



Vendor: Python Institute

Exam Code: PCED-30-02

Exam Name: PCED - Certified Entry-Level Data Analyst with Python

Version: DEMO

QUESTION 1

You are analyzing survey results from students about their favorite colors. The list `colors` stores individual responses:

```
colors = [
    "blue", "green", "blue", "red", "green",
    "blue", "yellow", "red", "purple", "green",
    "blue", "orange", "yellow", "blue", "green"
]
```

You want to:

- find the **number of unique colors** mentioned using NumPy, and
- determine **how often each color was chosen** using `Counter`.

Which code snippet correctly performs both tasks? Select the best answer.

- A. `from numpy import unique`
`from collections import Counter`

`unique_colors = len(unique(colors))`
`color_counts = Counter(colors)`
- B. `import numpy as np`
`from collections import Counter`

`unique_colors = Counter(colors)`
`color_counts = sum(np.unique(colors))`
- C. `import numpy as np`
`from collections import Counter`

`unique_colors = np.unique(colors)`
`color_counts = Counter(set(colors))`
- D. `import numpy as np`
`from collections import Counter`

`unique_colors = len(set(colors))`
`color_counts = np.unique(colors)`

Answer: A

Explanation:

`numpy.unique` returns the distinct values in the list, and taking its length gives the number of unique colors. `Counter(colors)` correctly counts how many times each color appears in the responses.

QUESTION 2

A teacher wants to compare the number of students in different school clubs:

Club	No. of Students
Chess	25
Drama	40
Robotics	30
Basketball	45
Soccer	25
Guitar	15

Which type of chart would be most appropriate to show this comparison? Select the best answer.

- A. Line chart
- B. Pie chart
- C. Bubble chart
- D. Bar chart

Answer: D

Explanation:

A bar chart is best for comparing quantities across distinct categories, such as the number of students in each club, because it clearly shows differences in counts side by side.

QUESTION 3

Given the following string:

```
text = "Report2024Final"
```

Which of the following statements are entirely correct? (Choose two.)

- A. `text.capitalize()` changes Final to lowercase, and `text.find("l")` returns True
- B. `text[6:8].isdigit()` returns True, and `text.endswith("Final")` returns True
- C. `text.isalpha()` returns True, and `text.find("2024")` returns True
- D. `text[-6].isdigit()` returns True, `text.startswith("r")` returns True
- E. `text[0:6].isalpha()` returns True, and `text.find("2024")` returns 6
- F. `text.capitalize()` changes Report2024Final to REPORT2024FINAL, and `text.find("2024")` returns 6

Answer: ABE

Explanation:

The slice `text[6:8]` is "20", which contains only digits, and the string ends with "Final". The first six characters are "Report", which are all alphabetic, and "2024" begins at index 6.

QUESTION 4

You are reviewing a report that compares the number of weekly client meetings and project completion rates across teams. The table below summarizes the data for each team:

Team	Client Meetings (per week)	Projects Completed (last month)
Alpha	5	6
Beta	4	3
Gamma	6	6
Delta	8	5
Epsilon	3	2
Zeta	7	4
Theta	5	6
Omega	9	3

Which statement best describes the data shown above? Select the best answer.

- A. "Gamma and Omega were outliers that inflated the meeting average, but most teams finished about 3 projects per month."
- B. The more meetings a team had, the more projects they finished, especially in high-performing teams like Omega and Delta."
- C. "Teams with 5-6 weekly meetings tended to complete more projects than those with very high or very low meeting counts."
- D. "Project completion numbers were nearly identical across all teams, averaging 3.25 per month."

Answer: C

Explanation:

Teams with moderate meeting counts around 5–6 per week (such as Alpha, Gamma, and Theta) completed among the highest numbers of projects, while teams with very high or very low meeting counts tended to complete fewer projects, indicating that moderate meeting frequency is associated with higher project completion.

QUESTION 5

You want to safely read the contents of a file named `records.txt` and store them in a list. Your requirements are:

- The file should be automatically closed after reading,
- The code should check whether the file exists before opening it, and
- It should handle missing file errors gracefully.

Which of the following is the most appropriate way to accomplish this task in Python? Select the best answer.

- A.
- ```
import os

if os.path.exists("records.txt"):
 f = open("records.txt", "r")
 data = f.readlines()
 f.close()
else:
 data = []
```
- B.
- ```
import os

if os.path.exists("records.txt"):
    f = open("records.txt", "r")
    data = f.readlines()
else:
    data = []
```
- C.
- ```
import os

try:
 f = open("records.txt", "r")
 data = f.readlines()
 f.close()
except FileNotFoundError:
 data = []
```
- D.
- ```
import os

try:
    with open("records.txt", "r") as f:
        data = f.readlines()
except FileNotFoundError:
    data = []
```

Answer: D

Explanation:

It uses a context manager to automatically close the file after reading and wraps the operation in a try-except block to gracefully handle a missing file error, assigning an empty list if the file is not found.

QUESTION 6

A government agency collects citizen data for various public services.

What is the primary reason for emphasizing careful data management throughout the entire data lifecycle in this context? Select the best answer.

- A. To enable seamless sharing of anonymized citizen information with other governmental bodies for collaborative initiatives.

- B. To guarantee the long-term availability and integrity of crucial citizen datasets for future policy formulation and evaluation.
- C. To uphold data quality for effective service delivery, safeguard citizen privacy and prevent misuse, and comply with data protection laws.
- D. To streamline the initial capture of citizen details and minimize the administrative burden on both staff and the public.

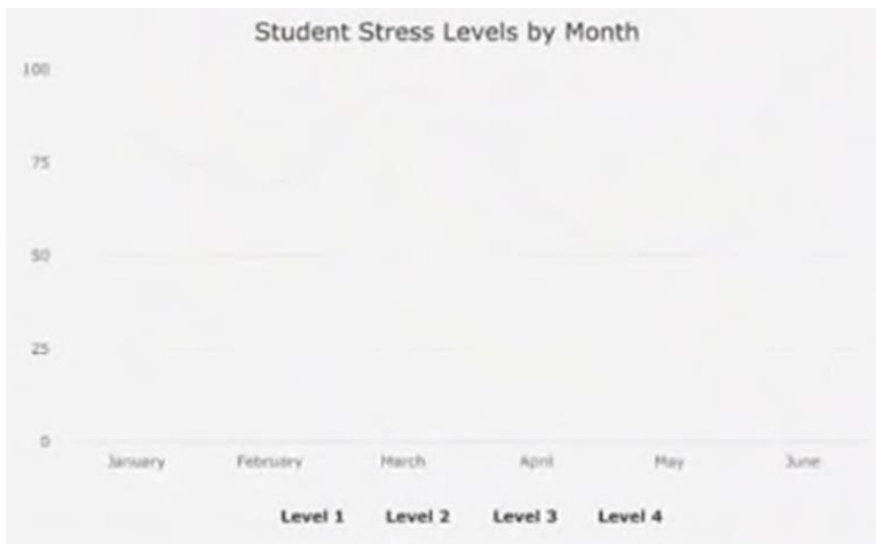
Answer: C

Explanation:

Careful data management across the entire lifecycle ensures high data quality for reliable public services, protects sensitive citizen information from misuse, and maintains compliance with legal and regulatory data protection requirements.

QUESTION 7

You are creating a presentation slide to communicate findings about student stress levels across four categories over a six-month period. You include the following line graph in your presentation:



Your goal is to help your audience clearly understand trends in stress levels over time.

What is the highest problem with this visual presentation? Select the best answer.

- A. The graph doesn't explain what each stress level means or show exact values for each month, which limits interpretation.
- B. The lines are too light and similar in color, making it difficult to distinguish between trends.
- C. The font used in the chart is hard to read; using larger, uppercase text would improve clarity.
- D. The chart should be in 3D format to show depth and highlight differences more clearly.
- E. The months should be replaced with week numbers to provide more detailed insight.

Answer: B

Explanation:

The lines are very light and visually similar, making it difficult to clearly distinguish between the different stress level trends, which directly reduces the effectiveness of the visualization in communicating patterns over time.

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