Digital Production, Design and Development

Mock!

Your ESP

Task 1 (3 Hours)
- Gantt Charts
- Cost Plan
- Rational

Task 2 (3 Hours)

- Fixing Defects
- Documentation

Task 3 (3 Hours)

-Application of logical thinking
- Designing a Solution

Task 4a (4 Hours)

- Code Organization
- User Experience

Task 4b (1 Hour and 30 mins)

-Evaluation Comparison to designs
- Future Development

What is ESP task 4a

4 Hours - 34 Marks

This task requires you to develop and extend an **existing Python program** for a real-world business scenario.

In Task 4a, you are given:

- a CSV dataset containing 12 weeks of currency exchange data, and
- a partially completed Python script written by a senior developer.

Your job is to modify and enhance the code so that it:

As required per the requirements set out

What is ESP task 4a

This is going to use Matplotlib & Pandas

Additional libraries and commands

For questions in the Employer Set Project, students will also be expected to have a working knowledge of these additional libraries:

pandas

Students should be able to use the *pandas* library to perform data analysis on a given data file (.csv). They should be able to:

- import data from a provided .csv file
- create and manipulate data frames which utilise all or part of the imported data (as necessary to meet given requirements)
- perform mathematical operations and statistical analysis on the contents of a data frame (or associated variable), such as:
  - identifying trends and patterns over time
  - calculating a total or average from a range of data
  - counting the number of occurrences of a specific item of data.

Matplotlib

Students should be able to use the *matplotlib* library to format and output data, in conjunction with the *pandas* library, as part of analysis on a given data file (.csv).

They should be able to:

- select data and output to appropriate graphs to meet the requirements of a brief
- format graph outputs to ensure they are meaningful and easy to use (e.g. axis
- labels, colour schemes, legends etc.).

No internet connection
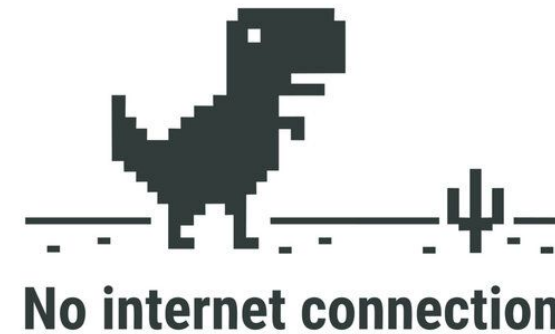
Lets review

Set Task Brief

The design ideas for the solution that you worked on in Task 3 have been reviewed by your manager.

A Senior Developer has coded the solution, and your manager has presented it to Bote Parcels.

Since then, Bote Parcels has requested some additional functionality to be added to further develop the solution.

Activity

The file Task4a_data.csv contains the data that will be used by the solution.

The file Task4a_BoteSupport.py contains the code that the Senior Developer has produced.

Develop the programming code for the data service so that it meets the new system and user requirements provided in the Set Task Information.

During development of the solution make sure that you:

- consider the security requirements and use secure coding principles and practices to mitigate against potential threats and vulnerabilities

- ensure that your code is maintainable, readable and functional

- follow accepted programming conventions.

During this task, you do **not** need to formally document your testing.

(34)

This is your context

This is where it asked you to follow PEP8, comment & don't use Global!

Lets review

Set Task Information

Bote Parcels has provided the new system requirements. These are:

- The existing code allows users to see the total number of different types of issues reported by customers.

- The solution **must** also identify trends and patterns for:

  - time taken to resolve different types of issues

  - issues and resolutions based on region.

- The solution **must** be secure.

Bote Parcels has also provided user requirements for the solution. These are:

- be easy to use

- display information in a meaningful way

- make use of appropriate textual, numerical and graphical output in a way that would be relevant to the end user.

Note – the data **only** shows support requests that have been identified by the support team as resolved or closed.

Extra functionality requested

Matplotlib?
fstrings

Assessment focus	Band 0	Band 1	Band 2	Band 3	Band 4
	0	1–2	3–4	5–6	
Functionality	No rewardable material	The solution implements code with some functionality but some major errors still persist.	The solution implements mostly functional code but some minor errors still persist.	The solution implements functional and efficient code throughout.	
	0	1	2	3	
Logic and programming structures	No rewardable material	The code uses some precise logic and programming structures which would result in some correct outcomes.	The code uses mostly precise logic and programming structures which would result in sufficiently correct outcomes.	The code uses some precise logic and programming structures which would result in some correct outcomes.	
	0	1	2	3	
Robustness	No rewardable material	The code handles some common user errors.	The code handles most common user errors.	The code thoroughly handles common, and most unexpected, user errors.	

Assessment focus	Band 0	Band 1	Band 2	Band 3	Band 4
	0	1–2	3–4	5–6	
Security	No rewardable material	The code mitigates against some common vulnerabilities as a result of some effective application of secure coding practices.	The code mitigates against most relevant vulnerabilities through mostly effective application of secure coding practices.	The code thoroughly mitigates against relevant vulnerabilities through effective application of secure coding practices.	
	7–8	1–2	3–4	5–6	7–8
Code organisation	No rewardable material	The code is partially reusable by a third party but would present significant difficulties through the use of: • inconsistent naming conventions • limited logical organisation • limited informative commenting.	The code is partially reusable by a third party but would present some minor difficulties through the use of: • some consistent naming conventions • some logical organisation • some informative commenting.	The code is reusable by a third party and would present only a few minor difficulties through the use of: • mostly consistent naming conventions • mostly logical organisation • mostly informative commenting.	The code is easily reusable by a third party through the use of: • consistent and appropriate naming conventions • fully logical organisation • highly informative commenting.

Assessment focus	Band 0	Band 1	Band 2	Band 3	Band 4
	7–8	1–2	3–4	5–6	7–8
User experience	No rewardable material	Basic user experience is provided through limited effective use of: • input handling • user guidance and error messages • outputs.	Adequate user experience is provided through somewhat effective use of: • input handling • user guidance and error messages • outputs.	Good user experience is provided through mostly effective use of: • input handling • user guidance and error messages • outputs.	Excellent user experience is provided through consistently effective use of: • input handling • user guidance and error messages • outputs.

Review and start ESP Task 4a

Bote Parcels has provided the new system requirements.

These are:
- The existing code allows users to see the total number of different types of issues
reported by customers.
- The solution must also identify trends and patterns for:
  - time taken to resolve different types of issues
  - issues and resolutions based on region.
- The solution must be secure.