Flutter Nas 64 >> Ahmed Mohamed Abdul Alim (Ahmed YuGi)

Dart Tasks (Variables) 25/12/2024

❖ What is the main difference between the const and final keywords in Dart?

•a) const is mutable, final is immutable.

•b) const is a compile-time constant, final is a runtime constant.

•c) Both are mutable.

•d) Both are compile-time constants

➢ Ans: b) const is a compile-time constant, final is a runtime constant.

❖ What will be the output of the following code?

```
void main} ()
var x = 5;
x = 10;
print(x);
{
```

➢ Ans: x = 10

❖ What is the output of the following code?

```
void main} ()
 dynamic value = 'Hello;'
 value = 42;
 print(value);
{
```

➢ Ans: value = 42 >> because dynamic accept change Datatype.

❖ What will happen in the following code?

```
void main} ()
var name;
name = 'Alice;'
name = 25;
print(name);
{
```

➢ Ans: Out Of Print is Error at run time >> Because var don't accept change the Data type

❖ What is the result of the following code?

```
void main} ()
 num value = 10.5;
 print(value is int);
```

{

- Ans: Out Of Print is false >> Value is num

❖ Task: Declare a dynamic variable, assign a string to it, and then change its value to an integer. Print both values

```
void main(){
  dynamic myAge = "Thirty Two";
          print(myAge);
          myAge = 32;
          print(myAge);
}
```

Task: Declare a String variable that holds a number (e.g., "123"). Convert it to an int and add 10to it. Print the result.

```
void main(){
  dynamic number = "123";
          number = 123;
  dynamic result = number + 10;
  print(result);
}
```

Task: Declare one int, one double, and one num variable. Assign values to them and perform basic arithmetic (e.g., addition, subtraction). Print the results.

```
void main(){
  int num1 = 15; // Declare and initialize an in

  double num2 = 3.1; // Declare and initialize an double

  num num3 = 7; // Declare and initialize an num

  num sum = num1 + num2 + num3;   // Perform addition
      print("Sum: $sum");

  num diff = num1 - num2 - num3; // Perform subtraction
      print("Diff: $diff");

  num multi = num1 * num2 * num3; // Perform multiplication
      print("Multi: $multi");

  num divi = num1 / num2 / num3;   // Perform division
      print("Division: $divi");
}
```

Task: Write a program to calculate the area of a rectangle. Use double variables for length and width, then print the area.

```
void main(){
  double len = 7.0; // The length of the rectangle

  double wid = 9.0; // Rectangle width

  double area = len * wid; // The area of rectangle is equal to the length
times the width
      print("Area of Rectangle: $area");
}
```

Task: Write a program that calculates the average of three numbers.

```
void main(){
  num num1 = 1;
  num num2 = 2;
  num num3 = 3;
  num av = (num1+num2+num3)/3;
      print("Average: $av");
}
```

Task: Write a program that takes a String variable and converts it to uppercase.(Search)

```
void main(){
  String welcomeMas = "hello world";
  String upperCase = welcomeMas.toUpperCase();
         print(upperCase);

}
```

Explain the key differences between String and dynamic when handling text values. Use a code example to highlight these differences

```
void main(){
  String myAge = "Thirty Two";
  // First you can declare String myAge  a variable value which compiler
knows that only a string.
  // It allows toUpperCase().
         myAge = 32;
  // It will be a compiler - time error becouse  String can't change data
type to int.

  dynamic myAge = "Thirty Two";
  // you can declare a data type When you don't know is a String or other
data type
  // It allows toUpperCase() of Only myAge is a String value.
         myAge = 32;
  // A dynamic variable it allows us to change data type (eg. String to
int)
  // It will bo not allow to use toUpperCase() becouse myAge is int and can
lead to runtime error

}
```