

College Taster Pack

**T Level: Digital Production,  
Design and Development**



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## Welcome

Welcome to Abingdon & Witney College and the **T Level: Digital Production, Design and Development** course. We look forward to you starting your study programme with us in September 2021.

**Computing and IT** is one of our curriculum areas, alongside Motor Vehicle, Engineering and Life Sciences, that sit within the faculty called **Technology**.

We have put this pack together for you to prepare for your transition to college and to experience the type of learning and projects you will undertake on your course.

If you have any questions (no question too big or small), please email our please Roger Christiansen at [roger.christiansen@abingdon-witney.ac.uk](mailto:roger.christiansen@abingdon-witney.ac.uk).

### Abingdon and Witney Digital T Level Team Members

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# T Level Technical Qualification in Digital: Digital Production, Design and Development– initial assessment project

## Overview

This is a scenario which AWC will use to assess your Python skills when you start College. We're not expecting you to create the perfect solution – this is an exercise in helping us to assess where you are with your coding skills, so that we can work out how best to support you.

If you are not particularly confident in coding, the key thing is to approach this project in a systematic way. Better to have a working solution that does some of the requirements, than something which does not work at all.

If you are confident in coding, make sure you create a solution which meets the key requirements first. Then have a go at improving and enhancing it.

Feel free to develop and enhance this solution (see Task 3 stretch activities) as you see fit. The key is to have a go at creating code to meet a specific requirement, and to have some fun at the same time.

## Scenario

You are asked to use your software design, development, testing and evaluation skills to produce a program that meets the client's requirements.

A local travel agent has commissioned you as a Junior Software Developer to write a program. The program will be used by staff to calculate the costs of converting pounds sterling (GBP) into another currency.

The travel agent only converts GBP into:

- American Dollars (USD)
- Euros (EUR)
- Brazilian Real (BRL)
- Japanese Yen (JPY)
- Turkish Lira (TRY).

You need to create a program that:

- allows the travel agent to enter the amount in pounds sterling (GBP) that the customer wishes to convert
- allows the travel agent to choose the currency requested by the customer
- converts the amount entered in GBP to the chosen currency
- calculates a transaction fee depending on how much in GBP the customer converts
- calculates the total cost (amount to convert plus transaction fee) in GBP of converting to the chosen currency
- applies a discount of 5% to the total cost if the customer is also a member of staff.

You must design, implement and test your program. You must also justify and evaluate your decisions.

When you are designing and developing the solution ensure that:

- standard programming conventions have been followed
- it is efficient and robust
- it is user friendly
- it provides accurate currency conversions
- all currency values are displayed to two decimal places
- there is output to show:
  - how much chosen currency the customer receives
  - the transaction fee
  - the discount amount
  - the total cost.

### Information

You are provided with this information to use when designing and developing your program:

- exchange rates
- conversion limit
- transaction fees.

### Exchange rates

Currency	Exchange Rate (1 GBP = )
American Dollars (USD)	1.40
Euros (EUR)	1.14
Brazilian Real (BRL)	4.77
Japanese Yen (JPY)	151.05
Turkish Lira (TRY)	5.68

### Conversion Limit

Maximum of 2500 GBP can be converted in one transaction.

### Transaction Fees

Amount	Fee
Up to 300 GBP	3.5%
Over 300 GBP	3 %
Over 750 GBP	2.5%
Over 1000 GBP	2%
Over 2000 GBP	1.5%

## Task 1: create Python code to deliver the scenario

Please note:

- try to address as many of the requirements as you can
- better to have a working solution that does most of the requirements than to get too stressed if you cannot complete everything

### Resources

#### *IDE*

Use the latest version of Python 3.9 if possible. We recommend using Microsoft Visual Studio Code for your programming environment (IDE). Download this for free from: [Download Visual Studio Code - Mac, Linux, Windows](#)

This is what we'll be using at College.

You are, of course, welcome to use a different IDE.

#### *Folders*

Make sure you have somewhere to save your coding work. The best way to do this is to setup a folder on your hard disk or on a USB drive, and use cloud storage as backup and as a means to download your code from multiple devices (e.g. Microsoft One Drive or Google Drive). When you start College you'll be given a Microsoft Office 365 which gives you 1TB of cloud storage.

Unfortunately Visual Studio Code won't let you develop and run code from cloud storage.

#### *Help and support*

Feel free to use whatever you need to help build your Python skills – e.g. [Python Tutorial \(w3schools.com\)](#)

However if you download code from the web, please make sure you fully understand how it works.

## Task 2: Review

Create a simple review of how well you think you have met the requirements. We will discuss this when you start at College in September.

<b>Specific Requirements</b>	<b>How well have you met this ? (e.g. not at all, partially, completely)</b>	<b>Comments</b>
allows the travel agent to enter the amount in pounds sterling (GBP) that the customer wishes to convert		
allows the travel agent to choose the currency requested by the customer		
converts the amount entered in GBP to the chosen currency		
calculates a transaction fee depending on how much in GBP the customer converts		
calculates the total cost (amount to convert plus transaction fee) in GBP of converting to the chosen currency		
applies a discount of 5% to the total cost if the customer is also a member of staff.		

General Requirements	How well have you met this ? (e.g. not at all, partially, completely)	Comments
standard programming conventions have been followed		
It is efficient and robust		
It is user friendly		
It provides accurate currency conversions		
all currency values are displayed to two decimal places		
there is output to show: <ul style="list-style-type: none"> <li>• how much chosen currency the customer receives</li> <li>• the transaction fee</li> <li>• the discount amount</li> <li>• the total cost</li> </ul>		

### Task 3: Stretch activities

Here are some additional ideas to build your skills. Either create a new project or incorporate these in your selected project above.

- Add additional currencies – e.g. bitcoin
- Can you find out how to access the latest currency exchange rates over the internet ?
- Think about how you could improve the user interface. There are various GUIs available for Python (e.g. Tkinter). Or, have a go at using Python Flask – this allows you to use HTML as your user interface