STUDENT ID:	FULLNAME:	SIGNATURE:

Q.1) a) Explain the difference between integer-based indexing and label-based indexing in pandas DataFrames.

b) What does the following code print to the console?

```python
import pandas as pd

data = {'Age': [25, 30, 22, 38],
        'City': ['New York', 'Los Angeles', 'Chicago', 'Miami']}
df = pd.DataFrame(data, index=['Alice', 'Bob', 'Charlie', 'David'])

x = df.iloc[1, :]
print(x)
```

```python
y = df.loc['Bob', 'Age']
print(y)
```

```python
u = df.iloc[:, :2]
v = df.iloc[-2:]
print(u)
```

```python
print(v)
```

```python
z = df.loc[['Alice', 'Charlie'], :]
print(z)
```

Q.2) Briefly explain the key steps involved in the data science workflow, from problem definition to model deployment.

Q.3) Data types like temperature (Celsius or Fahrenheit) and time (seconds, minutes) are often used for measurement. Can you classify these as both interval and ratio data types? Explain why or why not.