Core Learning

Portfolio Projects

Flipped Learning

Enrichment

Technology

Wellbeing

Soft Skills

Employability

Data Academy HLT

Tasks	GLH
Core Learning - Subqueries	20 - 40 minutes
Core Learning - Working with Null Values	20 - 40 minutes
Core Learning - Grouping Data	20 - 40 minutes
Core Learning - Joins	20 - 40 minutes
Portfolio Task - SQL Mini Projects	120 - 240 minutes
Flipped Learning - MongoDB	30 minutes
Enrichment - Pros and cons of SQL	60 minutes
Technology - Flow Diagrams and Pseudocode	60 minutes
Wellbeing - Health & Safety eye care	60 minutes
Soft Skills - Team Work	60 minutes
Employability - LinkedIn profile	60 minutes

*Times are a rough guideline

TECH TALENT ACADEMY

20 - 40 mins

Core Learning 1

Subqueries

1. Obtain the average of full time fees from the Uni database

2. Obtain a list of fees where the full time fees are above their calculated average

3. Sort the full times fee by ascending order

REMINDER

Must check marking criteria

Use examples from lesson

Once complete, submit via Teams

Core Learning

Marking Criteria – subqueries

	Pass	Merit	Distinction
Syntax	• Attempts to use SQL syntax with some success	• SQL syntax is largely accurate with some errors	• SQL syntax is consistently accurate and appropriate to the task
Code	• Was able to calculate the average full time fees	• Was able to calculate the average full time fees and made attempt to make a subquery	• Was able to calculate the average full time fees and make a subquery

Core Learning

20 - 40 mins

Core Learning 2

BETWEEN TWO NULLS

1. Obtain a list of applications where the CourseID is unknown

2. Obtain a list of students where their CourseID is not unknown

3. Obtain a list of students whom were born in the month of June 2002

4. Obtain a list of applications where CourseID is unknown and the applications where made between 01/04/2020 and 31/07/2020

Use the Uni database to complete the tasks

Core Learning

Marking Criteria – working with null values

	Pass	Merit	Distinction
Syntax	• Attempts to use SQL syntax with some success	• SQL syntax is largely accurate with some errors	• SQL syntax is consistently accurate and appropriate to the task
Code	• Was able to query both lists	• Was able to query the right column records and made attempt to sue the right condition to select only null values and null values	• Was able to query the right column records and the right condition to select only null values and null values

20 - 40 mins

Core Learning 3

GROUPING

1. Obtain the number of modules which are assigned to each course

2. Retrieve Information on the number of successful applications per course

3. Find the average Membership Fee of Student Clubs by the ID of the Staff member (Lecturer) supervising it

4. Find the Sum total of Joining Fees for all active clubs by Staff Member supervising them

Use the Uni database to complete the tasks

You might want to use conditional statements as well with the WHERE clause

Core Learning

Marking Criteria – grouping data

	Pass	Merit	Distinction
Syntax	• Attempts to use SQL syntax with some success	• SQL syntax is largely accurate with some errors	• SQL syntax is consistently accurate and appropriate to the task
Code	• Was able to use the 'Group by' method for at least one task	• Was able to use the 'Group by' method for at least 2 tasks	• Was able to use the 'Group by' method for all tasks

Core Learning

20 - 40 mins

Core Learning 4

JOINS

1. Obtain a list of all modules and the names of any courses they may be taught (include modules without courses)

2. Obtain a list of students along with any related application numbers if they have them

3. Obtain the Class ID, Class Date and Feedback score of the latest class scheduled for each Class ID

Use the Uni database to complete the tasks

To complete the tasks: INNER JOIN with a GROUP BY method will be needed. Others joins might be used. See other join examples here: https://www.programiz.com/sql/join

Core Learning

Marking Criteria – joins

	Pass	Merit	Distinction
Syntax	• Attempts to use SQL syntax with some success	• SQL syntax is largely accurate with some errors	• SQL syntax is consistently accurate and appropriate to the task
Code	• Attempts to join tables together	• Successfully uses the appropriate joins for the query	• Successfully uses the appropriate joins for the query and users the group by method where needed

120 - 240 mins

Portfolio Projects

Portfolio Tasks –

Option 1

Mini projects with source code:

https://www.interviewbit.com/blog/sql-projects/

Option 2

Practice retrieving data from various case studies

https://8weeksqlchallenge.com/

Option 3

Mario Database

https://www.freecodecamp.org/learn/relational-database/learn-relational-databases-by-building-a-mario-database/build-a-mario-database

Remember to upload to GitHub

GitHub

30 mins

Flipped Learning

Flipped Learning

We will be looking at the following concepts:

- What is MongoDB?
- What are the main differences between MongoDB and SQL?
- What are the main applications of MongoDB?
- What is JSON?

Visit the w3schools website to the learn the basics of MongoDB:
https://www.w3schools.blog/mongodb-tutorial

60 mins

Enrichment

Use the following resources to explain concepts in more detail:

Enrichment

What are the advantages, disadvantages of SQL as well as its applications?
https://unstop.com/blog/advantages-and-disadvantages-of-sql

90 mins

Technology

Throughout this course, you may benefit from planning some of the tasks first before you start coding.

There are many techniques that can be used to help plan out your code:
- Flow diagrams
- Pseudocode

It will be expected in a software developer role that you have a good grasp of these methods. Use the following links to improve your knowledge:

This free software allows you to create flow diagrams.
Draw.io - https://app.diagrams.net/

A great website to introduce you to flow diagrams (*unsure about the green colour*). Feel free to explore UML
Intro to flowcharts - https://www.geeksforgeeks.org/an-introduction-to-flowcharts/

Good explanation of pseudocode (examples aren't the best)
https://www.freecodecamp.org/news/what-is-pseudocode-in-programming/

Good examples of pseudocode:
https://www.unf.edu/~broggio/cop2221/2221pseu.htm

60 mins

Wellbeing

This week, our focus is on **Health & Safety** – Eye care when using a computer

Working in front of a computer all day can have an impact on your eyesight. Typical problems include:

- **Poor hardware configuration**: not having your brightness and contrast adjusted accordingly can cause eye strain. Also not having your monitor or laptop at the right distance can stress your eyes throughout the day.
- **Old hardware**: having an old monitor where the picture quality is poor or not having the correct adjustments
- **Spending too much time inside**: Staring at things that are nearby all day is proven to lead to short-sightedness. It is often much brighter outside so your eyes don't have to work as hard.
- **Not wearing glasses**: Some people forget to wear their glasses, in particular when working from home. Not wearing glasses when you need them puts a lot of extra strain on your eyes, causing tiredness or headaches.
- **No eye check-ups** - It is recommended that everyone has an eye check-up every two years.

Further information can be found using the following links:
https://developerpitstop.com/eyecare-for-software-engineers/
https://betterprogramming.pub/the-programmers-guide-to-maintaining-healthy-eyes-9f7ba8900a63

Computer vision syndrome:
https://www.sbs.nhs.uk/article/16681/Working-from-home-and-looking-after-your-eyes

90 mins

Soft Skills

This week, our focus is **Team Work.**

There are very few jobs that require you to work in isolation. It is likely you will be asked to work with others or be part of a small team throughout your working week. It is important to know what type of role you play in a team, what your strengths are and areas you may want to develop.

Firstly, it may be helpful to know your key personality traits. Use the link below to provide a quick overview of your personality.

https://www.16personalities.com/

Secondly, research different roles identified when working as part of a team:

Dr Meredith Belbin has completed lots of research over the years and has identified 9 different team roles. The roles can be found here:

https://www.belbin.com/about/belbin-team-roles

Finally, you can take the test for free however it's a manual process (maybe a software development project for someone???).

https://www.nerbyk2k.com/wp-content/uploads/BELBIN-questionnaire.pdf

60 mins

Employability

It is important you have an online presence (especially in the tech industry) and build a professional network.

Most people use LinkedIn to:

- Build a virtual network of contacts – this could prove valuable if you are looking for a job
- Connect with recruiters (around 87% of recruiters regularly use it).
- Research companies – it's a great way to find out more information about a company before interview
- Support groups – join discussion groups to grow your network and connect with people you wouldn't otherwise have a chance to meet
- Find informative and helpful posts.

You can also upload your CV so recruiters and employers can search and match you with potential jobs and set your status as 'Looking for work'.

LinkedIn is also a great place to share your successes, such as passing industry qualifications, such as those offered by BCS or Microsoft.

Once your setup, search for your TTA trainer and add them as a contact: this will allow you to share your journey through your tech career.