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What are the DUTIES that
you are expected to be
completing to succeed on
the Programme?



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Data Fellowship

End Point Assessment (EPA)





Objectives for the session

- **Understand** components of EPA
- **Understand** the Standards (KSBs)
- **Know the difference** between a Project and Reflective Journal
- **Understand** how to write up projects to demonstrate Standards
- **Evidence** Standards in the portfolio.



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What is EPA?





EPA



- End Point Assessment
- Showcase skills & Knowledge
- Assessment against 3 sets of criteria
- Comprises of 2 Assessment methods
- 15 - 18 months on Programme



Assessments



Assessment Method 1 (AM1)

- Data Analysis Project
- Work-Based
- 8 weeks long
- 40 minutes Presentation and Questioning
- Mapped against Specific KSBs
- Graded Separately



Assessment Method 2 (AM2)

- Professional Discussion to assess Knowledge
- Portfolio required for discussion
- Mapped against specific KSBs
- 60 minutes long
- Graded Separately
- Supported by employer statement



Grading Criteria

Overview of Grading

There are three sets of criteria on which the assessment and grading is made. The three criteria are:



WHAT



HOW



WITH WHOM



What you have shown
they can do

The way in which the
work has been done

The personal and
interpersonal qualities you
brought to your work
relationships



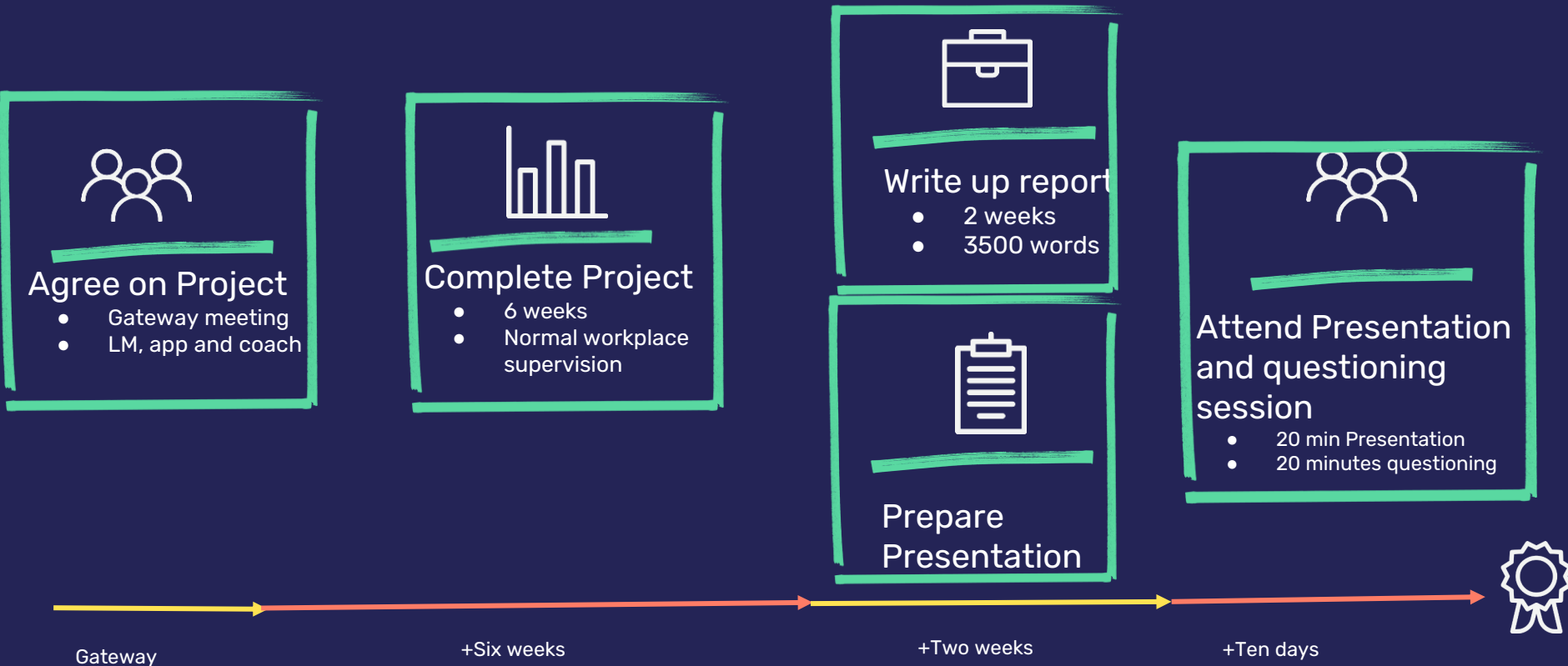
Grades

	AM1	AM2	Final Grade
1	Fail	Any Grade	Fail
2	Any Grade	Fail	Fail
3	Pass	Pass	Pass
4	Pass	Distinction	Merit
5	Distinction	Pass	Merit
6	Distinction	Distinction	Distinction

A pass in any of the assessment means that the apprentice has demonstrated the minimum requirements (i.e evidenced the required standards)



Assessment Method 1 structure and deliverables





Assessment Method 2 structure and deliverables



Develop Portfolio

- 10 evidences
- Supported by Employer statement
- Mapped to KSBs



Submit Portfolio



Attend Professional Discussion

- 60 mins long
- 10 open questions (min)

Pre-Gateway

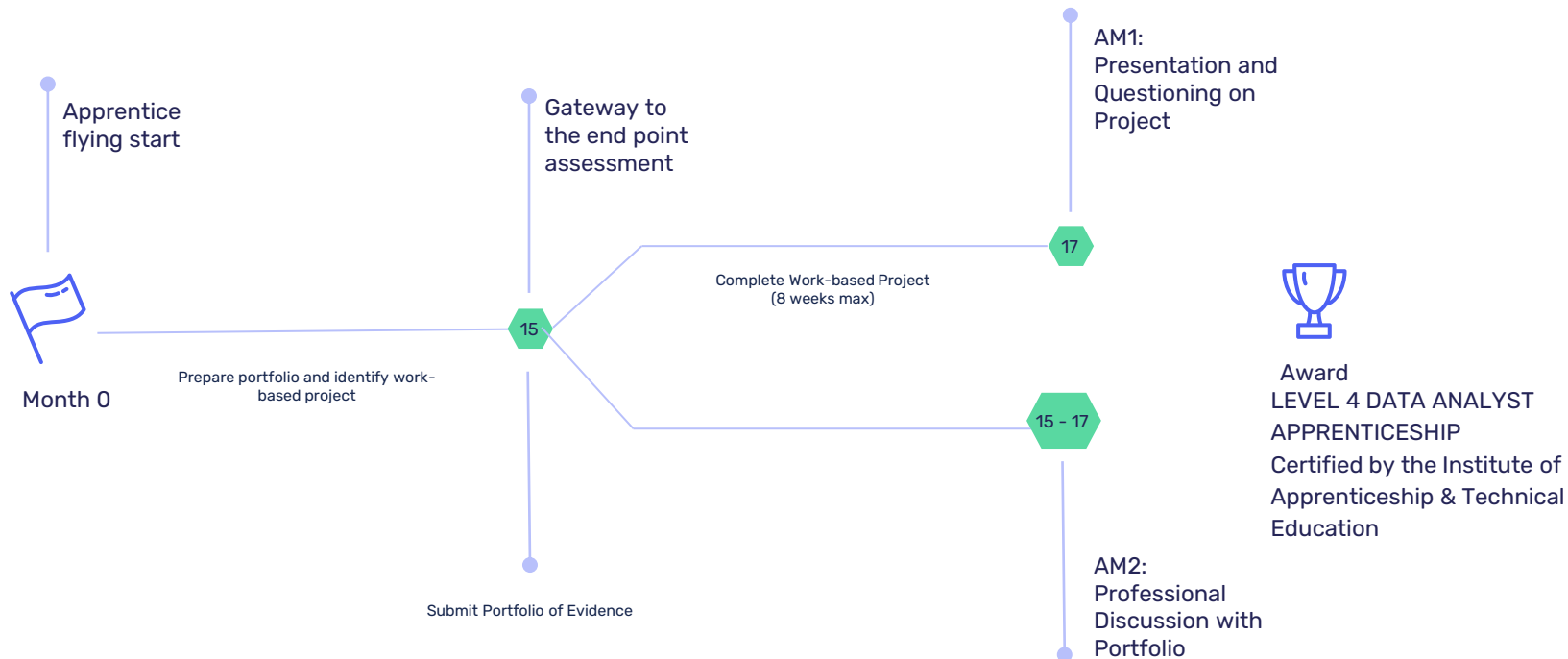
Gateway

+Ten days





End Point Assessment (EPA)





- What are the 2 elements of EPA?
- What are the deliverables of Assessment Method 1?
- What do you know about Assessment Method 2?
- When should you have your portfolio ready by?



Reflection

Which of the EPA components do you think will be a challenging one?



The EPA components are
assessed against the
Standards.

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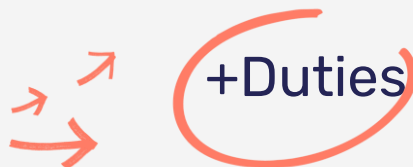
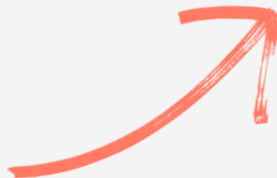
Standards





Standards

Knowledge, Skills and
Behaviours that **YOU**
must evidence for a
pass.





These are to be evidenced in the
assessment methods (1 & 2)

- Knowledge (15)
- Skills (15)
- Behaviours (7)



TASK

- Go on Applied.
- Navigate to the Data Fellowship EPA
- Download the Standards (MS Excel file)
- Open file.



Knowledge

K1. Current relevant legislation and its application to the safe use of data

K2. Organisational data and information security standards, policies and procedures relevant to data management activities

K3. principles of the data analysis life cycle and the steps involved in carrying out routine data analysis tasks.

K12. organisational data architecture

K14. the principles of descriptive, predictive and prescriptive analytics



Skills

S1. use **data systems securely to meet requirements** and in line with organisational procedures and legislation, including principles of Privacy by Design

S2. implement the **stages of the data analysis lifecycle**

S8. identify data sources and the risks, **challenges to combination within data analysis activity**

S10. **apply statistical methodologies to descriptive data analysis tasks**

S11. **apply predictive analytics in the use of data**

S14. to collate and interpret qualitative and quantitative data and convert into infographics, reports, tables, dashboards, and graphs

S13. use a range of analytical techniques such as data mining, time series forecasting, and other modelling techniques to identify and predict trends and patterns in data. the principles of descriptive, predictive and prescriptive analytics



Behaviours

B1. maintain a **productive, professional, and secure working environment**

B3. Works **independently and collaboratively**

B5. identifies issues quickly, enjoys **investigating and solving complex problems and applies appropriate solutions**. Has a strong desire to push to ensure the true root cause of any problem is found and a solution is identified which prevents recurrence

B7. demonstrates an **ability to adapt to changing contexts** within the scope of a project, direction of the organisation or Data Analyst role.

B2. shows initiative, being resourceful when faced with a problem and **taking responsibility for solving problems** within their own remit

B4. Logical and analytical

B6. demonstrates resilience by **viewing obstacles as challenges and learning from failure**.

KSBs & Assessments



KSBs distribution across Assessments

	Assessment 1	Assessment 2
Knowledge	K3, K4, K8, K9, K11, K12	K1, K2, K5, K6, K7, K10, K13, K14, K15
Skills	S1, S2, S3, S4, S8, S12, S15	S5, S9, S10, S11, S13, S14
Behaviours	B3, B4	B1, B2, B5, B6, B7

KSBs in Assessment 1 can still be evidenced in 2 but must be evidenced in 1 and vice versa.

KSB failed in one Assessment Method **cannot** be then demonstrated in the other Assessment Method.



Activity

In breakout rooms:

- Go through the Standards.
- Discuss amongst yourselves which ones you think are going to be most challenging.



Break!



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Evidence



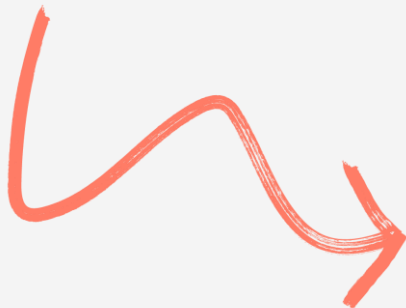


What counts as Evidence?

Your best work:

- Show you applying your learning and skills
- Contain **substantial real work tasks** that you have completed.

Your account of your learning and skills development journey





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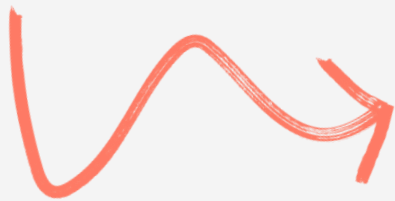
What counts as
Evidence?





What counts as Evidence?

- Written accounts of your work
 - Projects (Applying skill/s)
 - Ad-hoc tasks
- Recordings
- Testimonials
- Performance Reports





EPA Touchpoints

EPA TP 1:

- Between Month 7 - 9
- 2+ Projects

EPA TP 2

- Month 13
- Portfolio should be ready
- Up to 10 projects
- Any extra Reflective Journals



**FAQ's are
here**



How do I choose what to write up?

The standards for your apprenticeship fall into two groups:

→ **Technical (Knowledge and Skills)**

- Analytics specific
- Requires the use of specialist software or code

→ **Personal (Behaviour)**

- Wider business understanding
- Interactions with others





Technical

Interpersonal



Technical

Statistical analysis

Automation

Linear Regression

Data Mining

**Time Series (with
forecasting)**

**Transferring a process
from Excel to Python,
R, SQL etc**

Regular Reports

Data Wrangling

Ad hoc reports

**Data Wrangling
(for a colleague)**

Dashboards

Adaptability(!)

**Stakeholder
Management**

Managing conflict

**Taking the initiative/
leading a project**

**Commercial
awareness**

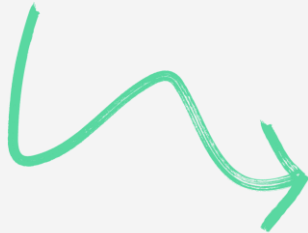
**Strategic thinking
and problem
solving**

Presentations

Interpersonal



S13. Use a range of analytical techniques such as data mining, time series forecasting, and other modelling techniques to identify and predict trends and patterns in data





Pass Criteria? (minimum)	Possible evidence you can provide
Explains how they have applied analytical techniques for data mining, time series forecasting and other modelling techniques.	



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How do I write up
my Evidence?





Where do I start my Portfolio?

Writing a strong introductory section at the beginning of your portfolio will allow you to reduce the amount of context you are required to provide in your projects.

Your introduction should detail:

- The industry you work in
- How your company is positioned within that industry
- What your team's function is within the business
- Your (analyst) responsibilities in your role





How should I write up a Project?

Your project is intended to prove to the assessor that you have acquired the skills and knowledge required of a Data Analyst.

You must ensure that you cover:

- What you did
- How you did it
- Why you chose that approach
- Who you interacted with throughout

While making sure you are demonstrating the required skills, knowledge and Behaviours





Good Practices

There are a number of ways to strengthen your portfolio write ups, including but not limited to:

- Use 'I' rather than 'we'
- Avoid acronyms or industry jargon
- Use a few sentences instead of one long one
- Always comment on a screenshot/visualisation you've included
- Use language from the apprenticeship standards e.g. external stakeholder rather than client





What structure should I use?

It is recommended that your projects to be written using the STAR format.



Situation

Task

Action

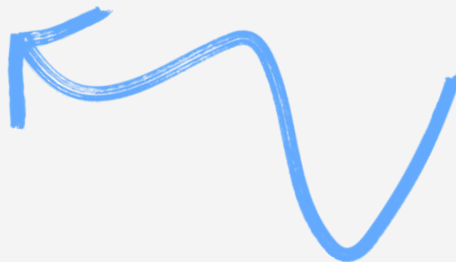
Result



Situation

Where you set the scene for the scenario you are going to describe:

- What is the business context?
- Who are the stakeholders?
- What is your role within the team/company?





Situation

“I work as an analyst in the Specialist Testing team of an exam board, analysing the test statistics from a series of multiple choice questions. I ensure that students are never disadvantaged by performing statistical tests to identify poorly designed questions. My work is monitored externally by IFATE and DfE and I must submit my reports to the Qualification Delivery Assessment Manager by the 22nd of each month.”



Task

Where you show the purpose of your scenario:

- What was the problem you were trying to solve?
- Why should it be solved?
- Is there a commercial impact?





Task

“The purpose of this task is to reduce workload in my team, to allow for greater time to be spent editing new assessment prior to review; reducing the time external consultants are required and therefore lowering our operating budget.”



Action

Where you describe what actually happened:

- 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...

Paper Code	Number of Learners	Number of Centres	Question Number	Key		a		b		c		d		KR-20	0.67
				p-value	Point Biserial	p-value	Point Biserial	p-value	Point Biserial	p-value	Point Biserial	p-value	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	Pass Rate	72.9%
			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									

Point biserial correlation

$$r_{pb} = \frac{(\bar{y}_1 - \bar{y}_2) \sqrt{pq}}{s_{d_y}}$$

KR-20 measurement

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

Pass rate

$$PR = \frac{\sum \text{Passed}}{\sum \text{Failed}} \times 100$$



Action...

Export and include your code!

Code should be:

→Commented out

→Properly formatted

→Correct

```
'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

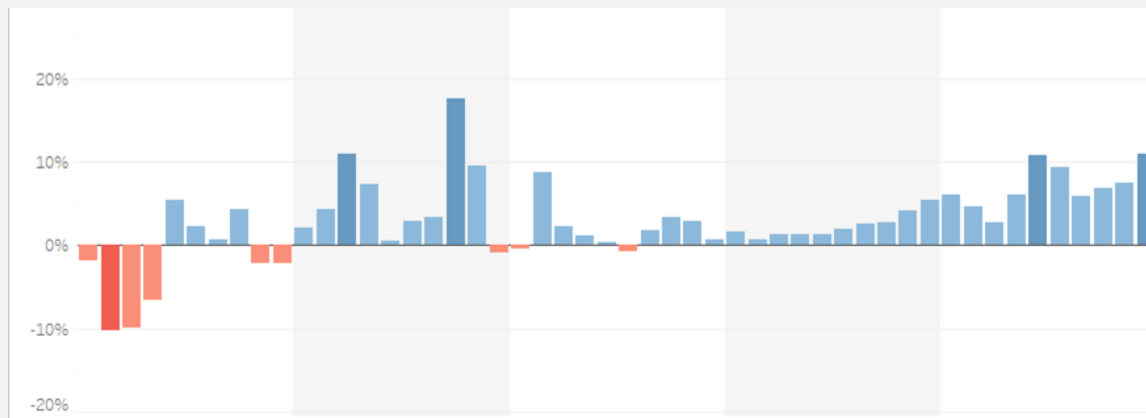
    End If
```



Action...

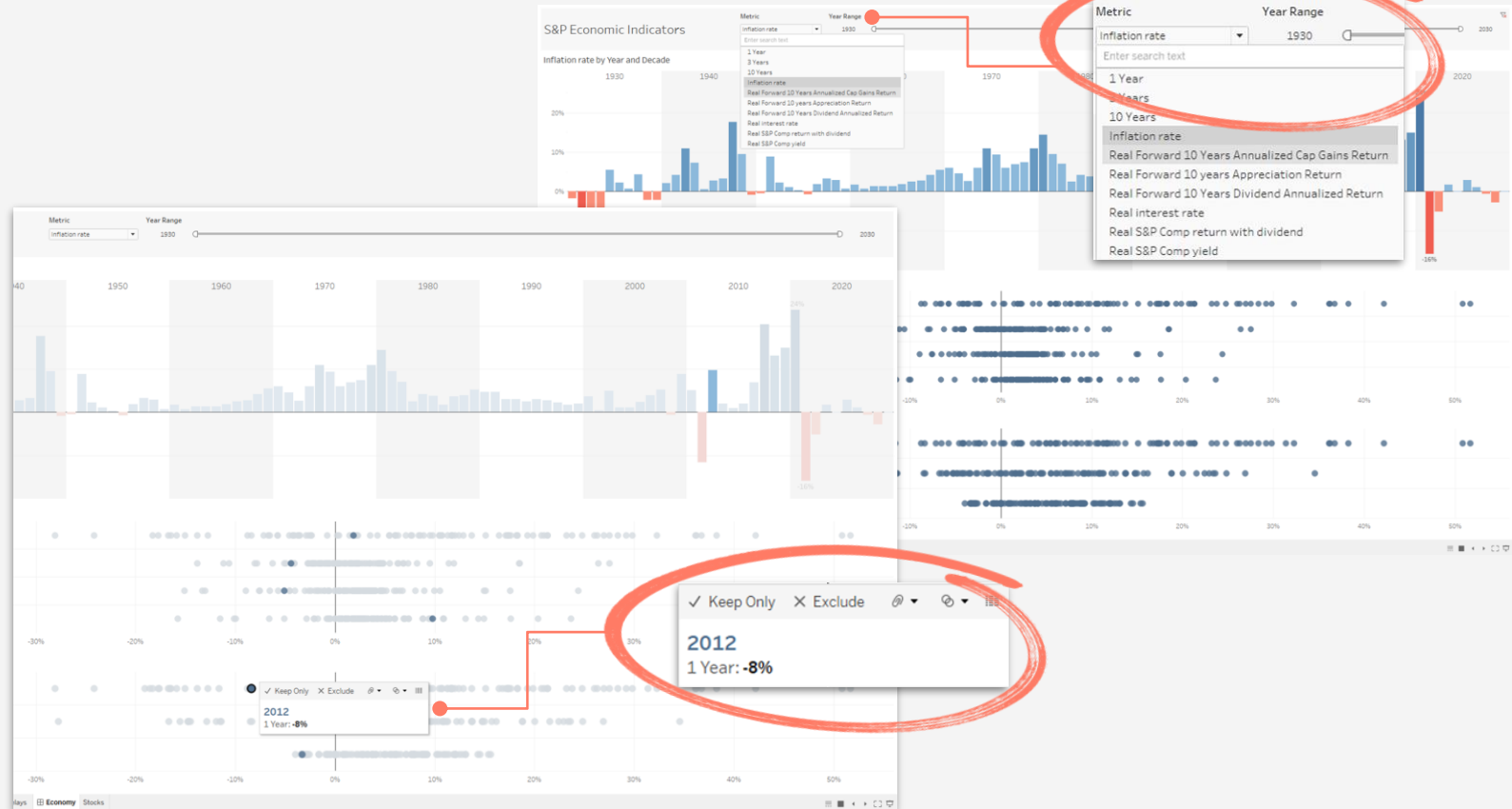
Visualisations require:

- Titles!
- Axis labels
- Commentary





Action...





Action...

Remember that the Assessor does not work in your industry, and if you are using a particularly advanced algorithm they may have no direct experience.

So make sure you explain each step.



Result

Where you show impact of the activity:

- What were the key achievements/insights?
 - Was there a commercial impact to your work?
- Were you successful in your goal?
- Would you approach the problem differently next time?
- Could you extend your project?





Result

“The automation of this analysis reduced the runtime to 30 seconds, thus saving approximately 90 mins per subject, per team member. As the suite of subjects covered is over 150 this significantly reduced the administrative load on my team, as I had hoped.

If I was to automate a similar process I would look to eliminate the use of PivotTables and replace them with a series of steps in PowerQuery.

The automation was harder than initially anticipated because the datasets required did not have a common naming convention; which required me to write a number of...”



Break!



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Project Template





TASK



- 
- Go on Applied.
 - Navigate to the Data Fellowship EPA
 - Download the DF Project Template
 - Open file.



Portfolio Project Template

- Introduction
- Standards Demonstrated (Skills and behaviour)
- Action
- Results
- Knowledge demonstrated

Your LM needs to sign a declaration for every project you complete



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Evidencing Standards





Evidencing Standards

While you are writing up your project, think about the standards you have demonstrated in the project and include it in your write up.

You can evidence multiple standards in a single project.

A project can contain evidence of Knowledge, Skills, and Behaviours.

It is recommended to have about 10 evidences (write-ups) in your portfolio.





Activity



- Navigate to [Applied](#)
- Download the Sample Project Exercise file
- In Breakout rooms, identify the KSBs that have been demonstrated.



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How will my evidence
be graded?





How will my Evidence be Graded?

Your evidence will be graded by an Independent Assessor from Accelerate People (AP), not your coach.

They will review all of your evidence and then return a grade that reflects your performance.

You will be assessed on both assessment methods and grade each assessment method separately.





Take Home Task



- Think about a project you have completed recently (or working on at the moment)
- Using the Project template, write up the project
- Track the KSBs you have demonstrated (does not have to be all of it)



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Finished!

