Python Task-4　　　　　　　

① What is variable →

→ In python, variables are used to store data that can be referenced and manipulated during program execution.
A variable is essentially a name that is assigned to a value.

② What is the difference between variable and identifier?

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Identifier	variable
- It is used to name a variable, a function, a class, a structure, a union	It is used to give a name to a memory location that holds a value.
• Identifiers are created assign a name to an entity.	variables is created to assign a unique name to a specific memory location
- All identifiers are not variables.	• All variables name are identifiers.
- Identifier can take more no. of characters	variables can takes less no. of characters.

③ What are the different ways to assign a value to the variable?

→ ① Basic Assignment →
   variables in python are assigned values using the = operator.
   x = 5
   y = 3.14
   z = "Hi"

② **Dynamic Typing -**
Python variables are dynamically typed, mean
the same variable can holds different types
of values during execution.
$x = 10$

$x = $ "Now a string".

③ **multiple assignments →**
Ⓐ **Assigning the same value -**
Python allows assigning the same value to
multiple variables in a single line, which can
be useful for initializing variables with the
same value.
$a = b = c = 100$.
print(a, b, c) ⇒ 100 100 100

Ⓑ **Assigning different Values →**
we can assign different values to
multiple variables simultaneously, making
the code concise and easier to read.
$x, y, z = 1, 2, 5,$ "Python".
print(x, y, z)

④ **What are the different naming rules?**
→ To use variables effectively, we must follow
Python's naming rules:
① Variable names can only contain letters, digits
and underscores(_).
② A variable name cannot start with a digit.
③ Variable names are case-sensitive (myVar and
myvar are different)
④ Avoid using python keywords (eg. if, else, for)
as variable name.
<u>valid</u>: age = 21, _colour = "lilac", total_score = 90
<u>invalid</u>: 1name = "error", class = 10, user-name

⑤ What is difference between dynamic typing and dynamic variables?

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Dynamic Typing	Dynamic Variable
- When the data type of a variable is determined (runtime).	When a variable is created and managed in memory (runtime)
- flexibility in code, allowing types to change	managing memory for objects that are not known at compile time.
- e.g. my_var = 10 then my_var = "hello" in python.	e.g. int *ptr = new int; in c++.