T Level Software Development

Welcome to the Software Development T-Level. We will be delighted to welcome you onto the course in September and help you take the next step towards a great career.

You will benefit greatly from doing a little study of your own ready for the start of term. Free online courses in any programming language will help you to start understanding the syntax and format of languages. Researching computer components and how they work, networking basics, and cyber security will help you.

You will need a PC or laptop at home to be able to complete the homework and assignments that are set throughout the year. Ideally this should be able to run Microsoft office 365 (supplied by the college).

We have added lots of information about the course on the college website:
Software Development (T-Level) (wsc.ac.uk)

*Please take time to review this information for **Software Development T-Level** and start to get a clear understanding of what you will be doing in the first and second year of the course.*

Summer Work Task

Task One:

A key part to this new and exciting course is the 315hrs industry placement

Industry placement will be arranged with the support of the college, but it is also part of the college's core values that you take ownership of your own learning and options for the industry's placement. Please start to research what companies there are in your own local area. What type of business would you like to work in? Software Development can be found in many companies and in every sector of the workplace. Some companies will have their own IT support team, and others will outsource this to IT support companies to provide this service.

List three companies (name, company website address, address and phone number) **you would like to contact for your industry placement that is in your local area or that you would be able to travel to when on work placement.** *TIP "Have a look at company websites to see what they do and make contact with them to find out what IT support they have". Ask family and friends if they know anyone who works in IT.*

Feel free to add more than three placements in an excel spreadsheet that is similar to the following sections:

Company	Address:	Phone/Email:	Contacted:	Heard Back:	Offered/Declined

The more you contacted and the sooner you can find a placement to start the more easier it is to complete your mandatory work placement hours, the course has been updated that you are allowed to do 50% of your hours remote and 50% where you hours must be complete on site.

Task Two:

All level 3 courses require the student to have key skills in research and evaluating information. Please review the link below which gives details of the 8 core knowledge modules you will be studying in your first year of the course. Software Development (T-Level) (wsc.ac.uk)

List the 8 knowledge elements and write a short statement about what you think each means.

Task Three: T-Level Year 1 Summer Project: Create a Checkout System

Please just try your best in this section. Do not worry too much if your solution does not work; this is just to get an understanding of your current programming abilities and see what areas you need to develop, so please just try your best!

Project Overview:

Your task over the summer is to design and create a **Checkout System** for a small shop using **Python**. You will go through the process of planning, designing, implementing, and (if you choose) testing your system.

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Required Tasks:

1. Design the Logic

a. Choose **one** of the following:
   i. Draw a **Flowchart** that shows the process of the checkout system.
   ii. Write **Pseudocode** that outlines the logic behind the system.
b. Your design should include:
   i. Adding items to a cart
   ii. Calculating a total
   iii. Applying any discounts (optional)
   iv. Taking a payment
   v. Showing change or confirming card payment

2. Plan Your Development

a. Create a **Gantt Chart** showing how you plan to complete your project.
b. Include stages like:
   i. Requirements/Planning
   ii. Design
   iii. Development
   iv. Testing
   v. Improvements (optional)

3. Develop the Checkout System

a. Write a **Python program** that:
   i. Let's a user select products
   ii. Calculates a running total
   iii. Accepts payment
   iv. Displays change or confirmation
b. The interface can be **text-based (CLI)** or use a simple **GUI** (optional).

Extension Tasks (Optional but Encouraged):

4. Test Your System

a. Write simple **test cases** for your program (e.g., What happens if no items are added? What if a user pays too little?).
b. Record your results in a simple table.

5. Improve Your Program

a. Add **extra features**, such as:
   i. Discounts or promo codes
   ii. Ability to remove items
   iii. Product categories
   iv. Save receipts to a file

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Submission Requirements:

- PDF of your **Flowchart or Pseudocode**
- Screenshot or digital version of your **Gantt Chart**
- Your **Python code file** (.py)
- (Optional) PDF with **testing results** and a short summary of **improvements made**

Deadline Date:	**Email document of all 3 tasks completed.**
25th August	Submit by email to Michael Harding Michael.Harding@easterneducationgroup.ac.uk

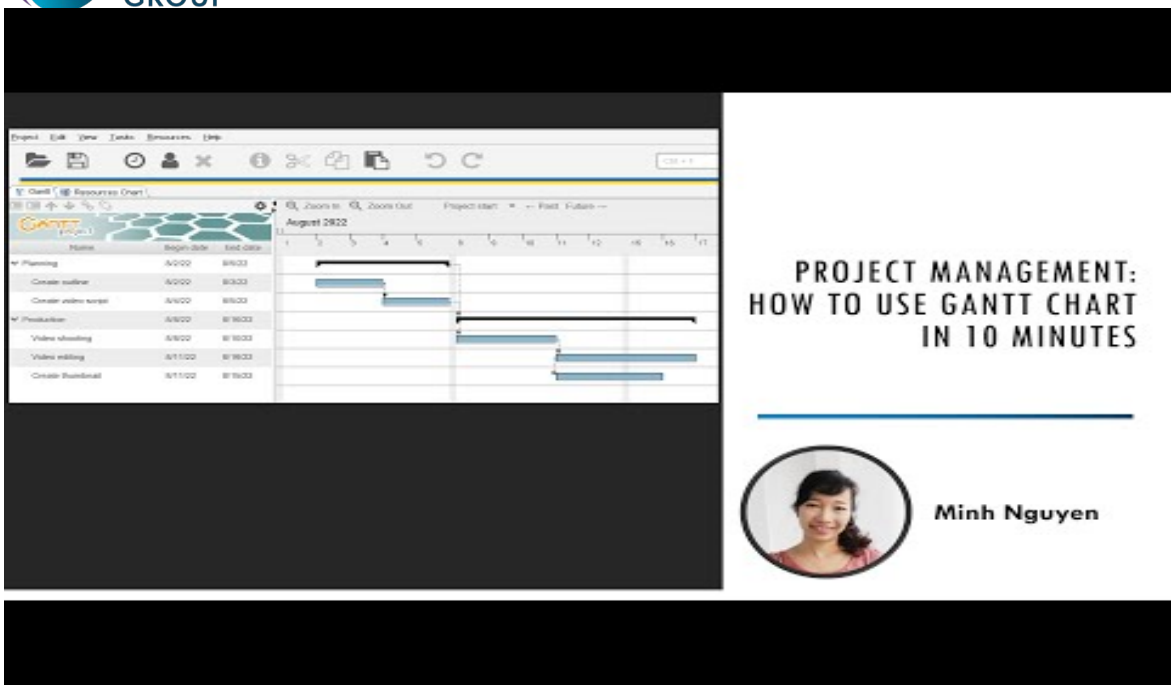
Useful Websites

Course webpage: Software Development (T-Level) (wsc.ac.uk)
https://www.learnpython.org/
https://www.w3schools.com/python/
https://developers.google.com/edu/python
https://learn.microsoft.com/en-us/shows/intro-to-python-development/python-for-beginners-1-of-44-programming-with-python

Useful Tutorials:
Python: https://www.youtube.com/watch?v=K5KVEU3aaeQ&t=1s

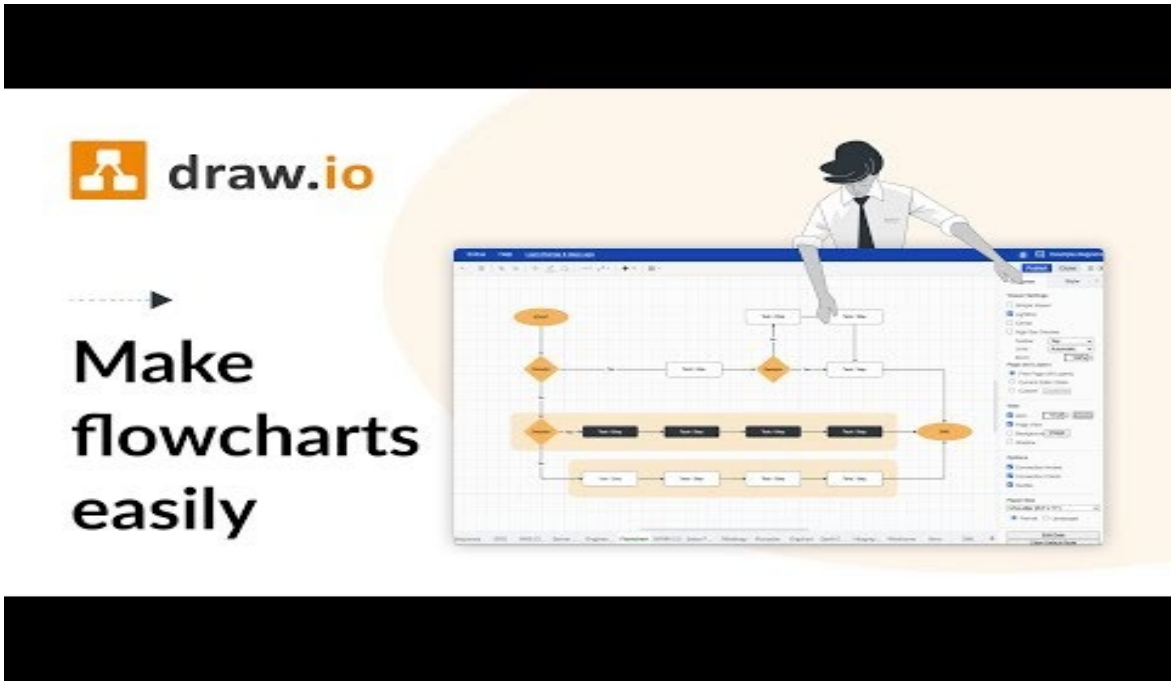
Gannt Project: https://www.youtube.com/watch?v=htms1aOv9v0&t=54s

WSC WEST SUFFOLK COLLEGE SIXTH FORM



Draw.io/Flowcharts:

https://www.youtube.com/playlist?list=PLX6xdk86h_0ySOXbaMnr4f1JFq_xUiP5T



Staff Contact

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