STC 137 Worksheet Tutorial X

1. For each of the following examples, classify the data type as **quantitative** or **qualitative**, and specify whether it is **discrete**, **continuous**, or **categorical**:
   1. Number of books on a shelf.
   2. The colours of cars in a parking lot.
   3. The weight of apples in kilograms.
   4. Ratings of a movie on a scale of 1 to 5.
   5. A list of student names.
   6. Average monthly rainfall in millimeters.

Fill in the table below:

|  |  |  |
| --- | --- | --- |
| **Example** | **Quantitative/Qualitative** | **Discrete/Continuous/Categorical** |
| **1** |  |  |
| **2** |  |  |
| **3** |  |  |
| **4** |  |  |
| **5** |  |  |
| **6** |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. Match the data examples below with their variable types (**integer**, **float**, or **string**):
2. Age of a person (e.g., 25).
3. Temperature (e.g., 23.5 degrees Celsius).
4. Names of countries.
5. Number of steps taken in a day.
6. Price of an item (e.g., $19.99).

Fill in the table:

|  |  |
| --- | --- |
| **Example** | **Variable Type** |
| **1** |  |
| **2** |  |
| **3** |  |
| **4** |  |
| **5** |  |
|  |  |
|  |  |
|  |  |

1. For each data type listed below, write one example of where it might be used in real life:
2. **Time Series Data**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. **Image Data**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. **Spatial Data**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. **Audio Data**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. **Video Data**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. Look at apps or tools on your smartphone. Identify examples of data types they collect or display. Complete the table below:

|  |  |  |
| --- | --- | --- |
| **App/Tool** | **Data Collected** | **Data Type (Quantitative/Qualitative, etc.)** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Reflection Questions**

1. Why is it important to correctly identify and classify data types in research and analysis?
2. What challenges might arise if a dataset contains mixed data types?
3. Provide an example of a situation where using the wrong variable type (e.g., treating a string as a float) could lead to errors.

**Summary**

Understanding data types is essential for effective data collection, storage, and analysis. Key data types include:

* **Quantitative Data**: Numeric, measurable values (discrete or continuous).
* **Qualitative Data**: Descriptive, categorical information.
* **Variable Types**: Integer, float, and string for storing data in computing.
* **Specialised Data Types**: Time series, image, spatial, audio, and video data for more advanced applications.

By identifying and correctly classifying data, you can ensure accurate and meaningful analysis, whether for simple datasets or complex multimedia projects. Use this worksheet to practice recognizing and applying these concepts in real-world scenarios.