Data Fellowship

Introduction to EPA Portfolio

Group Dance Off!

It's time to wake yourselves up and get to know each other a little better!

In your breakout rooms you are going to have 3 minutes to create your signature dance move.

Oh...Slack us your team name (with breakout room number) too!

Order of the session...

1. EPA Portfolio

2. Introduction to the Standards

3. Acceptable Evidence

4. Evidence Tracker

5. Introduction to Projects

6. Questions & answers

How to build an

Outstanding Portfolio

What is a portfolio?

"A portfolio is a showcase of your best real work projects and demonstrates your knowledge, skills and behaviours against the competencies of the standard. Your reflective journals and assignments form the basis of this key element of your apprentice assessment."

What is a Portfolio?

As well as showing that you are a competent Data Analyst, BCS requires that a portfolio demonstrates *"the personal and interpersonal qualities the apprentice has brought to internal and external relationships"*

What do you think this means?

What is a Portfolio?

The criteria in the Standards are the minimum required level for a PASS.

In order to achieve a Merit or Distinction you must show that you are working significantly above the minimum required level.

The Assessor must see <u>consistent</u> performance for a Distinction

A complete portfolio...

- ☑ Covers **all competencies**
- ☑ Demonstrates a broad range of challenging or complex activities
- ☑ Demonstrates **in-depth skills** and convincing **occupational competence**
- ☑ Has an index / table of contents, is **well organised** and **easy to navigate**

Each piece of evidence...

- ☑ Has a clear **narrative** explaining the what, the how, and the with whom
- ☑ Has **supporting documentation** embedded or linked in narrative
- ☑ Takes into account assessor has **no prior knowledge** of your job role
- ☑ Good level of written English

What counts as 'work product'?

- Written statements
- Emails
- Reports
- Presentations
- Performance reviews and Progress Reviews
- Feedback / testimony
- Work assignments and projects

Apprenticeship Standards

What are the standards?

They are a list of the **skills** that can be expected from a capable Data Analyst; which you have to evidence.

All the evidence in your portfolio will be assessed against **two types of Standards**:
- Technical Competencies
- Skills, Attributes & Behaviours

What does an analyst do?

For the purposes of your portfolio an analyst's responsibilities are the standards.

Institute for Apprenticeships & Technical Education define the primary role of a data analyst is to collect, organise and study data to provide business insight.

Activity -

How do I demonstrate a standard?

Details of standard

Role Profile

The primary role of a Data Analyst is to collect, organise and study data to provide business insight. Data analysts are typically involved with managing, cleansing, abstracting and aggregating data, and conducting a range of analytical studies on that data. They work across a variety of projects, providing technical data solutions to a range of stakeholders/customers issues. They document and report the results of data analysis activities making recommendations to improve business performance. They have a good understanding of data structures, database systems and procedures and the range of analytical tools used to undertake a range of different types of analyses

Typical Job Roles:

Data Analyst, Data Manager, Data Scientist, Data Modeller, Data Architect, Data Engineer

Entry Requirements

Individual employers will set the selection criteria, but this might include five GCSEs and/or A levels; a Level 3 Apprenticeship; other relevant qualifications and experience; or an aptitude test with a focus on functional maths.

Technical Competencies

Be able to undertake the following in line with organisational procedures and under supervision

- identify, collect and migrate data to/from a range of internal and external systems

- manipulate and link different data sets as required

- interpret and apply the organisations data and information security standards, policies and procedures to data management activities

- collect and compile data from different sources

- perform database queries across multiple tables to extract data for analysis

Task:
- **List the activities required**
- **How could it be evidenced?**

How do I demonstrate a Standard?

Let's have a look at Technical Competency 5:

Perform database queries across multiple tables to extract data for analysis

In order to break this down into specific evidence criteria we have:

- **Reviewed the Occupational Brief & Assessment Plan**
- **Spoken to Industry experts**
- **Taken onboard reflections from other courses at WhiteHat**

How do I demonstrate a Standard?

Let's have a look at Technical Competency 5:

Perform database queries across multiple tables to extract data for analysis

EACH standard has multiple criteria

Apply an individual query to 3 different databases
Apply multiple queries to the same database
Apply inner joins to your datasets
Apply left/right joins to your datasets
Construct a nested/contained database query

Is it Portfolio Ready?

This is a first draft of one of my old projects...BEFORE it was made EPA ready.

Assess the way the project CLEARLY DEMONSTRATES the aspects of this Standard:

|	
	Explores possible analytical possibilities before commiting to a final plan
	Demonstrates an understanding of the business problem & context
	Proceeds via rational steps
Logical and creative thinking skills	Evaluates the relevance and value of evidence
	Supports recommendations/conclusions with evidence
	Identifies any shortcomings of the data/analysis
	Demostrates adaptability in the face of change
	Makes connections between different data sources

Is it Portfolio Ready?
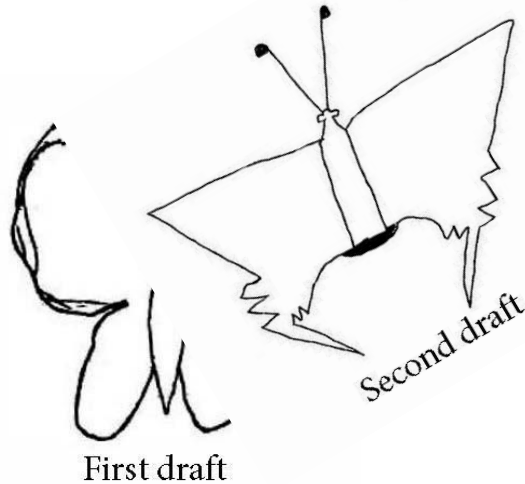

Constructive Feedback!

Is it Portfolio Ready?
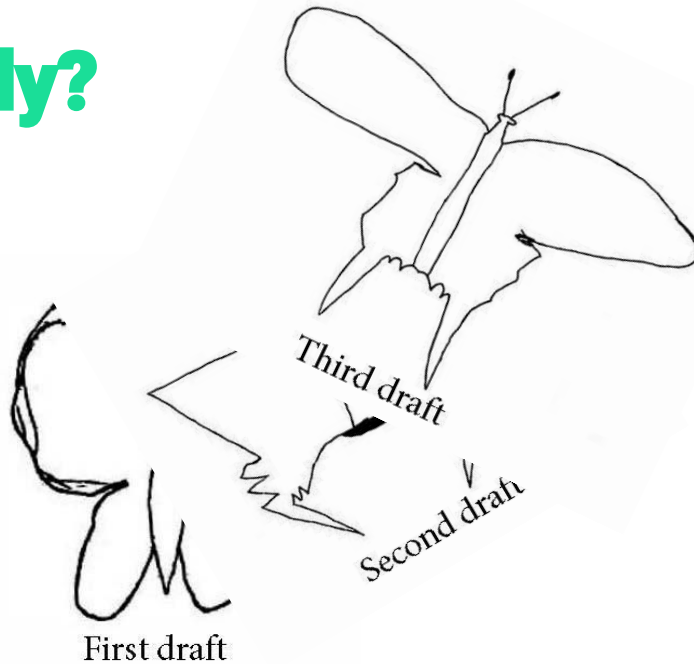
No Feedback.
He's 6…
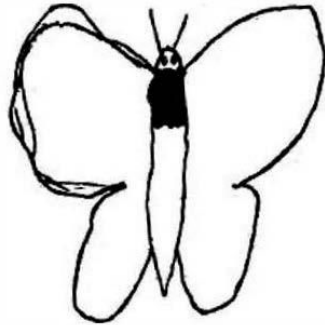
First draft

Is it Portfolio Ready?
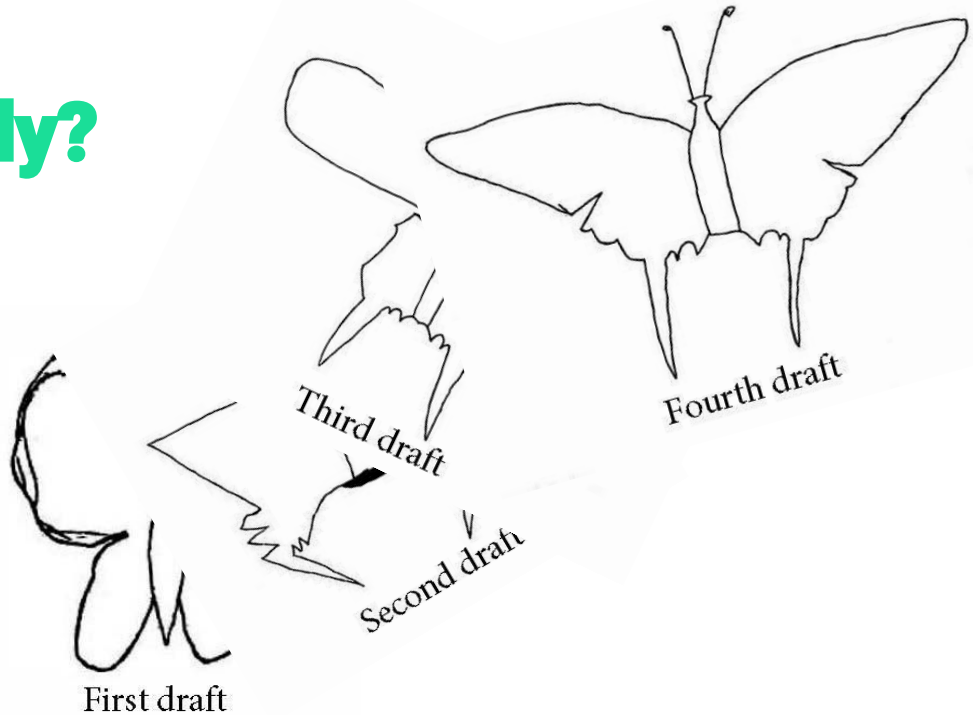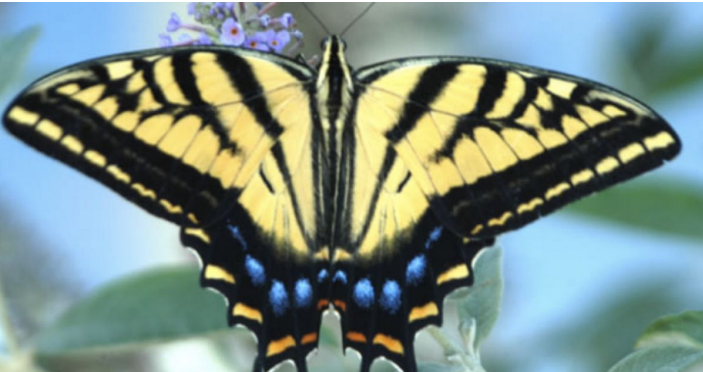
Constructive Feedback
Round 1

First draft

Second draft

Is it Portfolio Ready?

Constructive Feedback Round 2
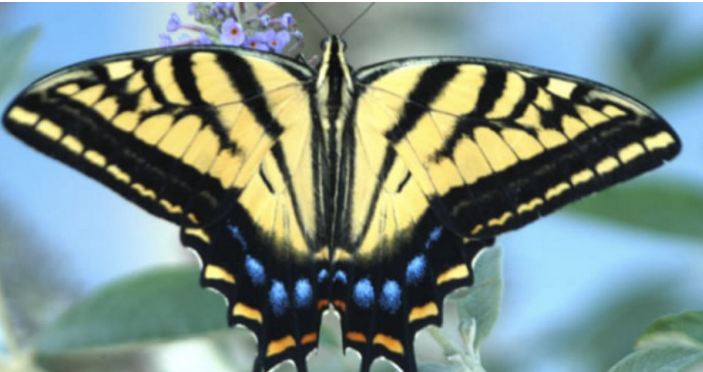
First draft

Second draft

Third draft

Is it Portfolio Ready?

Constructive Feedback
Round 3

First draft

Second draft

Third draft

Fourth draft
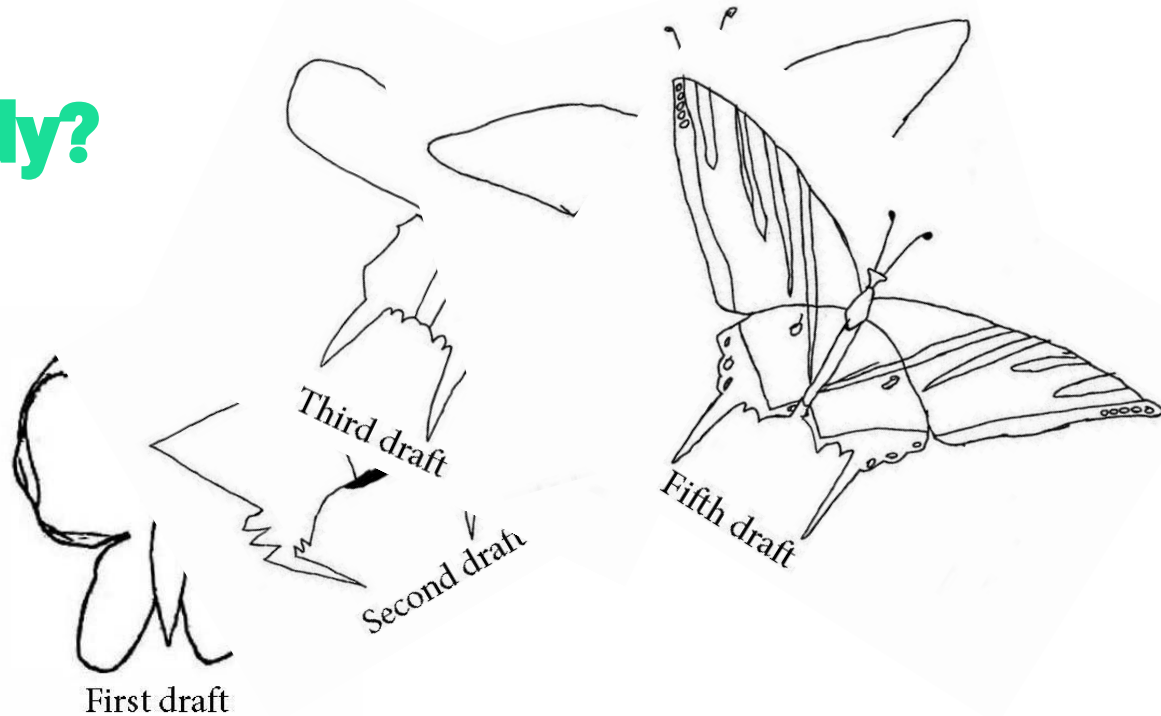
Is it Portfolio Ready?

Constructive Feedback Round 4
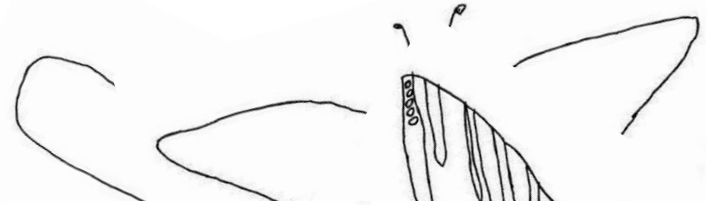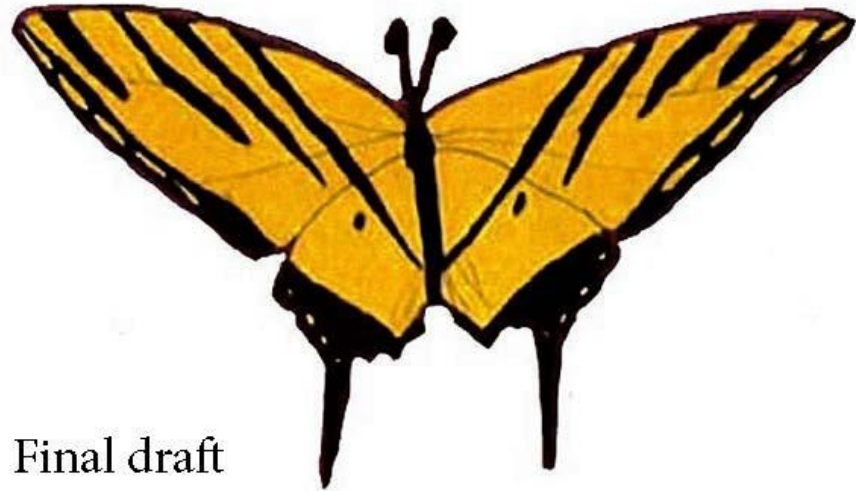
Is it Portfolio Ready?

Right! (Optional) homework time.

Add constructive feedback comments to show me how to improve my work.

Send to me (or your Coach)

Don't just fix it for me!

Competency

What does competency mean to you?

			Recommended Minimum
TC1	Identify, collect and migrate data to/from a range of internal and external systems	Identify the input data necessary based on requirements elicitation for:	
		Internal Systems	2
		External Systems	1
		Collect data from a datasource	3
		Describe 3 sources of unstructured data	1
		Migrate data (for subsequent analysis) from 2 different sources and comment on data conversion	2

How do I track it?

Select the "Evidence Log" sheet:

Code	Evidence Type	Short Description
SW1	Project	SEPA model automation
SW2	Project	A/B testing for marketing campaign
SW3	Project	Linear regression on basket value and frequency
SW4	Project	Automated reprice system
SW5	Presentation	Mental bandwidth event

- Decide on a coding system (initials and a number is easy)
- Enter the type of evidence
- Make your descriptions clear and concise

How do I track it?

Go to the "Evidence Matrix - TCs" sheet:

		Evidence									
		SW1	SW2	SW3	SW9						
	Identify the input data necessary based on requirements elicitation for:										
	Internal Systems	Y	Y								
	External Systems										
TC1	Collect data from a datasource	Y	Y								
	Describe 3 sources of unstructured data										
	Migrate data (for subsequent analysis) from 2 different sources and comment on data conversion requirements	Y									
	Join datsets from two disparate sources			Y							

If a piece of evidence can be used to demonstrate a Technical Competency add it to "Evidence Matrix - TCs"
Use "Evidence Matrix - SABs" if your evidence demonstrates one of the Skills, Attributes & Behaviours

Remember that one piece of evidence can do both!

But is it enough?

Go back to the "Standards - TCs" sheet:
- The cells automatically update when you've logged enough pieces of evidence for that part of the standard
- Track your progress in the top right cell

Recommended Minimum	34.1% Done
2	Evidenced
1	More Required
3	More Required
1	More Required
2	More Required
1	Evidenced
1	Evidenced
1	Evidenced
1	Evidenced
3	More Required

This is the same for the "Standards - SABs" sheet and feeds into "Summary"

Your turn!

If you have already have a project:
- **Start assessing it against the Standards**
- **Populate the evidence matrix in the Evidence Tracker**

If you haven't got a project yet:
- **Start a reflective journal entry on the last skill you learned at work**
- **If you finish, start assessing it against the Standards**
- **Populate the evidence matrix in the Evidence Tracker**

Projects

How do I structure it?

The best way to showcase your skills in a project is to use the STAR format.

Situation
Task
Action
Result

Situation

Set the scene for the Assessor:
- What is the business context?
- What is your role within the team/company?
- Who are the stakeholders?

Task

Set out the business case for your Assessor:
- **What was the problem you were trying to solve?**
- **Why should it be solved?**
  - **Is there a commercial impact?**

Action

Describe what you actually did to the Assessor:
- **What type of analysis/automation/modelling did you use?**
- **What coding language/program (if any) did you use?**
- **How did you choose your dataset?**
  - **Have you made any assumptions?**
- **What steps did you take?**
  - **Why?**
- **Which pieces of legislation/company policies applied to your data?**

Action...

Point Biserial Correlation: $r_{pb} = \dfrac{(\overline{y_1} - \overline{y_2})\sqrt{(pq)}}{sd_y}$

KR-20 measurement: $KR-20 = \dfrac{k}{k-1}\left(\dfrac{s^2x - \sum pq}{s^2x}\right)$

Pass rate: $PR = \dfrac{\sum Passed}{\sum Failed} \times 100$

Paper Code	Number of Learners	Number of Centres	Question Number	Key p-value	Key Point Biserial	a p-value	a Point Biserial	b p-value	b Point Biserial	c p-value	c Point Biserial	d p-value	d Point Biserial
RE-3-03 v202	59	28	1	0.90	0.32	0.90	0.32	0.07	-0.27	0.03	-0.12	0.00	0.00
			2	0.62	0.29	0.00	0.00	0.38	-0.28	0.00	0.00	0.62	0.29
			3	0.90	0.19	0.90	0.19	0.10	-0.18	0.00	0.00	0.00	0.00
			4	0.76	0.30	0.00	0.00	0.76	0.30	0.09	-0.18	0.16	-0.21
			5	0.88	0.29	0.88	0.29	0.09	-0.26	0.02	-0.13	0.02	0.01
			6	0.43	0.28	0.07	-0.15	0.16	-0.16	0.34	-0.09	0.43	0.28
			7	0.97	0.31	0.03	-0.25	0.00	0.00	0.00	0.00	0.97	0.31
			8	0.86	0.13	0.03	-0.06	0.05	-0.02	0.86	0.13	0.05	-0.12
			9	0.47	0.00	0.47	0.00	0.29	0.04	0.07	-0.01	0.17	-0.04
			10	0.33	0.26	0.33	0.26	0.36	-0.14	0.12	-0.18	0.19	0.01
			11	0.83	0.17	0.12	-0.11	0.83	0.17	0.05	-0.12	0.00	0.00
			12	0.93	0.25	0.05	-0.15	0.93	0.25	0.00	0.00	0.02	-0.18
			13	0.79	0.17	0.00	0.00	0.79	0.17	0.09	-0.16	0.12	-0.07
			14	0.97	0.03	0.00	0.00	0.00	0.00	0.97	0.03	0.03	-0.02
			15	0.36	0.27	0.05	0.06	0.34	-0.18	0.36	0.27	0.24	-0.14
			16	0.84	0.12	0.02	-0.09	0.12	-0.09	0.02	0.01	0.84	0.12
			17	0.86	0.23	0.00	0.00	0.86	0.23	0.05	-0.07	0.09	-0.22
			18	0.76	0.20	0.00	0.00	0.24	-0.20	0.76	0.20	0.00	0.00
			19	0.48	0.27	0.52	-0.27	0.48	0.27	0.00	0.00	0.00	0.00
			20	0.93	0.43	0.02	-0.22	0.03	-0.32	0.02	-0.09	0.93	0.43

KR-20	0.67
Pass Rate	72.9%
Earliest Test	14/06/2017
Latest Test	26/01/2018

Action...

Export and include your code!

Code should be:
- Properly formatted
- Commented out
- Correct

```vba
'Cycle through each version
For k = 1 To Versions

    If k <> 1 Then
    'Change version number on Pivot Table
        OldVersionNumber = VersionArray(1, k - 1)
        NewVersionNumber = VersionArray(1, k)

        For p = 1 To 5

            wb.Sheets("Pivot Table " & p).PivotTables("PivotTable" & p).PivotFields ("paperCode")

            With wb.Sheets("Pivot Table " & p).PivotTables("PivotTable" & p).PivotFields("paperCode")

                .PivotItems(PaperCode & " " & NewVersionNumber).Visible = True
                .PivotItems(PaperCode & " " & OldVersionNumber).Visible = False

            End With

        Next p

    End If
```
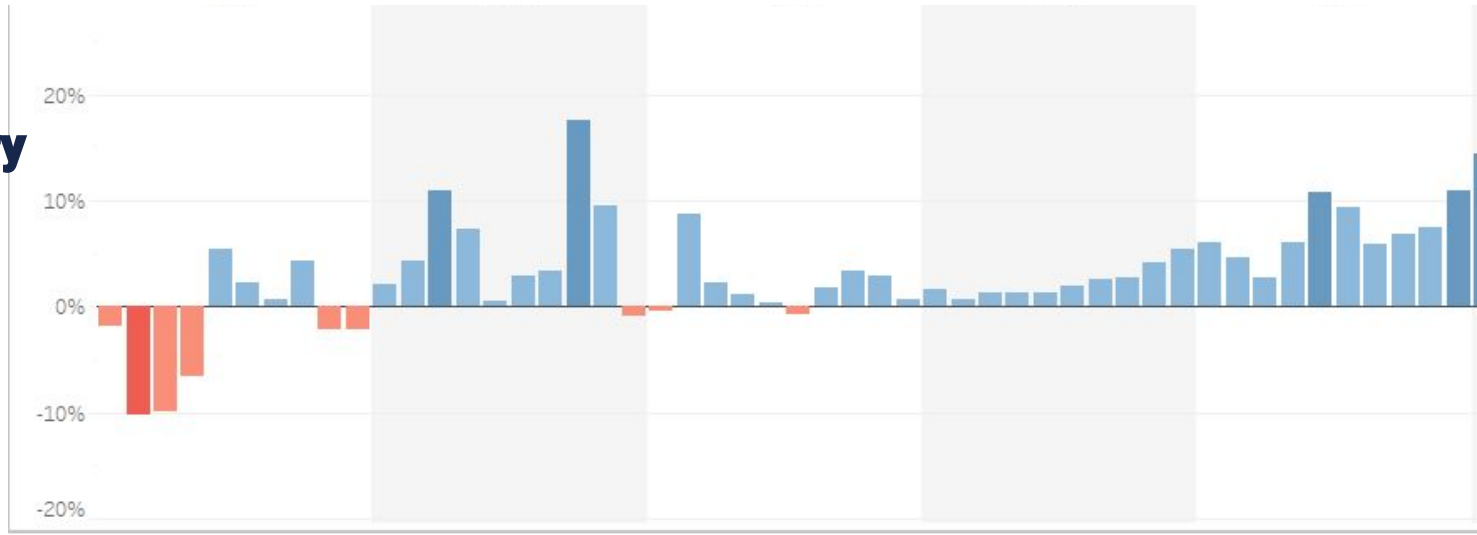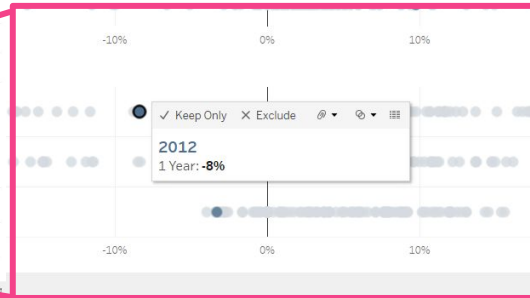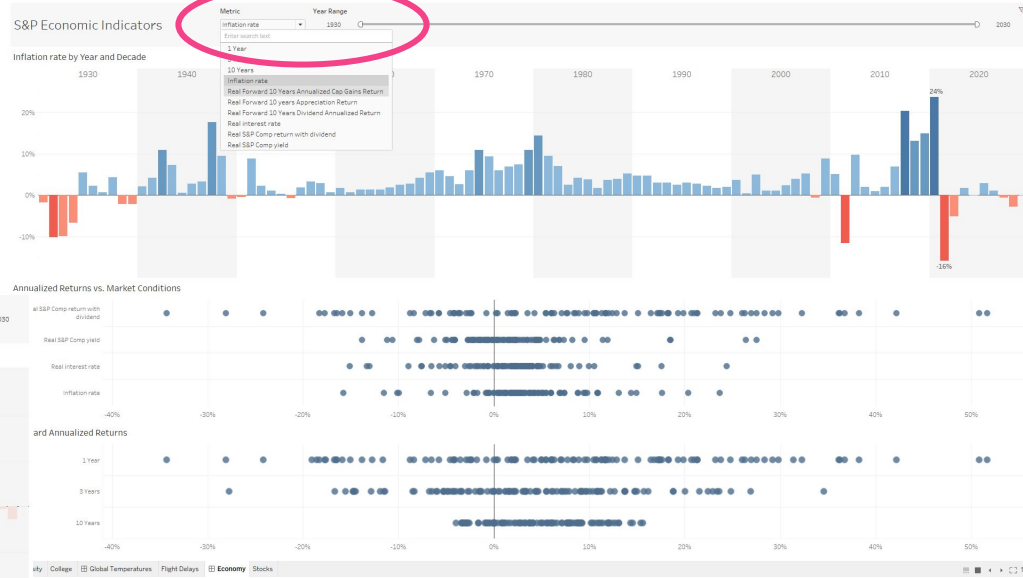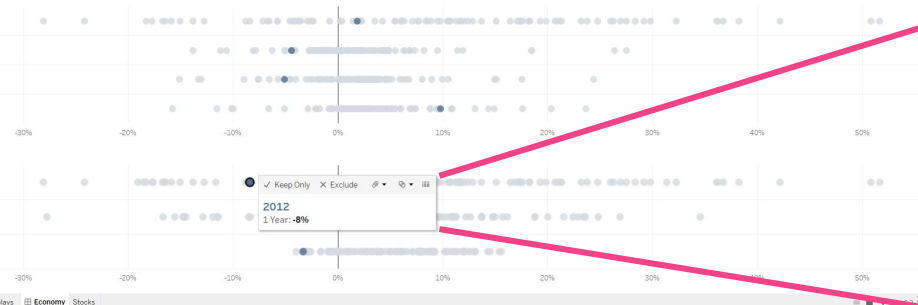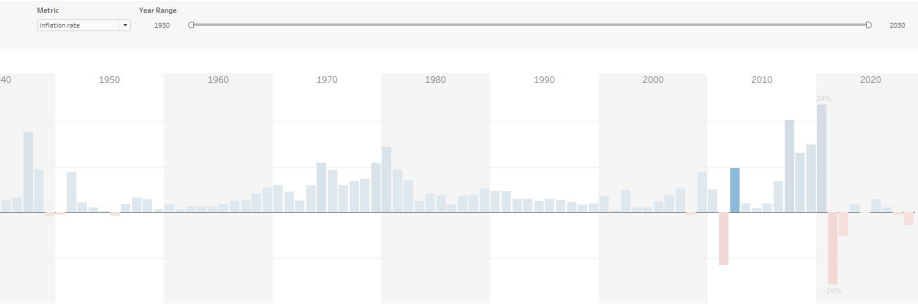
Action...
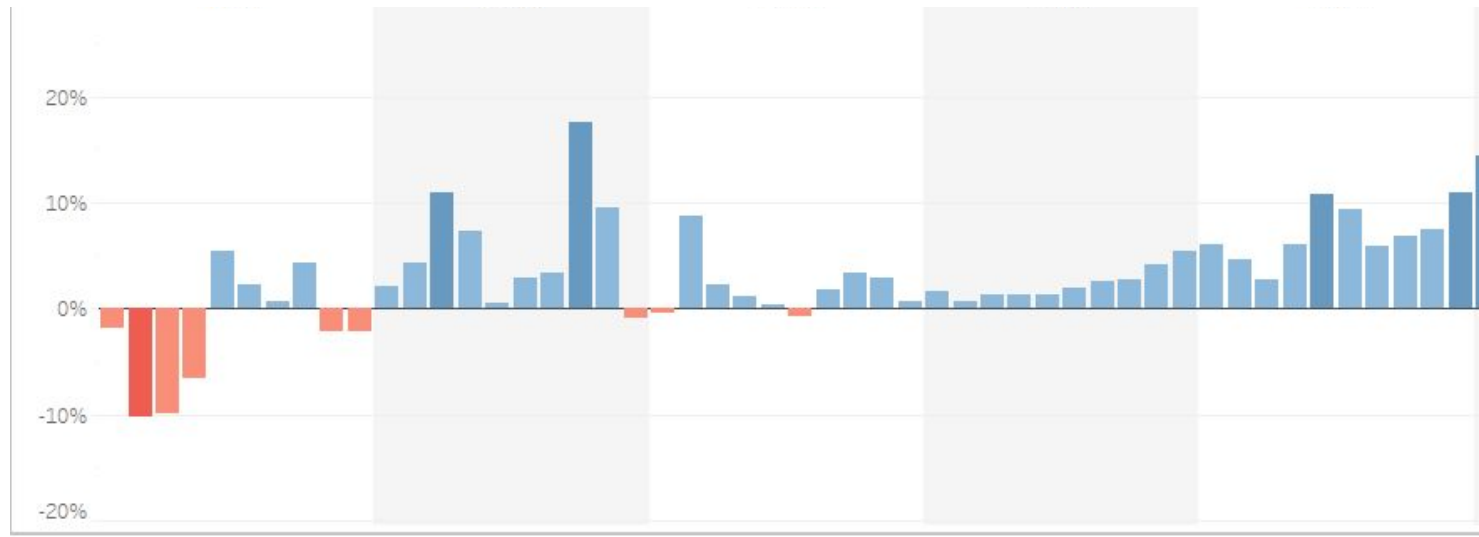
Action...

Visualisations require:
- **Titles!**
- **Axis labels**
- **Commentary**

Action...

Result

Summarise the impact of your work to the Assessor :
- **What were the key achievements/insights?**
- **Were you successful in your goal?**
- **Would you approach the problem differently next time?**
- **Could you extend your project?**

In this section you should also reflect upon what you have learned.

In Summary

In Summary

A complete portfolio:
- Consists of a range of different pieces of evidence
- Covers all competencies (not expected at 1st Mock EPA)
- Has an index/table of contents, is well organised and easy to navigate

Each piece of evidence:
- Has a clear narrative
- Has supporting documentation
- Takes into account assessor has no prior knowledge of your job role
- Uses a good level of written English

Q&A