DATASPACE ACADEMY

PYTHON: VARIABLES AND CASTING
Assignment 2

Instructions: Write Name in the markdown on top of the notebook

VARIABLES

1. Declare an integer variable `age` with the value 25.

2. Create a string variable `name` with your name as its value.

3. Declare a list variable `fruits` containing three fruit names of your choice.

4. Write code to swap the values of two variables, `a` and `b`, without using a temporary variable.

5. Create a float variable `price` with the value 19.99.

6. Define a boolean variable `is_student` and set it to `True`.

7. Create a tuple variable `coordinates` that stores the latitude and longitude of a location (e.g., (40.7128, -74.0060)).

8. Declare a dictionary variable `student` with keys "name" and "age" and set their values accordingly.

9. Write a Python program that calculates the area of a circle with a given radius. Use a variable `radius` to store the radius value.

10. Create a list variable `numbers` containing integers from 1 to 10 using list comprehension.

11. Define a variable `is_valid` and set it to `False`. Then write code to toggle its value to `True`.

12. Declare a string variable `sentence` with a sentence of your choice.

13. Write a program that calculates the sum of all numbers from 1 to 100 using a variable `total_sum`.

14. Create a list variable `grades` containing five test scores as floating-point numbers.

15. Define a variable `greeting` and assign it the value "Hello, World!".

16. Declare a tuple variable `months` containing the names of the twelve months of the year.

17. Write code that increments an integer variable `counter` by 1 and then prints its value.

18. Create a dictionary variable `book` with keys "title", "author", and "year" to store information about a book.

19. Define a variable `pi` and assign it the value of the mathematical constant π (pi).

20. Declare a list variable `colors` containing the names of five different colors.

21. Write a program that calculates the area of a rectangle using variables `length` and `width`.

22. Create a dictionary variable `person` with keys "first_name" and "last_name" to store a person's name.

23. Define a variable `temperature` and assign it a value in Celsius. Convert it to Fahrenheit and store the result in another variable.

24. Write code that appends a new item to a list named 'shopping_list'.

25. Declare a variable `is_raining` and set it to `True`. Then write code to change its value to `False`.

TYPE - CASTING

1. Write a Python program that takes an integer as input and converts it to a float.

2. Create a program that prompts the user for their age as a string, converts it to an integer, and then checks if they are eligible to vote (18 or older).

3. Write code to convert a float to an integer and round it to the nearest whole number.

4. Create a program that takes a user-provided string, converts it to lowercase, and checks if it contains the word "python."

5. Write a program that takes a user-provided string containing a number (e.g., "42") and converts it to an integer.

6. Create a Python script that converts a list of integers into a list of strings.

7. Write a program that calculates the area of a triangle using user-provided string inputs for the base and height. Convert these strings to floats for the calculation.

8. Create a program that takes a user-provided number in string format and converts it to a binary number in integer form.

9. Write code that converts a list of strings representing numbers (e.g., ["3", "5", "7"]) into a list of integers.

10. Create a program that takes a user-provided string containing a decimal number (e.g., "3.14") and converts it to a float.

Remember to provide clear comments and explanations in your code for each question.

"Have fun with your assignment" Randrita :)…… …..