

Data Academy HLT

Tasks

GLH

Core Learning - Python fundamentals	120 - 240 minutes
Portfolio Task - Python fundamentals	60 - 120 minutes
Flipped Learning - Loops and functions	30 minutes
Enrichment - file handling and, try and except	60 minutes
Technology - Web Accessibility	60 minutes
Wellbeing - Exercise	60 minutes
Soft Skills - Office Etiquette	60 minutes
Employability - Microsoft Office 365	60 minutes

*Times are a rough guideline



Core Learning 1 - Calculator

Write a program that allows user to enter two numbers, and operator and then completes the calculation. Follow the instructions below:

1. Ask the user to pick a number
2. Ask the user to pick a second number
3. Ask the user to pick an operator
4. Create an IF statement to carry out the math operation using the users choice of numbers and choice of operator

REMINDER

Must check marking criteria
Use examples from lesson
Once complete, submit the ipynb file via Teams

Marking Criteria – calculator

	Pass	Merit	Distinction
• Syntax	<ul style="list-style-type: none">Attempts to use Python syntax with some success	<ul style="list-style-type: none">Python syntax is largely accurate with some errors	<ul style="list-style-type: none">Python syntax is consistently accurate and appropriate to the task
• Code	<ul style="list-style-type: none">Hard codes in firstValue, secondValue, and operatorUses if statements to analyse the operator and provides an answer to consoleUses the basic 4 operators, (+, -, /, *)	<ul style="list-style-type: none">Accepts prompts for firstValue, secondValue, and an operationDoes not handle errors when the user inputs invalid values (input a word instead of a number, input something that isn't one of the 5 symbols for operators)Uses if statements to identify the symbol being usedPoints to methods that print the answer to consolePrints the correct value to the screen in any format	<ul style="list-style-type: none">Accepts prompts for firstValue, secondValue, and an operationHandles errors when the user inputs invalid values (input a word instead of a number, input something that isn't one of the 5 symbols for operators)Correctly builds a method for each operatorPrints the correct value for the sum being requested of the program



Core Learning 2 - Joke display

Write a program that asks a user for their favourite number between 1 and 100 and then tells them a joke based on the number. You should use a minimum of 3 jokes. Follow the instructions below:

1. Ask the user to pick a number and store against variable
2. Create an IF statement which uses logical operators which prints out a joke based on the number the user picked

Marking Criteria – Joke display

	Pass	Merit	Distinction
Syntax	<ul style="list-style-type: none">Attempts to use Python syntax with some success	<ul style="list-style-type: none">Python syntax is largely accurate with some errors	<ul style="list-style-type: none">Python syntax is consistently accurate and appropriate to the task
Code	<ul style="list-style-type: none">Attempts to prompt the user to input a number and store against a variableTries to create an IF statement to return a joke to user	<ul style="list-style-type: none">Successfully prompts the user to input a number and store against variableCreates an IF statement with the use of logical operators to print out the appropriate joke	<ul style="list-style-type: none">Successfully turns this program into a function https://www.w3schools.com/python/python_functions.asp



Core Learning 3 - ATM

Main menu example
Welcome to Northern
Frock
1 - Display balance
2 - Withdraw funds
3 - Deposit funds
9 - Return card

Use nested if
statements to
help you
complete this
task

Write a program that
simulates the behaviour of a
basic ATM. Follow the
instructions below:

1. Print a main menu:
2. Prompt the user to enter an option:
3. If '1' is entered, display the current balance and return to main menu.
4. If '2' is entered, print a sub-menu with withdrawal amounts Enter an option:

Withdrawal example
Please select withdrawal
amount
1 - £10
2 - £20
3 - £40
4 - £60
5 - £80
6 - £100
7 - Other amount
8 - Return to main
menu



Core Learning 3 - ATM continued

5. If '1 to 6' is selected check that the requested withdrawal is allowed, print a message to show that the money has been withdrawn, calculate the new balance and return to main menu.

6. If '7' is selected, then prompt the user for an integer value. Check this number is a multiple of 10 and that the withdrawal is permitted, print a message to show that the money has been withdrawn, calculate the new balance and return to main menu.

7. If '3' is entered, provide another menu that will allow the user to enter an amount to deposit, return to main menu or return card. If funds are deposited, provide appropriate feedback and update the balance and return to main menu.

8. If '9' is entered, print a goodbye message and exit (break).

9. If another value is entered, print an error message and print the menu again.

Marking Criteria – ATM

	Pass	Merit	Distinction
<ul style="list-style-type: none">Syntax	<ul style="list-style-type: none">Attempts to use Python syntax with some success	<ul style="list-style-type: none">Python syntax is largely accurate with some errors	<ul style="list-style-type: none">Python syntax is consistently accurate and appropriate to the task
<ul style="list-style-type: none">Code	<ul style="list-style-type: none">Prints a menu for the userAttempts to prompt the user to enter a value to display balance or withdraw moneyIf appropriate attempts to prompt user to enter amount to withdraw	<ul style="list-style-type: none">Prints a menu for the userSuccessfully prompts the user to enter a value to display balance or withdraw moneySuccessfully prompts user to enter amount to withdraw, prints an appropriate message to user to calculate and print balanceSuccessfully prompts the user for an integer values and check this number is a multiple of 10 and that the withdrawal is permittedPrints an appropriate goodbye messagePrints an appropriate error message	<ul style="list-style-type: none">Successfully turns this program into a function https://www.w3schools.com/python/python_functions.asp



Core Learning 4 – list, set and dictionary

Creates a list of three fruits:

1. Outputs all the fruits in the list

2. Outputs the second fruit in the list

Creates a set of three fruits:

1. Outputs all the fruits in the set

2. Adds a new fruit to the set

3. Outputs all the fruits in the set

4. Tries to add a repeat of a fruit to the set

5. Outputs all the fruits in the set

Creates a dictionary of three fruits with a corresponding price:

1. Outputs all the fruits in the dictionary

2. Outputs the price of the second fruit in the dictionary

3. For a given fruit output its price if it is in the dictionary or a message if it is not in the list

Marking Criteria – list, set and dictionary

	Pass	Merit	Distinction
Syntax	<ul style="list-style-type: none"> Attempts to use Python syntax with some success 	<ul style="list-style-type: none"> Python syntax is largely accurate with some errors 	<ul style="list-style-type: none"> Python syntax is consistently accurate and appropriate to the task
Code	<ul style="list-style-type: none"> Attempts to create a list containing 3 fruits Attempts to create a set containing 3 fruits Attempts to create a dictionary containing 3 fruits and a corresponding price 	<ul style="list-style-type: none"> Successfully creates a list containing 3 fruits and output the second fruit in the list Successfully creates a set containing 3 fruits, adds a new fruit, outputs all fruits, tries to add a repeat fruit, outputs all fruits in the set Successfully creates a dictionary containing 3 fruits and a corresponding price Outputs the price of the second fruit For a given fruit output its price if it is the dictionary or an appropriate message if it is not 	<ul style="list-style-type: none"> Successfully adds a loop to the program https://www.w3schools.com/python/python_for_loops.asp



Portfolio Tasks -

Portfolio
Projects

Mini project QR code
generator (1:07:04 to
1:13:58)

<https://www.youtube.com/watch?v=pdy3nh1tn6I>

Mini python face
detector (2:19:39 to
2:27:14)

<https://www.youtube.com/watch?v=pdy3nh1tn6I>

Mini project magic 8
ball

<https://www.youtube.com/watch?v=JP2rpfM5s5w>

Remember to
upload to GitHub





Flipped Learning

Flipped Learning

Use the following resources to support you ahead of next weeks session on the following concepts:

For loops
While loops
Functions

Watch YouTube video <https://www.youtube.com/watch?v=rfscVS0vtbw> during the below times which run through working with the different types of loops and functions

2:14:13 - 2:41:20



Enrichment

Use the following resources to explain concepts in more detail:

Python try, except, else and finally - https://www.w3schools.com/python/python_try_except.asp

File handling in python - https://www.w3schools.com/python/python_file_handling.asp



Technology

This week, our focus is on **Web Accessibility**

Facts (people living in the UK):

- One in five people (or 11 million people) have a long term illness, impairment or disability
- 1.5 million people have a learning disability
- 7 million people have been diagnosed with dyslexia
- 2 million people live with a visual impairment
- 3 million people (1 in 12 men and 1 in 200 women) who are colour blind (CVD)

<https://www.gov.uk/government/statistics/disability-facts-and-figures/disability-facts-and-figures>

Sometimes, people try to access websites with a temporary or situational condition →

There are many technologies that can support developers when designing websites to ensure they meet the minimum standards so that 'everyone' can access a website.













Where to start:

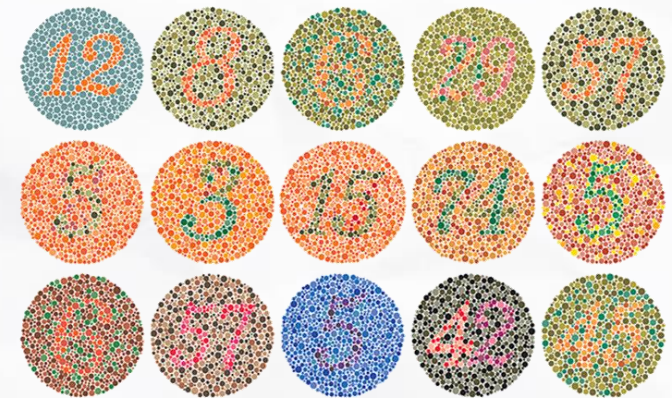
<https://www.gov.uk/service-manual>

<https://www.w3.org/TR/WCAG21/>

Tools:

<https://wave.webaim.org/>

	Permanent	Temporary	Situational
Touch	 One arm	 Arm injury	 New parent
See	 Blind	 Cataract	 Distracted driver
Hear	 Deaf	 Ear infection	 Bartender
Speak	 Non-verbal	 Laryngitis	 Heavy accent





Wellbeing

This week, our focus is on **Exercise** – Working at a desk

Modern technology has given us plenty of benefits and conveniences, but with one major drawback: most of us sit at a desk for eight (or more) hours a day, five times a week, most of the year!

And unfortunately, the very thing that can make us productive, profitable, and successful employees for our company can also harm our health—maybe even permanently.

Luckily, there are many websites which can provide ideas, help and support to get us moving during the day. Below are a few ideas however please explore the links and continue to lead a more active life.

- Go for short walks during breaks
- Walk whilst on the phone (even if it's pacing up and down the living room if working from home)
- Seated leg raises
- Chair dips (only works on chairs with no wheels)
- Desk push-ups

<https://www.healthline.com/health/fitness/office-exercises>

<https://www.tinypulse.com/blog/sk-desk-exercises>

For those of you that want to exercise secretly:

<https://www.livewellwinona.org/10-office-exercises-you-can-do-secretly/>



Soft Skills

This week, our focus is **Office Etiquette**.

If you have never worked in an office or changing careers, there are many 'unspoken' rules which you may not be aware of. As every office is different, below are just a few general assumptions:

- **Turn up on time for meetings:** arriving fashionably late is not an option (unless you're the owner of the company)!
- **Keep personal phone use to a minimum:** sometimes it's unavoidable to take a personal call during working hours. If possible, try to rearrange the call during your break.
- **Deodorant:** Some offices are not well ventilated and odours can spread far and wide. Ensure you have a backup plan in place if you start getting a little sweaty.
- **Know when your colleagues are busy:** Most staff will drop everything to help and support you (in particular when you are new) but when someone is deep in thought or concentration, it may not be the most ideal time to strike up a conversation.
- **Eating at your desk:** Check what is the 'normal' practice in the office. If possible, it's a good idea to eat away from your desk as you will often find yourself checking an email or two or continuing to work on an open document.
- **Shared kitchen:** Some offices share a kitchen with other departments or companies. Don't be tempted to steal milk or food from the fridge; Check which items you can use first before making assumptions.

For more information, please read the following websites:

<https://www.avansas.com/uk/blog/forgotten-office-etiquette-here-are-the-new-office-rules/>

<https://smallbusiness.co.uk/workers-guide-office-etiquette-2539633/>

<https://www.sableinternational.com/blog/the-dos-and-don-ts-of-uk-business-etiquette>



Employability

Microsoft Office 365 and Google Workspace are office packages that are used around the world and are commonly used within most businesses. It is essential you upskill yourself on an office package as this will be expected in most roles within the tech industry.

To support you, Tech Talent have provided you with access to www.office.com and log in using your Tech Talent email.

Once logged in, Microsoft have provided training resources for their most commonly used apps within Office 365

<https://support.microsoft.com/en-us/training>

There are also some Office Cheat Sheets available:

<https://support.microsoft.com/en-us/office/office-cheat-sheets-61abfe7b-1c43-483c-b82b-3806d80e027e>