Software Development with Python and AI
12 week - Part-Time

Overview of the course:

Our Bootcamp is a 12-week, part time course. It focusses on the principles of coding and applies it to both Python front-end web development and back-end database development with a focus on website functionality.

We look at software development methodologies and how these are used in industry. Learners also get the opportunity to implement these in a group project, and solo project.

Mapped to Level 3 - you will learn to create websites, Python games and find out what it's like working in the Tech industry. You will learn Intermediate programming skills covering complex concepts for application development using Python.

You will also learn effective use of Large Language Model applications such as ChatGPT as a development tool. You will explore the benefits and restrictions of using 'No-Code' solution building applications.

Eligibility:

This Bootcamp is aimed at anyone wanting to gain or enhance their software development skills and wants to gain valuable experience on the technologies and tools businesses are using to build effective Python web applications.

- 19+
- Employed
- Unemployed
- Self employed

Details:

✓ **Part-time remote course, running specific days over a 12-week period 09:30am - 15:00pm**

✓ **FREE if you are a resident in Cheshire and Warrington and unemployed/ self employed**

✓ **Funded up to 90% if you're employed in a Cheshire and Warrington company**

✓ **120 Hours of hands on Software Development with Python and AI Experience**

✓ **Guaranteed interview if you are unemployed with hiring employer upon completion**

✓ **Hear from Employer speakers during the course**

What is covered?

Week One (2 days)

- Induction
- Introduction to Coding course
- Ice breakers
- Set up Python
- Introduction to Visual Studio Code as an IDE and the terminal
- Data, variables, properties, and methods in Python
- Python strings: properties and methods

Week Two (2 days)

- Inputs, casting, and logical/arithmetic operators in Python
- Selection; IF ELIF statements, comparison operators, logical operators
- Create random generator algorithm in Python
- Lists, list methods in Python, storing data, accessing, and mutating data in a list

Week Three (2 days)

- Iteration: 'for' and 'while' loops
- Hangman Python game; flowcharting, Pseudocode, and code-along demonstration

Week Four (2 days)

- Introduction to functions; simple functions, arguments, parameters
- Examine variable scope related to functions, loops, etc.
- Higher/Lower Python game; flowcharting, Pseudocode, and code-along demonstration

Week Five (2 days)

- AI For Code Assist
- Introduction to Large Language Models AI (LLM) and its capabilities as an AI powered large-language model.
- Integrate into practice
- Code Along Practice
- Group discussions and reflection
- Group activities on LLMs ongoing usage for this course
- Summarise benefits of integrating LLMs into JS routines
- Practical applications and tutorials on how to integrate LLM AI into solutions

Week Six (2 days)

- Introduction to 'No-Code' development
- Overview of No-Code platforms
- Create a free-tier account and choose templates. Customise templates
- Add functionality using 'Drag and Drop' controls within the online platform
- Preview and publish
- You will highlight websites to the group to evaluate the effectiveness of its layout, content, design, User Experience,
- Troubleshooting

Enquire today!

What is covered?

Week Seven (2 days)

- Fundamentals of how the web works.
- HTML – elements, tags and best practices.
- CSS – selectors, properties, Flexbox, transitions and animations
- Simple webpage structure (navbar, banners, hero image, sections, footer, etc.

Week Eight (2 days)

- Reasons and challenges for Web Scraping
- Scrape HTML content from a page – static, hidden, dynamic webpages
- Parse HTML code using Beautiful Soup
- Find elements by ID, Class, etc

Week Nine (2 days)

- Introduction to Flask – installation, basic syntax and file structure
- Create a base application using HTML templates (jinja)
- Refine the look of the HTML with CSS and Flexbox
- Troubleshooting errors

Week Ten (2 days)

- Introduction to Classes and Object-Oriented Programming (OOP)
- Introduction to OOP team challenge and project - creating a mini-quiz web app, in Python
- Explain Trello for group collaboration project management

Week Eleven (2 days)

- Installation of SQLAlchemy and connecting to a database
- Querying a database, filtering, dealing with Large Datasets, SQL statements
- Creating, Reading, Updating and Deleting data from a database (CRUD operations)

Week Twelve (2 days)

- Recap of the Python Intermediate programming so far (OOP, SQL, SQLAlchemy, CRUD operations)
- Creating a database
- Interacting with a database
- HTML/CSS page to display data.