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SECTION BLUE

Artificial intelligence lab 01
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TASK NO 1

Task no 1:

Differentiate between assignment operator and equality operator

ANSWER:

The assignment operator (=) and the equality operator (==) serve distinct purposes in programming. The assignment operator is used to assign a value to a variable, while the equality operator is used to compare two values for equality.

Assignment Operator (=):

The assignment operator is denoted by a single equal sign (=).

It assigns the value on the right side to the variable on the left side.

Example: `x = 5` assigns the value 5 to the variable x.

It is used for setting or resetting values stored in variables.

In programming, = is used for assignment, not for comparison.

Equality Operator (==):

The equality operator is denoted by two consecutive equal signs (==).

It checks whether two given operands are equal or not.

If the operands are equal, it returns true; otherwise, it returns false.

Example: `a == b` tests if the value stored in variable a is equal to b.

It is a relational or comparison operator used for comparing two values.

TASK 2:

```
int=20
float=30.4
string="uzair khan"
bool= True

print (int,float,string,bool)

20 30.4 uzair khan True
```

Task 3:

Explain the rules for variables name and use different variables name including special characters , numbers etc.

Answer:

RULES:

Variable names must begin with a letter, dollar sign (\$), or underscore (_).

They can only contain alphanumeric characters (a-z, A-Z, 0-9) and underscores.

Variable names are case-sensitive.

No spaces are allowed in variable names.

Variable names cannot be any programming language keywords.

TASK 4:

Declare and initialize multiple variables in a single line . Single variable with multiple values , multiple variables with single values. Each having at least two examples

```
: #single variable in multiple values
x, y, z = 10, 20.4, 30
q, p, f = 1, 2, 3

print(x,y,z)

#multiple variable with single values
a = b = c = 5
x = y = z = 5

print(a,b,c)
```

Task 5:

Perform arithmetic operations on integers and floating-point numbers

Adding, Subtracting, Multiplication and dividing two integer variables

Adding, Subtracting, Multiplication and dividing floating-point variables.

```
#addition of int and float
int =20
float =20.34
print ("sum of integer and float " , int + float)

#add mul and divide the two integer
int1=10
int2=7
print("sum of 2 integer " ,int1+int2)
print("Sub of 2 integer " , int1-int2)
print("divide of 2 integer ", int1/int2)

#adding and subtracting of 2 float

f1=3.13
f2=2.95
print("Add of 2 float",f1+f2)
print("sub of 2 float ",f1-f2)
```

```
sum of integer and float  40.34
sum of 2 integer  17
Sub of 2 integer  3
divide of 2 integer  1.4285714285714286
Add of 2 float 6.08
sub of 2 float  0.179999999999999972
```

Task 6:

A string literal is a sequence of characters enclosed in quotes. In Python, we can use either single quotes ('...') or double quotes ("...") to create a string.

Using single quotes

Using double quotes

Using double quotes when the string contains a single quote

Using single quotes when the string contains double quotes

```
#string in singal and double qoutes
sinleqoute='uzair khan'
doubleqoute="UZAIR KHAN"
print(sinleqoute)
print(doubleqoute)
```

```
uzair khan
UZAIR KHAN
```

Task 7:

The print() function is a built-in function in Python that allows you to output variables and other data to the console.

Example of using the print() function to output a

variable# Example of outputting multiple variables with

print()

Example of using f-strings to format output

Example of using f-strings to manipulate variables in output

```
#print function out the variable
```

```
q, p, f = 1, 2, 3
print(q, p, f)
```

```
# Using f-strings to format output
```

```
f"My name is  uzair , I am 21 years old, and my height is 6 centimeters."
```

```
1 2 3
```

```
'My name is  uzair , I am 21 years old, and my height is 6 centimeters.'
```

```
# Using f-strings to manipulate variables in output
```

```
num1 = 10
num2 = 5
output = f"The sum of {num1} and {num2} is {num1 + num2}."
print(output)
```

```
The sum of 10 and 5 is 15.
```

