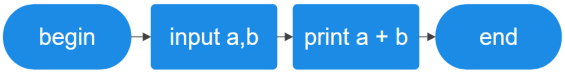
# Final Project Presentation
# Mini IT Portfolio

*Trần Minh Quang - AUH15086 - 24/11/2025*

# I. Lab - Week 07 report - MarisaOJ practice

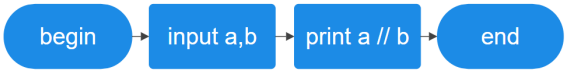
## 1. A+B

```
a, b = map(int, input().split())
print(a+b)
```



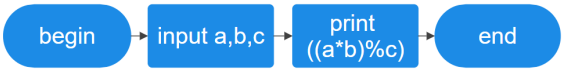

## 2. A/B

```
a, b = map(int, input().split())
print(a//b)
```



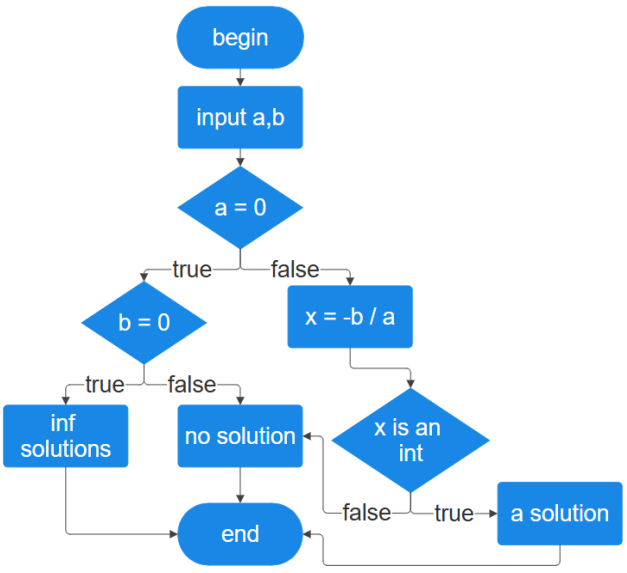

## 3. Complex multiplication

```
a, b, c = map(int, input(). split())
print ((a*b)%c)
```



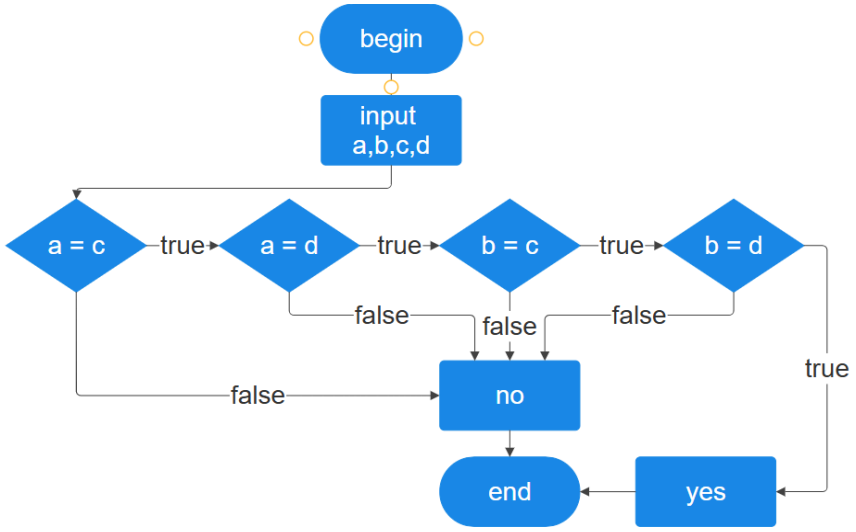

## 4. Integer equation

```
a, b = map(int, input().split())

if a == 0:
    if b == 0:
        print("INFINITE SOLUTIONS")
    else:
        print("NO SOLUTION")
else:
    x = -b / a
    if x == int(x):
        print(int(x))
    else:
        print("NO SOLUTION")
```



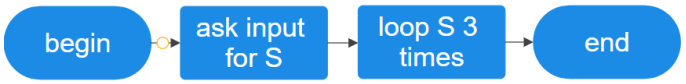
## 5. Combine rectangles

```
1. a, b, c, d = map(int, input().split())
2. if a == c or a == d or b == c or b == d:
3.         print("YES")
4. else:
5.     print("NO")
```



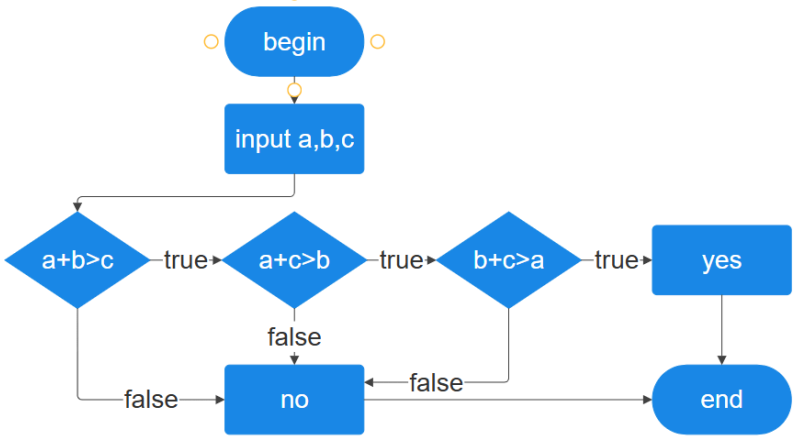

## 6. String

```
1. S = input()
2. for _ in range(3):
3.     print(S)
```



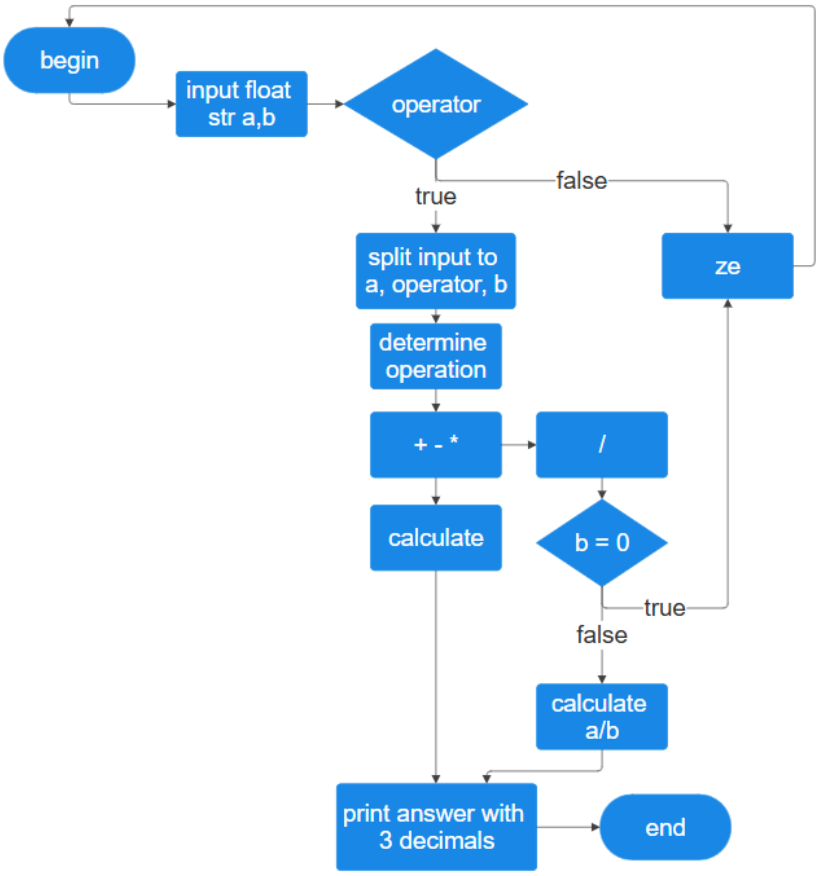

## 7. Triangle

```
1. a, b, c = map(float, input().split())
2. if a + b > c and a + c > b and b + c > a:
3.         print("YES")
4. else:
5.     print("NO")
```



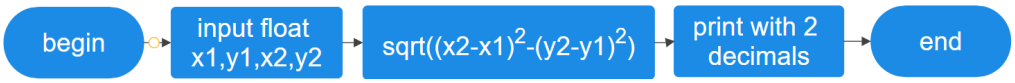
## 8. Calculator

```python
def solve():
    s = input().strip()


    for t in '+-*/':
        if t in s:
            a_str, b_str = s.split(t)
            a = float(a_str)
            b = float(b_str)
            break
    else:
        print("ze")
        return

    if t == '+':
        res = a + b
    elif t == '-':
        res = a - b
    elif t == '*':
        res = a * b
    elif t == '/':
        if b == 0:
            print("ze")
            return
        res = a / b

    print(f"{res:.3f}")

if __name__ == "__main__":
    solve()
```



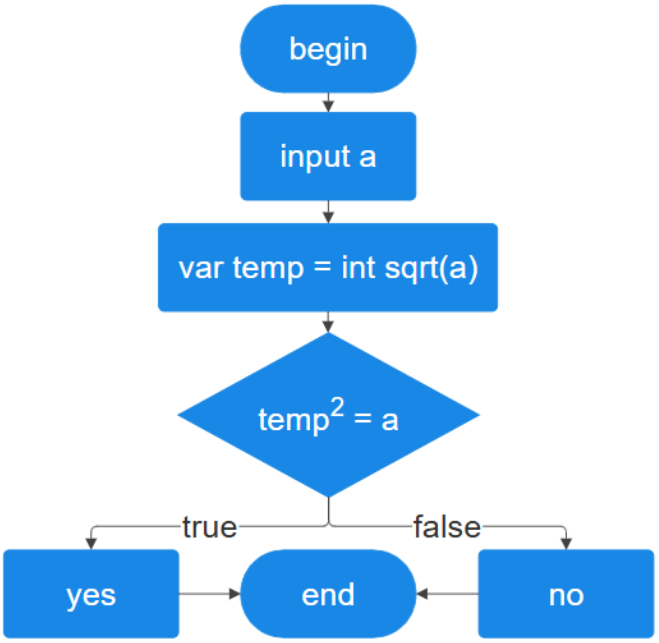
## 9. Distance

```
1. import math
2. x1, y1, x2, y2 = map(float, input().split())
3. dist = math.sqrt((x2 - x1)**2 + (y2 - y1)**2)
4. print(f"{dist:.2f}")
```



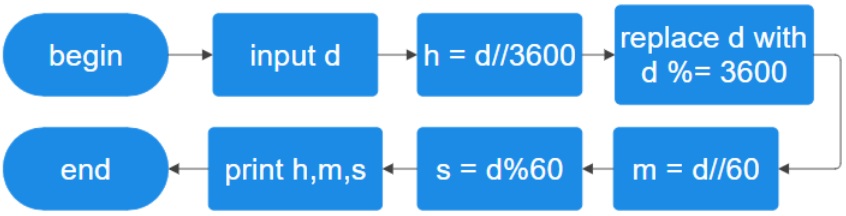

## 10. Square number

```
1. import math
2. a = int(input())
3. temp = int(math.sqrt(a))
4. if temp**2 == a:
5.         print("YES")
6. else:
7.         print("NO")
```



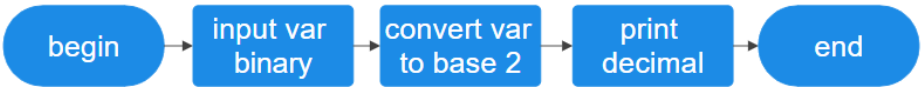

## 11. Time format

```
1. d = int(input())
2. h = d // 3600
3. d %= 3600
4. m = d // 60
5. s = d % 60
6. print(h, m, s)
```



### 12. Binary to decimal

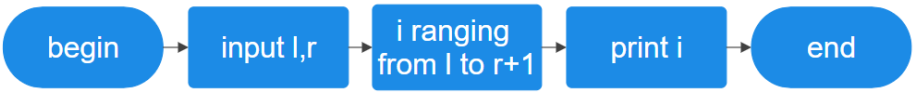
```
1. binary = input()
2. decimal = int(binary, 2)
3. print(decimal)
```




## II. Lab - Week 08 report - MarisaOJ practice

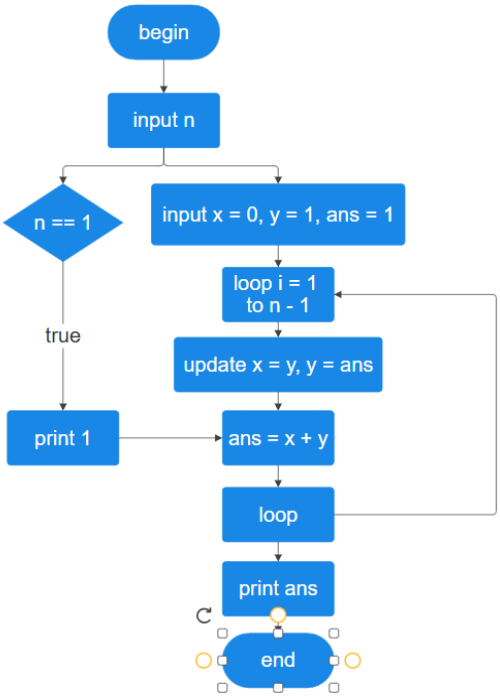
### 1. Loop

```
1. l, r = map(int, input().split())
2. for i in range(l, r + 1):
3.     print(i)
```



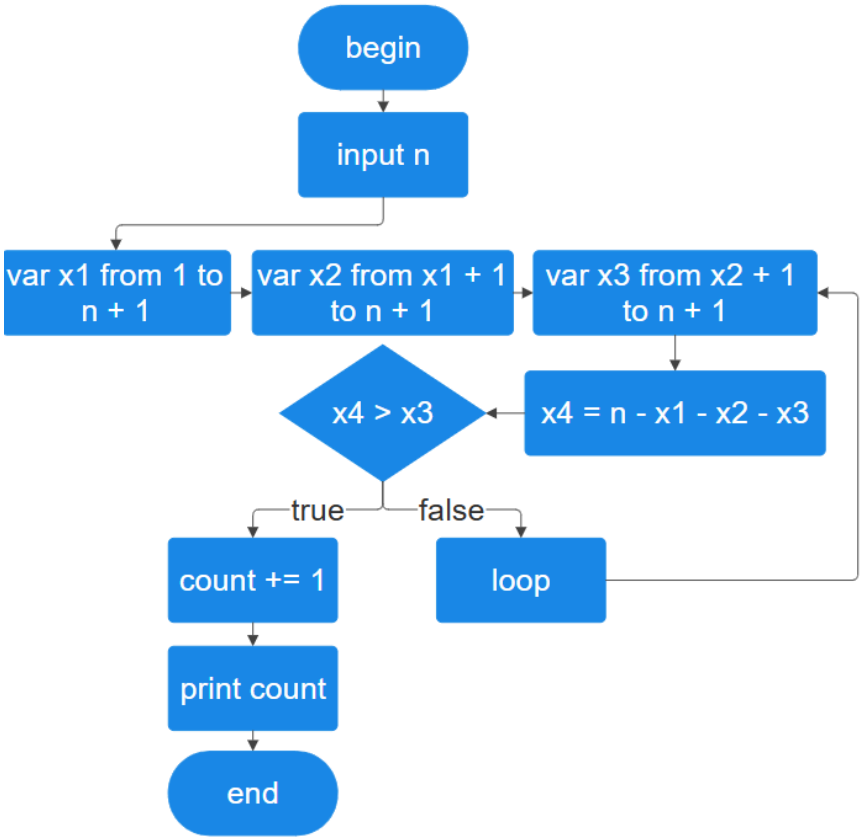

### 2. Fibonacci

```
1. import math
2.
3.
4. if __name__ == "__main__":
5.     n = int(input())
6.     if n == 1:
7.         print(1)
8.     x = 0
9.     y = 1
10.    ans = 1
11.    for i in range(1, n, 1):
12.        ans = x + y
13.        x = y
14.        y = ans
15.    print(ans)
```



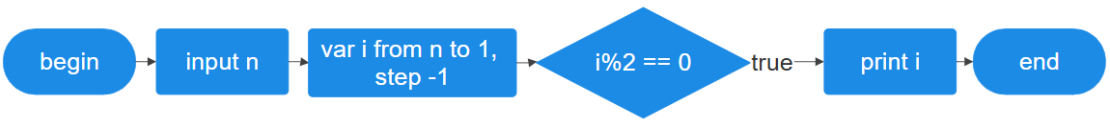
## 3. Solution

```python
import math


if __name__ == "__main__":
    n = int(input())
    count = 0

    for x1 in range(1, n + 1):
        for x2 in range(x1 + 1, n + 1):
            for x3 in range(x2 + 1, n + 1):
                x4 = n - x1 - x2 - x3
                if x4 > x3:
                    count += 1

    print(count)
```



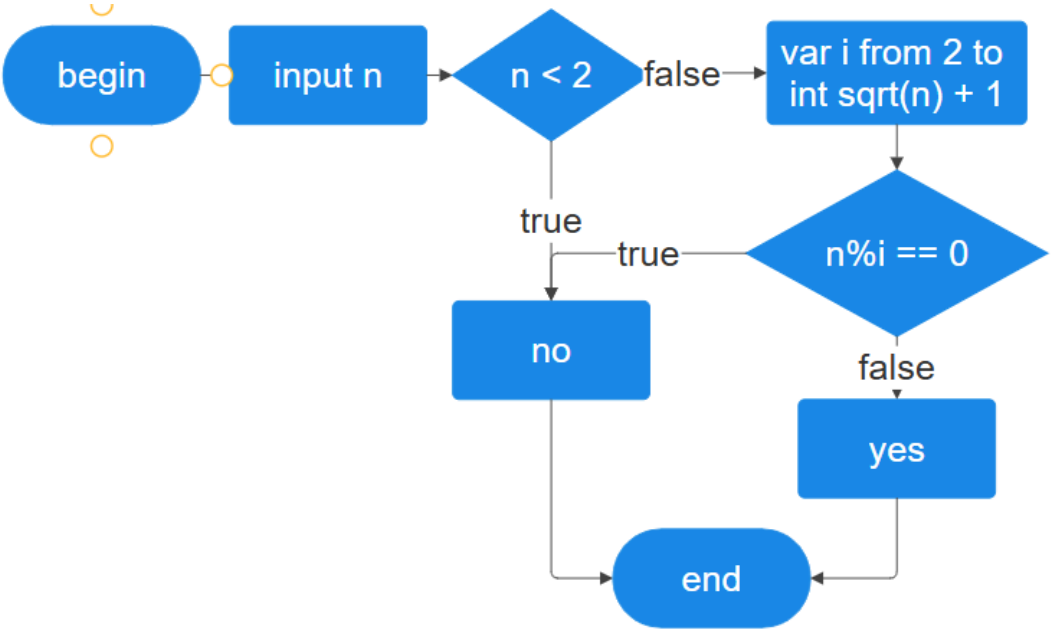

## 4. Even numbers

```python
n = int(input())

for i in range(n, 1, -1):
    if i % 2 == 0:
        print(i)
```



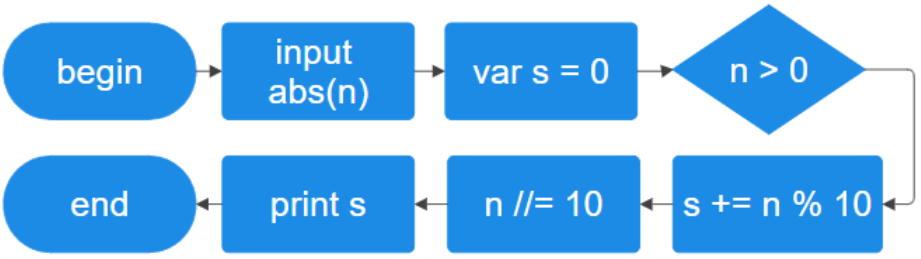
## 5. Prime number

```python
import math

n = int(input())

if n < 2:
    print("NO")
else:
    is_prime = True
    for i in range(2, int(math.sqrt(n)) + 1):
        if n % i == 0:
            is_prime = False
            break
    print("YES" if is_prime else "NO")
```



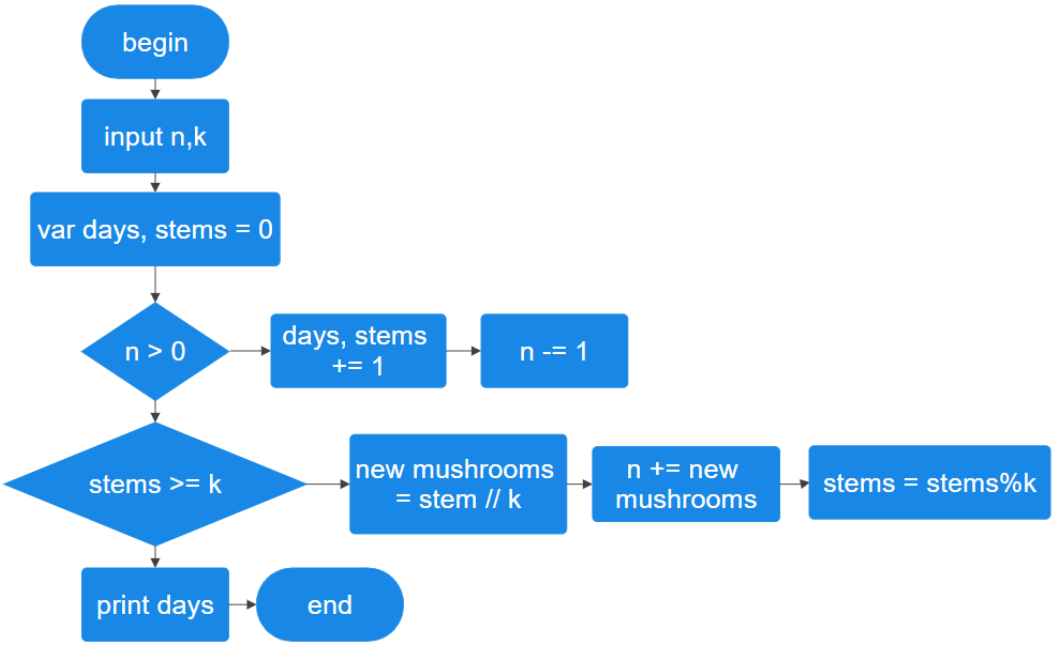

## 6. Digit sum

```python
n = int(input())
n = abs(n)
s = 0
while n > 0:
    s += n % 10
    n //= 10

print(s)
```



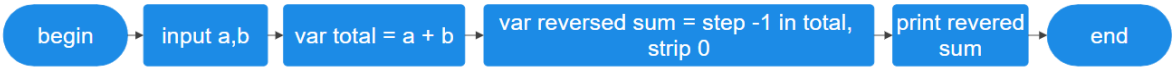
## 7. Mushroom exchange

```python
n, k = map(int, input().split())
days = 0
stems = 0

while n > 0:
    days += 1
    n -= 1
    stems += 1
    if stems >= k:
        new_mushrooms = stems // k
        n += new_mushrooms
        stems = stems % k
print(days)
```



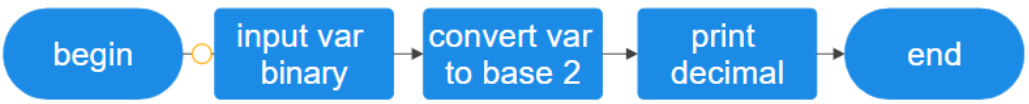

## 8. Reverse

```python
a, b = map(int, input().split())
total = a + b
reversed_sum = str(total)[::-1].lstrip('0')
print(reversed_sum)
```




## 9. Binary to decimal

```python
binary = input()
decimal = int(binary, 2)
print(decimal)
```



## III. Lab - week 05 report - Building & Customizing a portfolio website

### Personalize the header & inserting an image

```
    <title>Tran Minh Quang</title>
    <link rel="stylesheet" href="style.css">
</head>
<body>
    <div class="container">
        <!-- Header Section -->
        <div class="header">
            <img src="images.jpg" alt="Profile picture of Tran Minh Quang" style="width:150px; height:150px; border-radius:50%;">

            <h1>Tran Minh Quang</h1>
            <p><strong>Aspiring Web Developer</strong></p>
            <p>Building amazing web experiences with clean code and creative solutions</p>
        </div>
```

Tran Minh Quang

**Aspiring Web Developer**

Building amazing web experiences with clean code and creative solutions

### About Me & Contact Information section

```
    <!-- Contact Information -->
    <div class="contact-info">
        <h2>Contact Information</h2>
        <p><strong>📧 Email:</strong> <a href="hereplaceholder8@gmail.com">hereplaceholder8@gmail.com</a></p>
        <p><strong>📱 Phone:</strong> 0946514455</p>
        <p><strong>📍 Location:</strong> Hanoi, Vietnam</p>
        <p><strong>🌐 Website:</strong> <a href="N/A" target="_blank">N/A</a></p>
    </div>

    <!-- About Me Section -->
    <div>
        <h2>About Me</h2>
        <p>I am a passionate web developer with 3+ years of experience creating dynamic and responsive websites. I love solving complex
        <p>I like sleeping at the weekends.</p>
        <p>"Professional" Umamusume and Genshin player.</p>
    </div>
```

**Contact Information**

📧 **Email:** hereplaceholder8@gmail.com

📱 **Phone:** 0946514455

📍 **Location:** Hanoi, Vietnam

🌐 **Website:** N/A

**About Me**

I am a passionate web developer with 3+ years of experience creating dynamic and responsive websites. I love solving complex problems and turning ideas into reality through code. When I'm not coding, you can find me exploring new technologies, reading tech blogs, or enjoying outdoor activities.

I like sleeping at the weekends.

"Professional" Umamusume and Genshin player.

## List of skills

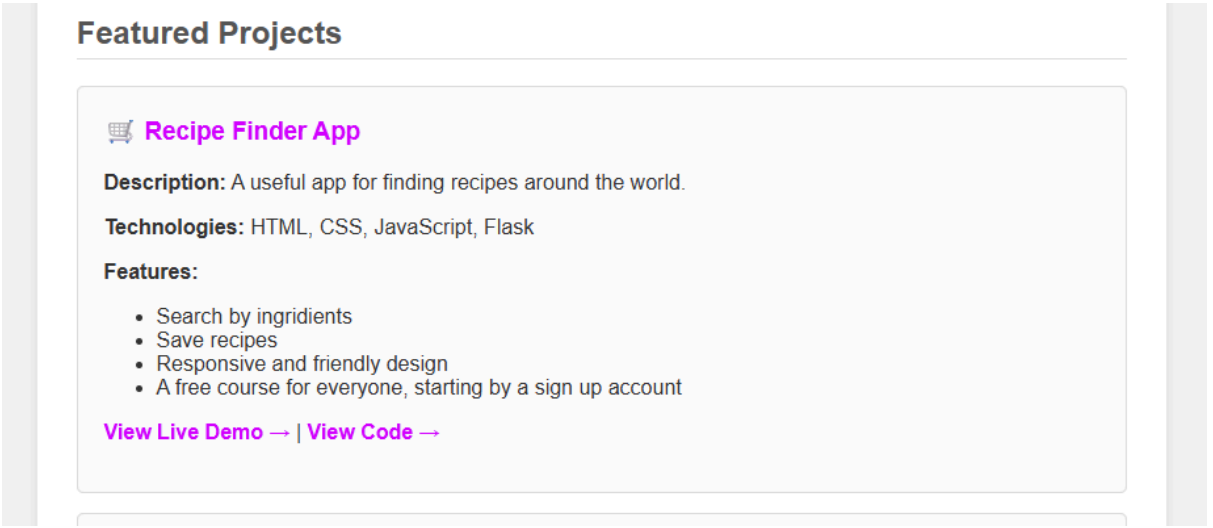
```html
<!-- Skills Section -->
<div>
    <h2>Technical Skills</h2>
    <ul class="skills-list">
        <li>HTML5</li>
        <li>CSS3</li>
        <li>JavaScript</li>
        <li>Python</li>
        <li>React</li>
        <li>Node.js</li>
        <li>Git</li>
        <li>MySQL</li>
        <li>Docker</li>
        <li>AWS EC2</li>
        <li>Bootstrap</li>
    </ul>
</div>
```


## Color scheme

```css
.project h3 {
    color: #d400ff;
    margin-top: 0;
}

.project-link {
    color: #d400ff;
    text-decoration: none;
    font-weight: bold;
}

.project-link:hover {
    text-decoration: underline;
}

.education-item {
    margin: 15px 0;
    padding: 16px;
    background-color: #f0f8ff;
    border-left: 4px solid #d400ff;
}

.experience-item {
    margin: 15px 0;
    padding: 16px;
    background-color: #fff8f0;
    border-left: 4px solid #d400ff;
}
```

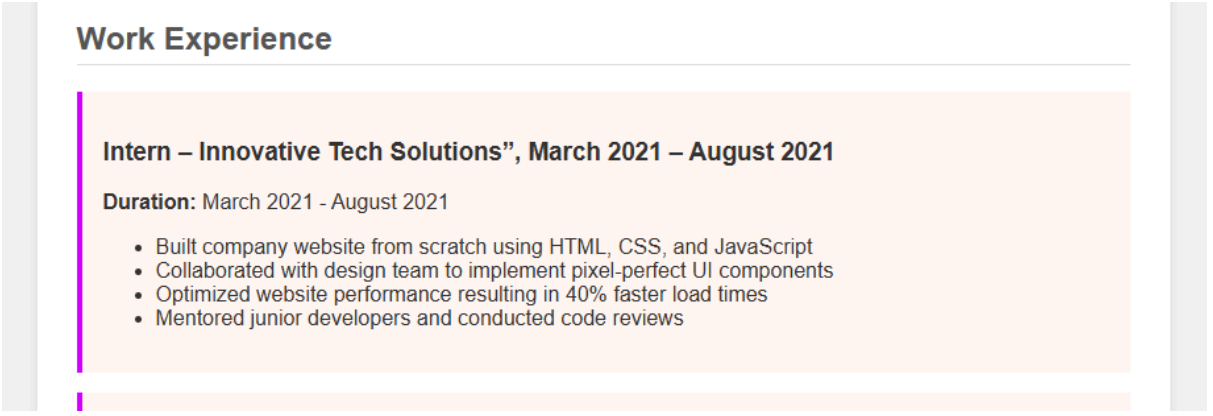
## New project card

```html
<!-- Projects Section -->
<div>
    <h2>Featured Projects</h2>

    <div class="project">
        <h3>🛒 Recipe Finder App</h3>
        <p><strong>Description:</strong> A useful app for finding recipes around the world.</p>
        <p><strong>Technologies:</strong> HTML, CSS, JavaScript, Flask</p>
        <p><strong>Features:</strong></p>
        <ul>
            <li>Search by ingridients</li>
            <li>Save recipes</li>
            <li>Responsive and friendly design</li>
            <li>A free course for everyone, starting by a sign up account</li>
        </ul>
        <p><a href="#" class="project-link">View Live Demo →</a> | <a href="#" class="project-link">View Code →</a></p>
    </div>
```



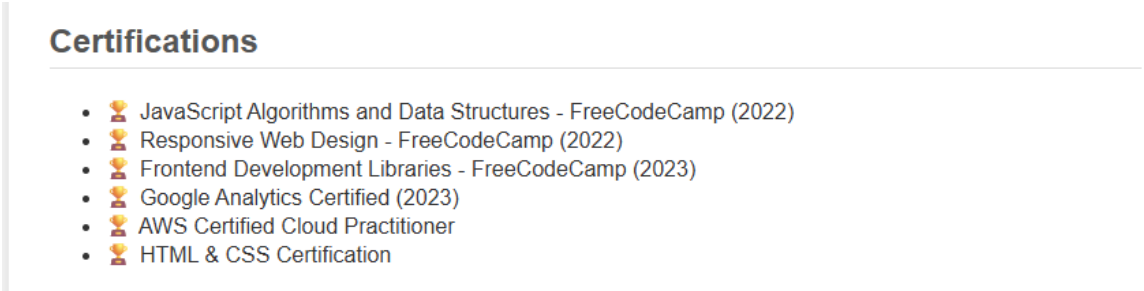

## Add work experience

```html
    <!-- Experience Section -->
    <div>
        <h2>Work Experience</h2>

        <div class="experience-item">
            <h3>Intern – Innovative Tech Solutions", March 2021 – August 2021</h3>
            <p><strong>Duration:</strong> March 2021 - August 2021</p>
            <ul>
                <li>Built company website from scratch using HTML, CSS, and JavaScript</li>
                <li>Collaborated with design team to implement pixel-perfect UI components</li>
                <li>Optimized website performance resulting in 40% faster load times</li>
                <li>Mentored junior developers and conducted code reviews</li>
            </ul>
        </div>
```



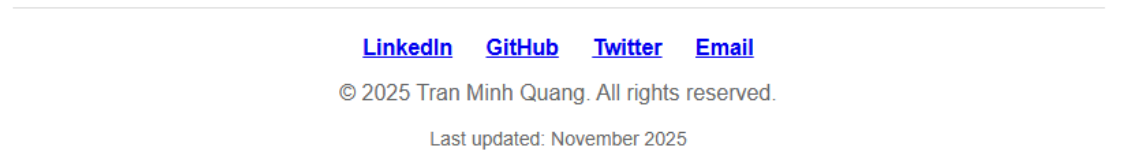
## Append certifications

```
<!-- Certifications Section -->
<div>
    <h2>Certifications</h2>
    <ul>
        <li>🏆 JavaScript Algorithms and Data Structures - FreeCodeCamp (2022)</li>
        <li>🏆 Responsive Web Design - FreeCodeCamp (2022)</li>
        <li>🏆 Frontend Development Libraries - FreeCodeCamp (2023)</li>
        <li>🏆 Google Analytics Certified (2023)</li>
        <li>🏆 AWS Certified Cloud Practitioner</li>
        <li>🏆 HTML & CSS Certification</li>
    </ul>
</div>
```



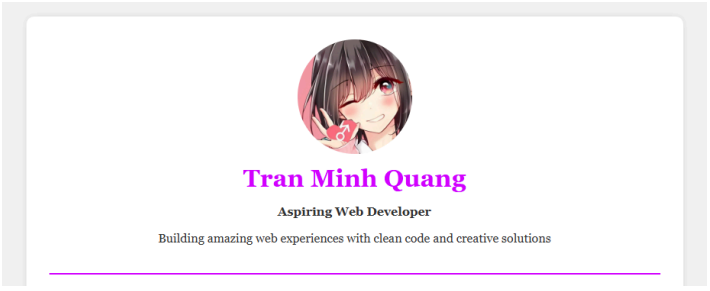

## Add hyperlinks

```
    <!-- Footer -->
    <div class="footer">
        <div class="social-links">
            <a href="https://linkedin.com" target="_blank">LinkedIn</a>
            <a href="https://github.com" target="_blank">GitHub</a>
            <a href="https://twitter.com" target="_blank">Twitter</a>
            <a href="hereplaceholder8@gmail.com">Email</a>
        </div>
        <p style="margin-top: 15px;">© 2025 Tran Minh Quang. All rights reserved.</p>
        <p style="font-size: 14px;">Last updated: November 2025</p>
    </div>
```




## Customize fonts and text size

```
body {
    font-family: Georgia, 'Times New Roman', Times, serif, sans-serif;
    margin: 0;
    padding: 30px;
    background-color: #f4f4f4;
    color: #333;
}
```

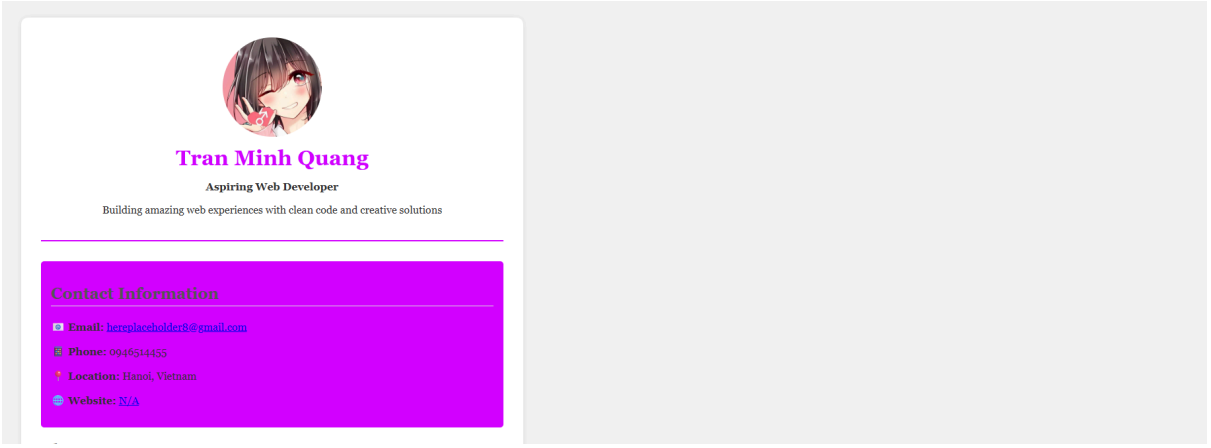


## Adjust spacing with margin and padding

```css
.project {
    border: 1px solid #ddd;
    padding: 25px;
    margin: 25px 0;
    border-radius: 5px;
    background-color: #fafafa;
}
```

```css
.education-item {
    margin: 20px 0;
    padding: 20px;
    background-color: #f0f8ff;
    border-left: 4px solid #d400ff;
}

.experience-item {
    margin: 20px 0;
    padding: 20px;
    background-color: #fff8f0;
    border-left: 4px solid #d400ff;
}
```

```css
.container {
    max-width: 700px;
    margin: 30 auto;
    background-color: white;
    padding: 30px;
    border-radius: 10px;
    box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
}
```



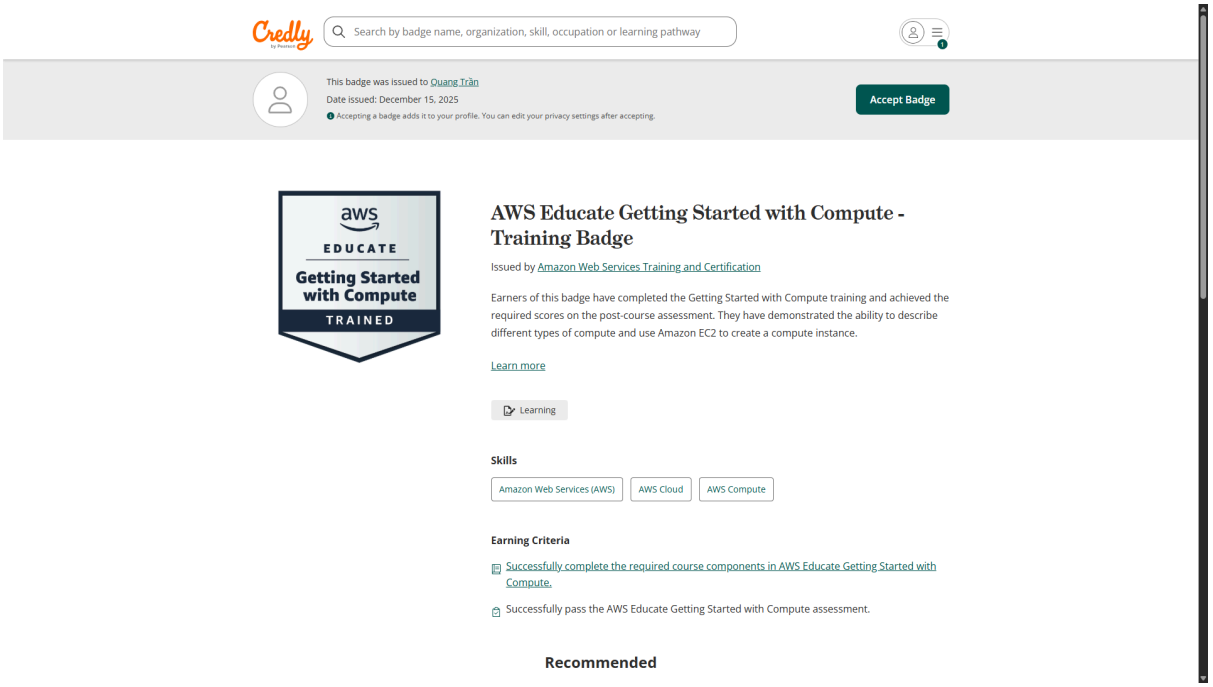

## Add a new section

```html
<div>
    <h2>Hobbies</h2>
        <ul>
            <li>Playing Umamusume, Genshin and Roblox everyday</li>
            <li>Learning Blender</li>
            <li>Go to the gym almost everyday</li>
        </ul>
</div>
```

## Hobbies

- Playing Umamusume, Genshin and Roblox everyday
- Learning Blender
- Go to the gym almost everyday

## IV. Lab - week 06 report - AWS Educate - Getting Started with Compute




## V. Extra A - Student Gradebook CLI report

### 1. Objectives

- Managing student courses and grades through a Python command line application.
- Integrating knowledge of Python data structures, file handling, input validation and basic calculations.
- In order to guarantee that data is saved between sessions, persistent storage is provided using a.json file.
- Simulating a real world situation when a student wants to manage their grades, courses and GPA calculation.

### 2. Design

- The project includes 3 files: A .py file with source code, a .json file used to store data and a README.md, which provides a guide on how to use the application.
- Structure:

```
project
└── gradebook.py
└── gradebook.json
└── README.md
```

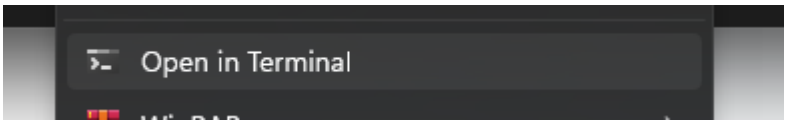
- The Python application is run by 9 different function modules:
    + `import json` allows Python to work with .json data using the built-in module.
      `import os` allows Python to interact with the operating system.
      After that, it set the .json file name to a variable.
      `GRADEBOOK_FILE = 'gradebook.json'`
    + `def load_data()` loads data from .json.
    + `def save_data(data)` saves input data into .json.
      `json.dump(data, f, indent=4)` rewrites the data in .json format with 4 spaces to ensure it is readable for Python.
    + `def add_course(data)` adds a new course into the gradebook.
    + `def update_course(data)` updates a course from the gradebook.
    + `def delete_course(data)` deletes a course from the gradebook.
    + `def view_gradebook(data)` viewing all saved courses in gradebook.
    + `def calculate_gpa(data)` calculate GPA from input.
      The GPA by semester and overall is calculated by dividing the sum of semester/total points to the sum of semester/total credits, the result is rounded up to 2 digits.
    + `def score_to_gpa(score)` converts course points into grade points for GPA calculating.
      The GPA conversion is based on the table below:

| Percentage | Letter Grade | GPA |
|---|---|---|
| 93% -100% | A | 4.0 |
| 90% - 92% | A- | 3.7 |
| 87% - 89% | B+ | 3.3 |
| 83% - 86% | B | 3.0 |
| 80% - 82% | B- | 2.7 |
| 77% - 79% | C+ | 2.3 |
| 73% - 76% | C | 2.0 |
| 70% - 72% | C- | 1.7 |
| 67% - 69% | D+ | 1.3 |
| 63% - 66% | D | 1.0 |
| 60% - 62% | D- | 0.7 |
| 0% - 59 | F | 0.0 |

+ `def main()` makes the user interface of the application. The application loads data from .json upon executing and saves data when choosing exit which is option 6.

3. **How to open**

   Right-clicking the file contains .py and .json and open the file in the terminal.




   In the command line, type `python gradebook.py` and press Enter.

```
Windows PowerShell
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Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Users\illum\OneDrive\Tài liệu> python gradebook.py
```

   Alternatively, open the file in python IDLE and click Run.


4. **Testing**

   If done correctly, the user interface should be this:

```
PS C:\Users\illum\OneDrive\Tài liệu> python gradebook.py

Gradebook Menu:
1. Add course
2. Update course
3. Delete course
4. View gradebook
5. Calculate GPA
6. Exit
Choose an option:
```

The menu has 6 options.
Pick option 1: Add course.
For example, you are adding a course named AU002: Chinese 2 in Semester 3 with 2 credits and 90 points.
After each input, press Enter to continue.

```
Gradebook Menu:
1. Add course
2. Update course
3. Delete course
4. View gradebook
5. Calculate GPA
6. Exit
Choose an option: 1
Course code: AU002
Course name: Chinese 2
Credits: 2
Semester: 3
Score (0-100): 90
Course added.
```

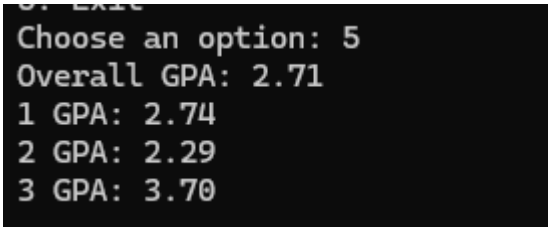
After a course is added, type 4 to view your gradebook.
There is already a sample in .json with 2 more semesters with different courses and grades:

```
Choose an option: 4
Code      Name                Credits Semester  Score
AU003     General English     45      1         69.0
AU004     General English 2   3       1         70.0
AU008     Sustainable Development3       1         84.0
AU010     Liberal Arts        30      1         86.0
AU005     Introduction to IT  30      1         80.0
AU014     Physical Education  48      1         97.0
AU001     Chinese             2       2         76.0
AU007     Design Thinking     2       2         80.0
AU009     Sustainable Development 21       2         73.0
AU011     Liberal Arts 2      2       2         81.0
AU006     AI Application      2       2         71.0
TEC001    Fundamental Programming3       2         67.0
AU015     Physical Education 22       2         100.0
AU002     Chinese 2           2       3         90.0
```

Example:

| Code | Name | Credits | Semester | Score |
|---|---|---|---|---|
| AU002 | Chinese 2 | 2 | 3 | 90.0 |

When a course is present, choose option 5 to calculate GPA in each semester.




Semester 1's GPA is 2.74, Semester 2's GPA is 2.29 and Semester 3's GPA is 3.70, while overall GPA is 2.71.

**Other testings:**

| **Cases** | **Input** | **Output** |
|---|---|---|
| Duplicate course | AU002 | "Course code already exists." |
| Invalid grade | Score (0-100): -67 | "Invalid score." |
| Update course | New score (0-100): 99 | "Course updated." |
| Delete course | AU002 | "Course deleted." |
| Empty gradebook | After deleting all courses, choose 4. | "Gradebook is empty." |