and helped humanise the subject of coding. Feedback said this section was "inspiring and easy to read." The comparison chart helped demystify technical differences between languages, using icons and short blurbs instead of long text. Canva's column layout tools made it easier to balance visuals and text so that each section had space to breathe. Readers appreciated the contrast between personal stories and practical comparisons.

**What Didn't Work / Feedback Received:** Originally, the Python Superstars section looked too similar to the rest of the magazine and didn't feel special. It lacked enough visual identity to make the individuals stand out. On the Comparison side, early versions were too text-heavy and hard to scan. Feedback suggested more visual support and simplification of language so the comparison was clearer for beginners.

**Improvements & Iteration:** I redesigned the Superstars section by introducing circular frames for images, stylised pull quotes and coloured blocks to highlight each person. I also rewrote the bios to be shorter and more engaging. On the Comparison side, I replaced dense text with icons and added checkmarks, short labels and simplified feature breakdowns to make the section more user-friendly. I used Canva's preview mode to test for layout flow and consistency across screen sizes.

## **Evidence & Skill Progression:**



## Reflection:

This spread helped me balance emotional storytelling with factual comparison. I learned that it's just as important to show the people behind the code as it is to show what the code can do. Using Canva pushed me to find ways to present different types of information side by side without overwhelming the page. I now understand how layout choices can help break up dense content and how design can shape the way readers relate to both data and people.

## PYTHON'S EASTER EGG &amp; CYBERSECURITY

**SECRET PYTHON: Hidden Games & Jokes**

1. `>>>import antigravity`  
"You levitate slightly!"  
Opens a webcomic in browsers

2. `from __future__ import braces`

3. **The Zen of Python**  
Hidden Message:  
"Run import this  
in Python 2.x to  
see a secret  
acronym!"

4 TRY IT YOURSELF  
Interactive Challenge:

- 1."Discover these Easter eggs in your Python shell:"
- 2.`import __hello__`
- 3.`hash(float('inf'))` (Returns "π" in Python 3!)
- 4.`print().__class__.__base__` (The secret of tuples!)

**CLASSIFIED CLASSIFIED TOP SECRET**

**ETHICAL HACKING 101: Encrypt Like Julius Caesar!**

**ALARM**

1. **The Cipher Explained**  

- A → D, B → E, C → F
- X → A, Y → B, Z → C

 Used by Caesar in 58 BC to protect military messages

2. **Your Mission**  
`def encrypt(text, shift):  
 return ''.join(chr(ord(c) + shift) for c in text)  
#Encrypt 'HELLOW' with shift=3:  
  
Debug this! The code breaks on space. Fix it with:  
if c == ' ': return ' '`

Additional Hint: Consider also handling lowercase letters to make your encryption more robust!

3. **Decryption challenge.**  
 "Crack the code (shift=5): MJQQT \_\_\_\_"  
**HINT:**  
 Reverse the shift by subtracting instead of adding!

**ETHICAL HACKING PRINCIPLES**  
 Infographic: Green Hat Hacking - Ethical Penetration Testing!  
 • Permission-based testing  
`def pentest(target):  
 if not target.permission:  
 raise EthicViolation`

**Real-World Tools:** Python libraries like scapy for network analysis."

**Broader Context:** Ethical hackers operate with permission and a moral framework! Consider briefly contrasting them with black hat (malicious) and white hat (corporate security) hackers for a fuller perspective.

**CLASSIFIED CLASSIFIED**

## Evaluation:

**Design Intent:** This spread was created to introduce readers to two very different sides of Python: its hidden humour and its role in serious digital security. The Easter Egg section aimed to show Python's playful, quirky culture through built-in surprises in the language. The Cybersecurity side was designed to highlight ethical hacking and encryption in a way that felt accessible for students. I wanted the contrast to be part of the appeal, showing that Python can be both fun and powerful.

### Key Multimedia Skills Demonstrated:

- Canva layout balancing playful and serious tone across a split spread
- Use of colour coding to separate content themes (e.g. green for security, purple for Easter eggs)
- Infographic-style elements to simplify technical concepts
- Typographic contrast to guide readers between humour and hacking sections
- Icons and callouts to draw attention to secret functions and code examples
- Structured captioning and ethical guidelines in the cybersecurity section

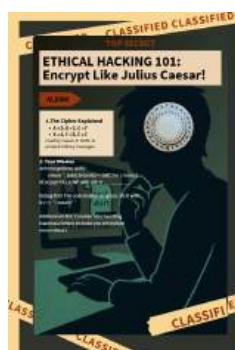
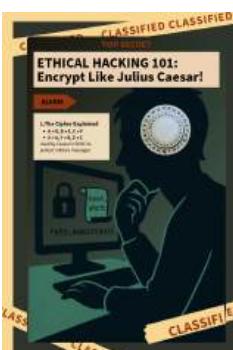
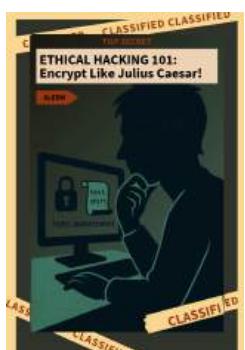
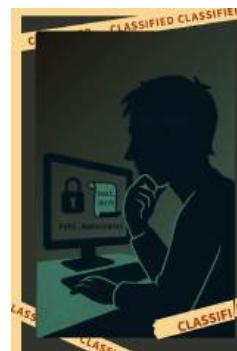
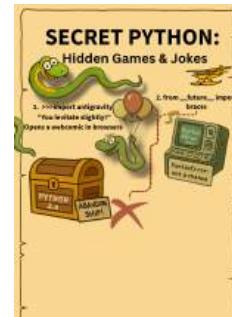
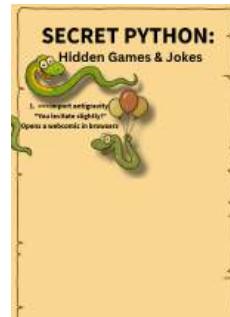
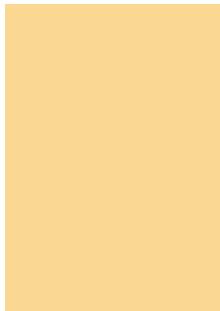
**What Worked Well:** The visual contrast between the two sections helped define the tone of each without making the spread feel disconnected. Readers said the Easter Egg examples were fun to explore and sparked curiosity. The Cybersecurity area gave just enough detail to feel informative without being overwhelming. Canva's layout tools helped position the elements clearly and consistently across the two themes. The use of colour, icons and code callouts helped keep the content engaging and clear.

**What Didn't Work / Feedback Received:** The first version of the spread leaned too much into the fun side and made the cybersecurity content feel like an afterthought. Some feedback said the encryption example was too technical without enough explanation. The layout also had balance issues; the Easter egg section felt more prominent, which made the security half feel less important.

### Improvements & Iteration:

I added a clear title banner to separate the two topics visually and adjusted the layout to give equal weight to both. I rewrote parts of the cybersecurity section to simplify the encryption explanation and included more labels and a real-world example. The Easter egg callouts were reduced slightly to avoid clutter, and I used Canva's guides to improve spacing and alignment between text blocks and visuals. Preview mode helped me check the balance across devices.

## Evidence & Skill Progression:



**Reflection:** This spread challenged me to bring together two very different tones in one cohesive design. I learned how layout and structure can guide the reader's focus and how important it is to give equal visual and content weight to all parts of a page. It also deepened my understanding of how Python is used both creatively and professionally. Designing this spread helped me think more critically about how to present dual themes in a way that feels unified, informative and enjoyable.

## FUTURE OF PYTHON &amp; COMMUNITY CORNER

**PYTHON IN 2030:**  
THE NEXT DECADE OF DOMINANCE  
COMING SOON

**WHY PYTHON WILL OWN THE FUTURE**

- Quantum Computing:**  
Python's simplicity makes it the perfect bridge between humans and quantum machines. By 2030, Qiskit will be as common as NumPy!  
– Dr. Quantum, IBM Research
- Python's AI Dominance:**
  - 92% of AI papers use Python (2024) → 98% by 2030
  - "PyTorch 5.0" will auto-debug itself!
- Space Tech:**
  - Did You Know?  
NASA's 2028 Venus probe will run Python scripts to analyse atmosphere samples!

**TRY FUTURE PYTHON TODAY!**  
Mini Project: Quantum 'Hello World' with Qiskit

```
1. from qiskit import QuantumCircuit
2. qc = QuantumCircuit(1) #Create a quantum bit
3. qc.h(0) # Put it in superposition
4. print("Quantum Hello!") #Regular Python still works!
Run this on IBM's free quantum simulator!
```

**CHALLENGES AHEAD**  
Balanced Perspective:

- "Will Python's speed limitations hold back quantum adoption?"
- "Can Python 4.0 fix the GIL without breaking everything?"

**python club**

## Your Code, We share!

**FEATURED CONTRIBUTIONS**

**Python Man to the Rescue!**

**Doodle Details:**

- Cape pattern: Binary 01010000 01011001 ("PY" in binary).
- Utility belt tools: pip, \_\_init\_\_, and lambda glyphs.

**Callout Box:**  
"Submit your art! Best doodle wins an important awesome sticker next issue."

**pipe\_collision(bird, pipes): print('Game Over!')**

# This works about 60% of the time

**JOIN THE FUN!**

Call-to-Action:

- Art Submissions: "Draw your Python alter-ego!"
- Code Challenges: "Can you improve Alex's Flappy Bird hitbox?"
- Meme Wars: "Best IndentationError meme wins!"

**QR CODE**

**Me: print("Hello World")**  
**Python: "You had one job... just one closing parenthesis."**

## Evaluation:

**Design Intent:** This spread was created to wrap up the magazine with a forward-looking, community-driven focus. The Future of Python aimed to inspire readers with possibilities of where the language could go next, from quantum computing to AI development. Community Corner was designed to be interactive and reader-focused, giving space for real contributions and encouraging continued involvement.

This page was also planned as a natural transition into future content, including the Python Unplugged Game Archive listed at the end of the table of contents. Rather than closing the magazine, Community Corner was meant to feel like an open door that leads into more fun and creative topics. Due to time constraints, I was not able to complete the game archive section before submission. However, the design of this final spread intentionally leaves space for future expansion and ongoing development of the magazine.

### Key Multimedia Skills Demonstrated:

- Canva layout combining editorial content with reader interaction
- Use of futuristic design elements such as icons, highlight boxes and stylised fonts
- Consistent brand colours applied to call-to-action blocks
- Grid structure to organise predictions, data and reader prompts
- Clear content hierarchy using font sizing, bolding and spacing
- Canva tools for layering, alignment and preview testing across devices

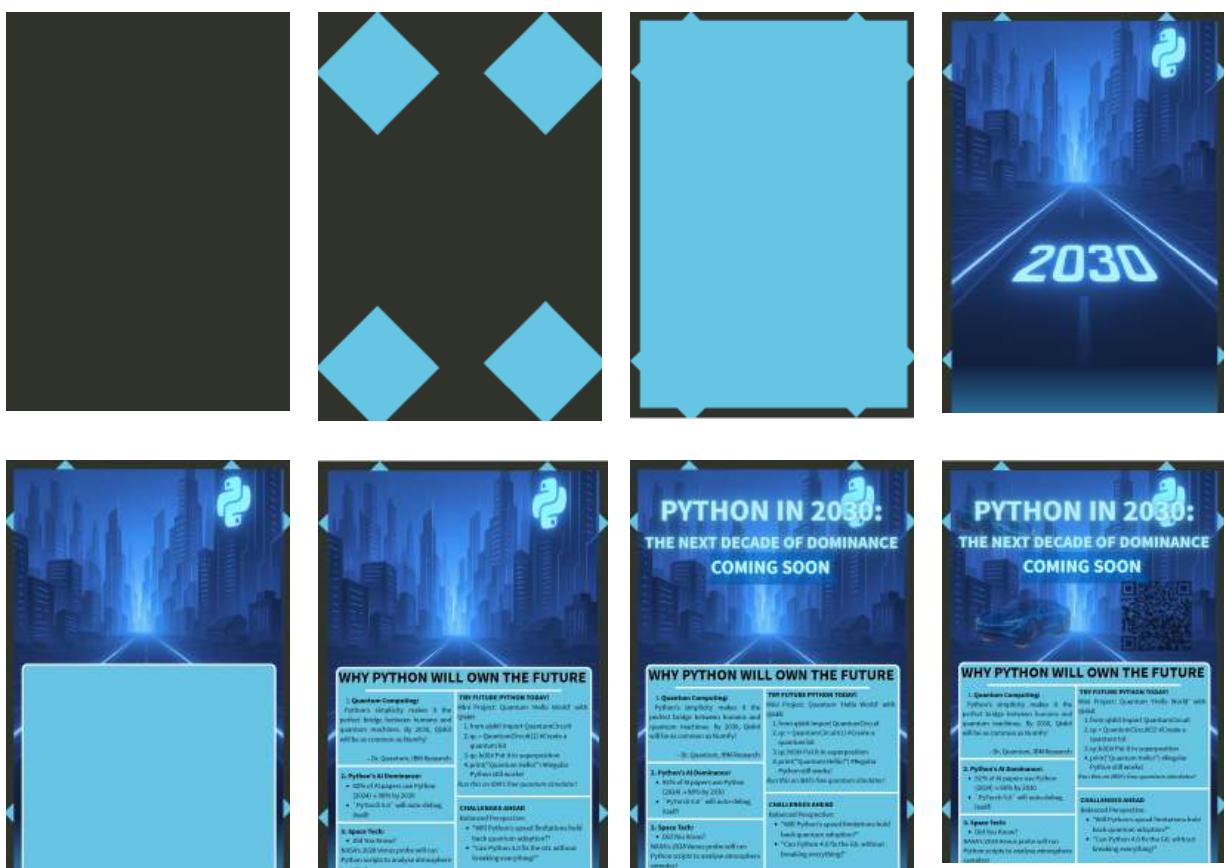
**What Worked Well:** The tone of this spread came across clearly as hopeful, exciting and inclusive. Feedback mentioned that the Future of Python predictions were interesting and visually engaging, especially with the mini project example using Qiskit. The Community Corner helped connect the reader back to the magazine's purpose, which is about exploration, creativity and shared learning. Canva's layout tools helped structure the content in a way that felt both balanced and welcoming.

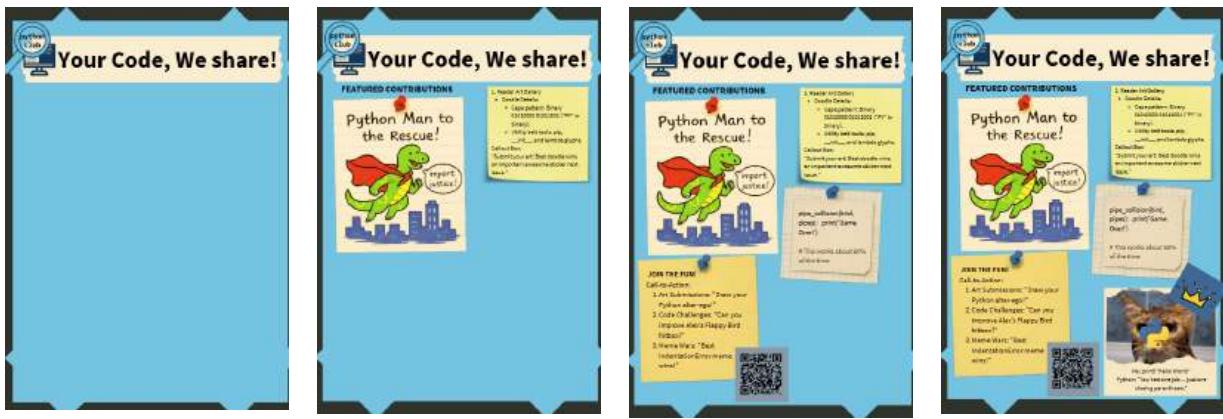
**What Didn't Work / Feedback Received:** In early drafts, the prediction section included too much text and felt disconnected from the overall visual style of the magazine. The layout also made it unclear whether Community Corner was the end of the publication or just another

section. Feedback suggested making the call-to-action more specific and giving clearer examples of how readers could participate. There were also spacing issues that made the two sections feel unrelated.

**Improvements & Iteration:** I trimmed down the prediction text and used icons to highlight key ideas, making it easier to scan. I added a mini project example to help readers see how future tech can be approached through Python. In the Community Corner, I added featured contributions, clear prompts and visuals that made the call-to-action more engaging. I also used Canva's alignment and preview tools to create a stronger flow between the two sections and to signal that this is a lead-in to more content.

### Evidence & Skill Progression:





**Reflection:** This spread helped me understand how to close a publication in a way that feels connected and open-ended. I learned how layout and messaging can work together to shape the reader's final impression. Including future-focused content alongside community features helped show the range of Python and the potential it holds.

It was also important to me that this page did not feel like the final stop. The Python Unplugged Game Archive was planned as the next section in the magazine, as listed in the table of contents. Although I could not complete it before submission, I designed Community Corner to lead naturally into that section. This approach keeps the door open for future issues or expanded editions, and it supports the idea that learning Python is a journey that can always continue.

“Behind the scenes: Watch me break things, fix things, and occasionally celebrate a working QR code.”

The production video may appear limited, as it doesn't fully provide detailed documentation of every step taken. However, it highlights the most important sections. Some parts of the production weren't recorded due to circumstances such as working outside scheduled hours and challenges caused by transitioning between devices and working within the school-hosted servers. These factors made it difficult to consistently document every stage of the process. Scan the QR code to view the documentation video, which has been fast-forwarded and condensed to a 6-minutes max overview.



## ⚠️ WHS and Safe Working Practices

“How to Code without Losing Your Sanity (or Your Posture)”

While Python might not involve soldering irons or power tools, working on Python Unplugged still required thoughtful planning around digital safety, ergonomic awareness, and mental wellness, especially given the long hours spent switching between coding, writing, and designing.

### **Ergonomics & Workspace Setup**

I established a safe and focused workspace by:

- Using an adjustable desk setup that lets me alternate between sitting and standing.
- Ensuring proper lighting to reduce eye strain, especially during late editing sessions.
- Positioning my Surface Pro 7 and keyboard at eye level to promote good posture and reduce wrist fatigue.
- Taking regular breaks using the Pomodoro technique (25 min work / 5 min rest) to prevent burnout and maintain productivity.

**To reduce the risk of Repetitive Strain Injury (RSI), I also:**

- Used external peripherals (mouse + keyboard) instead of the Surface's built-in keyboard for longer tasks.
- Installed posture check apps and reminders to stretch and reset throughout the day.

**Digital Wellness & Mental Health**

Working independently on a large-scale project can sometimes feel overwhelming, so I embedded safe mental health practices into my workflow:

- I structured my time using a project timeline with manageable milestones to avoid cramming or late-night burnout.
- I reached out to peers and teachers for constructive feedback, reducing the pressure to "get it perfect" alone.
- I made space for creative breaks, using memes, music, and even light exercise to reset my brain between tasks.

Staying balanced wasn't just good for my health; it directly improved the quality of the magazine, ensuring that each piece of content was crafted with energy and clarity, not exhaustion.

**Digital Safety & File Management**

To prevent data loss or digital disasters:

- All files were regularly backed up to GitHub and Google Drive.
- I maintained multiple saved versions of design drafts and documents to avoid overwriting or losing progress.
- Sensitive information, like account credentials, was stored securely and not embedded in any shared documents or code files.

These practices ensured not only the safety of my work but the sustainability of the production process under realistic school-life constraints.

## Classroom work station

## ⚠ WHS and Safe Working Practices

### How to Code without Losing Your Sanity (or Your Posture)

**Ergonomics & Workspace Setup**

- ✓ Using an adjustable desk setup to alternate between sitting and standing
- ✓ Ensuring proper lighting while coding
- ✓ Positioning my Surface Pro 7 and keyboard at eye level
- ✓ Taking regular breaks using the Pomodoro technique

**Digital Safety & File Management**

- ^ Backing up files to GitHub and Google Drive
- Maintaining multiple saved versions of drafts and documents

**Digital Wellness & Mental Health**

- ✓ Making space for creative breaks (memes, music, light exercise)
- ✓ Structuring time using a project timeline with manageable milestones
- ✓ Reaching out to peers and teachers for feedback to reduce stress