

**YouTube Conundrum!**

**Watch this video on Data Types**

[**https://www.youtube.com/watch?v=HwVtJFVY7\_k**](https://www.youtube.com/watch?v=HwVtJFVY7_k)

**Part 1**

Imagine that you want to collect various metrics on a YouTube video that you uploaded that garnered significant attention, with tens of thousands of likes and over 10 million views. **You want to store the title, view count, number of likes, number of dislikes and your username “STUDENT001.”**

Unfortunately, due to your lazy lifestyle, you feel that you do not want to categorize this information yourself and want a program to do it for you. With a low grunt and frustration, you hesitate and decide to delve into programming to solve this painstaking task to save five minutes of your time. Let us think about this situation in a programming context by storing all these attributes in variables and discussing the following questions. You are free to brainstorm answers to these questions with your fellow classmates.

1. For each of these categories determine the type of data it would be (primitive, non-primitive, composite) and then the actual type of the data (text, int, float, video)

* **Title**:
  + **Type**: Non Primitive
  + **Explanation**: A title is usually a string of characters, and in most programming languages, strings are considered primitive data types.
* **View Count**:
  + **Type**: Primitive
  + **Explanation**: The view count is a numerical value, typically an integer, representing the number of views. Integers are primitive data types.
* **Number of Likes**:
  + **Type**: Primitive
  + **Explanation**: Similar to the view count, the number of likes is a numerical value, usually an integer, and integers are primitive data types.
* **Username ("student001")**:
  + **Type**: Non Primitive
  + **Explanation**: A username is a string of characters. Strings are considered primitive data types in most programming languages.

### **Summary:**

* **Title**: Non Primitive (String)
* **View Count**: Primitive (Integer)
* **Number of Likes**: Primitive (Integer)
* **Username**: Non Primitive (String)

1. What would differentiate each of these variables in terms of value and type?
   1. They are all primitive data types
2. Suppose that you also decided to change your username that day and added an extra “1” to your username. What would happen if you tried to add a “1” to the variable that stores your username, if even feasible?

If the variable storing your username is a string and you add a "1" (also a string) to it, the result will be the concatenation of the two strings.

For example, if your username is stored in a variable called username and has the value "user123", then username + "1" will result in "user1231".

1. Finally, imagine that robots take over the world and force you to change your name to a series of numbers that no longer contain any non-numerical characters. You are forced to update your “name” variable. What is the best approach to doing so: creating a new variable or overwriting your already-existing variable that is of a different data type?

Evaluate whether the new value represents a different entity or concept than the original variable. If it does, creating a new variable with an appropriate name is generally the better choice for clarity and maintainability.

**Part 2**

Go back to the worksheet you made in Section 1 (Lesson 1) Part 2 Understanding the roll of data in A & R and Sports Analytics. (see example table below)

**Pick one sports data site and one Music data site**.

| **Name of website** | **URL** | **Data Contained** | **Other information or notes including API access** |
| --- | --- | --- | --- |
| Ex  WNBA Stats | <https://stats.wnba.com/> | Team, age, GP, W, L, Min, PTS, FGM, FGA…. A lot more data | Filters to search by name or years. Can’t API directly, but could paste in a webpage. I searched and the API is on a diff website <https://sportsdata.io/developers/api-documentation/wnba> |

For each of the websites you picked, make a new table where you take the values from “Data Contained” column below and tell the data type and give an example, you may need to go back to the site to look at it.

You will need at least 8-10 examples of data types from this source.

EX: Website sports - WNBA

| Statistic/Data | Data Type (primitive, non -primitive…) | Data Type for computer | Example value |
| --- | --- | --- | --- |
| Name | Non-primitive | Character | Chennedy Carter |
| Team | Non-primitive | Character | Chicago Sky |
| Age | primitive | Integer | 26 |
| GP | primitive | Integer | 7 |
| W | primitive | Integer | 3 |
| L | primitive | Integer | 4 |
| PTS | primitive | Float | 12.0 |
| FGM | primitive | Float | 5.1 |
| FGA | primitive | Float | 9.3 |
| Mins | primitive | Float | 18.2 |