Data Academy HLT

Core Learning

Portfolio Projects

Flipped Learning

Enrichment

Technology

Wellbeing

Soft Skills

Employability

Tasks	GLH
Core Learning – MongoDB fundamentals	60 – 120 minutes
Portfolio Task – MongoDB projects	120 – 240 minutes
Flipped Learning – Python Fundamentals	30 minutes
Enrichment – MongoDB vs MySQL	60 minutes
Technology – Cyber Security	60 minutes
Wellbeing – Stress	60 minutes
Soft Skills – Leadership	60 minutes
Employability – What to expect in interview	60 minutes

*Times are a rough guideline

TECH TALENT ACADEMY

Core Learning 1 – Creating a MongoDB database.

1. Create a database in MongoDB of your choice
2. Create 3 Collections
3. Insert at least 10 documents into each collection
4. Search for one of documents passed on a index.
5. Update a collection
6. Delete a Collection

REMINDER

Must check marking criteria

Use examples from lesson

Once complete, submit the mongodb file via Teams

Marking Criteria – Creating a MongoDB database.

	Pass	Merit	Distinction
• **Syntax**	• Attempts to use JSON syntax with some success	• JSON syntax is largely accurate with some errors	• JSON syntax is consistently accurate and appropriate to the task
• **Code**	• Attempts to complete some of the MongoDB fundamental tasks	• Successfully completes all of the MongoDB fundamental tasks	• Successfully using other MongoDB methods which may require students to complete own research

Core Learning 2 – Uni database

Install the attached uni database and write queries to extract the specified data.

1. Find all the documents from the student collection which CourseID 4.
2. Find all the documents from the student collection which CourseID 5 and Forenames is Joe.
3. Find all the documents from the student collection which CourseID 5 or Firstname is Joe.
4. Find all documents from the application collection and sort by studentID.
5. In the class collection, count the number of LecturerID which is equal to 11.

Marking Criteria – Mathematics

	Pass	Merit	Distinction
Syntax	• Attempts to use JSON syntax with some success	• JSON syntax is largely accurate with some errors	• JSON syntax is consistently accurate and appropriate to the task
Code	• Attempts to complete some of the MongoDB fundamental tasks	• Successfully completes all of the MongoDB fundamental tasks	• Successfully using other MongoDB methods which may require students to complete own research

Portfolio Tasks –

Connect MongoDB to Python and practice writing queries.

https://www.w3schools.com/python/python_mongodb_getstarted.asp

How to Handle Advanced Data Processing with MongoDB's Aggregation Framework.

https://www.freecodecamp.org/news/mongodb-aggregation-framework/

Powerful Tools for MongoDB data Visualization

https://www.freecodecamp.org/news/mongodb-data-visualization-tools-565000c7309/

Remember to upload to GitHub

GitHub

Flipped Learning

Flipped Learning

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

Variables
Math expressions
Data types

https://www.w3schools.com/python/python_syntax.asp
https://www.w3schools.com/python/python_variables.asp
https://www.w3schools.com/python/python_datatypes.as

Enrichment

Use the following resources to explain concepts in more detail:

MongoDB vs MySQL - https://www.knowi.com/blog/mongodb-vs-sql/#:~:text=SQL%20databases%20are%20used%20to,joins%20like%20SQL%20databases%20support.

Enrichment

Technology

This week, our focus is on **Cyber Security**.

Cyber Security is the process and techniques involved in protecting sensitive data, computer systems, networks, and software applications from cyber attacks. Some of the popular cyber attacks involve:
- Tampering systems and data stored within
- Exploitation of resources
- Unauthorised access to the targeted system and accessing sensitive information
- Disrupting the normal functioning of the business and its processes
- Using ransomware attacks to encrypt data and extort money from victims

Attacks are becoming more innovative and sophisticated that can disrupt the security and hacking systems. So it's very challenging for every business and security analyst to overcome this challenge and fight back with these attacks.

For more information about cyber security, visit the following links:
https://geekflare.com/understanding-cybersecurity/
Explains cyber security terminology used:
https://www.youtube.com/watch?v=inWWhr5tnEA
Create a simple key logger in Python
https://www.youtube.com/watch?v=XKoTwepEzPI

Technology

Wellbeing

This week, our focus is on **Dealing with Stress**.

If you're stressed, whether by your job or something more personal, the first step to feeling better is to identify the cause.
The most unhelpful thing you can do is turn to something unhealthy to help you cope, such as smoking or drinking.

What you can do to address stress
- Be active
- Take control
- Connect with people
- Have some 'me time'
- Challenge yourself
- Avoid unhealthy habits
- Help other people
- Work smarter, not harder
- Try to be positive
- Accept the things you cant change

For more help and support, please visit the following links:
https://www.nhs.uk/mental-health/self-help/guides-tools-and-activities/tips-to-reduce-stress/
https://www.mentalhealth.org.uk/explore-mental-health/publications/how-manage-and-reduce-stress
https://www.healthline.com/health/10-ways-to-relieve-stress

Wellbeing

Soft Skills

This week, our focus is **Leadership Skills.**

What makes a good leader? It is clear that the ability to lead effectively relies on a number of key skills, but also that different leaders have very different characteristics and styles.

Leadership skills are highly sought after by employers as they involve dealing with people in such a way as to motivate, enthuse and build respect.

Whether or not leadership itself can be taught, there is no question that there are a number of core skills that most good leaders have. These skills can be learnt like any others.

Skills good leaders need:
1. Strategic Thinking Skills
2. Planning and Delivery Skills
3. People Management Skills
4. Change Management and Innovation Skills
5. Communication Skills
6. Persuasion and Influencing Skills

For more information about Leadership Skills, please visit the following links:
https://uk.indeed.com/career-advice/career-development/leadership-skills
https://www.skillsyouneed.com/leadership-skills.html
https://www.thebalancecareers.com/top-leadership-skills-2063782

Soft Skills

Employability

Your CV hit the spot with the recruiters and you've been invited to interview. It's great news, but there's no doubt it can be a bit nerve-wracking...

Thankfully, there are some steps you can take to make sure you're prepared for a job interview. While you can't anticipate exactly which interview questions are going to be asked, you can be fairly certain of a few, even if they're presented in different guises. Practise your answers – and have a few questions of your own ready – and you'll be getting your encore in no time.

Review the following:
- Study your CV
- Think about your work history
- Figure out your career bucket-list
- Prepare a two minute speech about yourself

Use the following website to support you with what to expect in an interview:
https://www.monster.co.uk/career-advice/article/what-are-the-most-common-job-interview-questions
https://www.prospects.ac.uk/careers-advice/interview-tips/how-to-prepare-for-an-interview
https://www.thebalancecareers.com/what-to-expect-during-a-job-interview-2063897

Employability