Data Fellowship

The Synoptic Project

What is it?

The Synoptic Project is a chance for the assessor to see your end-to-end analytical skills. You will be simulating 6 elements of a standard piece of analysis:

- **Data Discovery**
- **Data Preparation**
- **Model Planning (& Investigation)**
- **Model Planning (& Confirmation)**
- **Building**
- **Testing**
- **Communication**

Timeline

Gateway	Synoptic Project Date	Practice Synoptic Project	Synoptic Project	Interview
Submit all documentation	Scheduled within 5 days of received documentation	Prework given in booking confirmation	5 consecutive working days to complete	Interview scheduled within 10 working days

Competencies

Example:

Identify, collect and migrate data to/from a range of internal and external systems.

- **Apprentices should be competent in abstracting data for subsequent analysis. This will include:**
  - Identifying the data necessary as inputs to the analysis based upon the requirements of those requesting the analysis
  - Collecting data from a variety of sources. They should understand that data may be collected not only from stored data but also from sensors, cameras, recording devices, etc
  - Migrating data for subsequent analytics studies and specify data conversation requirements

Scenario

You are an apprentice working for Wide World Importers Ltd.

Your company buys products from global sources by importing and then reselling them (B2B) to their customers who, in turn, sell to consumers

- The Senior Leadership Team needs you to provide insightful analysis, using data they provide you with so that they can make strategic decisions in the future

Scenario

You will be provided with CSV files that contain company data.

- You will be given several tasks to complete, which will be provided in the project objectives that you will receive in the project.
- You will need to plan and prioritise your approach to the tasks and be able to explain your decisions
  - Complete the tasks to the best of your ability
- The information you will be given in the project brief is sufficient for you to approach the tasks
  - You will be expected to make assumptions and decisions to complete the task

You have a maximum of 5 days to complete the project

Scenario

Equipment required

- Use of a computer with access to the internet and your preferred data analysis/software tools
- To complete these tasks:
  - Use any tools
  - Programming language or software to answer the questions
  - Document what you have used and why

Activity

In breakout rooms:

- **Read the scenario together**
  - **What is the GOAL of the task?**
  - **What are your required OUTPUTS?**
- **Walk through it together**
  - **What sort of analytics could be asked for?**
  - **What data would you ideally have?**
  - **Are there any assumptions you need to make?**
  - **What tools would you use and WHY?**

What is the format?

From AP: ***a short review and document key fields to be used for analysis***

- **Summarise the question asked**
- **State which metrics you are using and which column name (in the data provided) they correspond to**
- **Explain why you are choosing these fields**
- **State your assumptions (you are expected to have some)**

What is the format?

From AP: *a short summary of the processes used to extract, transform and load the data*
(just like in the Action sections of your projects)

- **What, How & Why**
- **Document any issues with data quality (there will be some)**

What is the format?

From AP: document the models / charts / reports considered

- **This is your Exploratory Data Analysis section**
- **What initial trends do you see?**
- **Consider (and try!) the various models at your disposal**
- **Which is best for your purpose? How did you decide?**

What is the format?

From AP: *document the final selected models / charts / reports*

- **What model have you chosen for the investigation?**
- **Why?**
- **What visualisations do you intend to use?**
- **Why?**

What is the format?

From AP: *build the reports / models to answer the questions*

- **Do the analysis**
- **Train/Test your model**
- **Pick the best version of your model**
- **Visualise your results**
- **Ask yourself...can I answer all of the questions with these?**
- **Ask yourself...can I show off a relevant additional skill?**

What is the format?

From AP: *document how you have tested and validated the results*

- **Are your results significant? (perform the relevant statistical test)**
- **Do the assumptions you made about the data invalidate your conconclusions?**
- **How do you know your results are valid?**

What is the format?

From AP: *Compile a short report answering the questions asked in the Project Objectives section*

- **Answer the questions**
- **Include screenshots of your visualisations etc where appropriate**
- **Check you answered the questions**
- **Add in any additional analysis you would like considered**
- **Check you answered the questions thoroughly**

Recap

- **PLAN your project to either:**
  - **Show off your strengths (what is your USP?)**
  - **Target a standard that has only weak Portfolio evidence**
- **READ THE INSTRUCTIONS**