Contents

1 Variables

- a=10 // integer – whole number
- a=12.3 //float – decimal number
- a=”value” //string – group of characters
- a=2j //complex
- a=true //Boolean – returns true or false

1.1 Variable Rules

- Should start with alphabets or underscore
- Should not start with a number
- Case insensitive
- Inbuilt keywords cannot be used
- snake_Case, camelCase, PascalCase can be used

2 id -prints the memory of a variable

Program 2.1 – printing the id of a variable

```
a=10
print(id(a))
```

o/p

```
2152329341520
```

When a=10,b=10 ; stores the value at same location

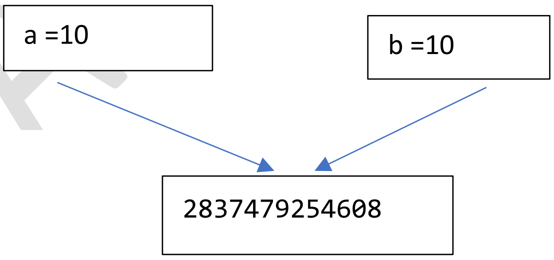
On print id(a), id(b) ; it will print the same location

Program 2.2 - – printing the id of variables with same memory allocation

```
a=10
b=10
print(id(a))
print(id(b))
```

o/p

```
2837479254608
2837479254608
```



a =10

b =10

2837479254608

3: type – prints the datatype

Program 3.1: prints the data type

```
#################Data Types###############
intva=10
floatva=10.2
strva="Water"
compval=2j
print("******data types*******")
print(type(intva))
print(type(floatva))
print(type(strva))
print(type(compval))

o/p
******data types*******
<class 'int'>
<class 'float'>
<class 'str'>
<class 'complex'>
```

Comments in python

# - single line comment

“”” “”” – Multiple line comment

4: Type Conversion

Converts from one data type to another

Program 4.1 : Type Conversion

```
###############Type conversion############
###########Converting int to float,String,comp##########
print("******Type conversion*******")
intva=10
convfloat=float(intva)
print(type(convfloat))
convstr=str(intva)
print(type(convstr))
convcom=complex(intva)
print(type(convcom))

o/p

******Type conversion*******
<class 'float'>
<class 'str'>
<class 'complex'>
```

5: Multiple variable Assignment

Can assign multiple values in a single line

Program 5.1: Multiple variable assignment

```
#####Multiple variable assignment######
print("*******Multiple variable assignment**********")
```

```
x,y,z=10,11,12
print("x value is ",x)
print("y value is ",y)
print("z value is ",z)
```

o/p

```
*******Multiple variable assignment**********
x value is  10
y value is  11
z value is  12
```

6: Mutiple variable with a single value

Program 6.1: Can assign single value to multiple variable

```
######Assignment a single value to multiple variable######
print("*************Assignment a single value to multiple variable******")
a=b=c=10
print("a value is ",a)
print("b value is ",b)
print("c value is ",c)
```

o/p

```
*************Assignment a single value to multiple variable******
a value is  10
b value is  10
c value is  10
```

7: Printing values using print function

Program 7.1: Printing values

```
##############Homework My name is Abi############
myName="Abi"
print("My name is ",myName)
##############Lucky Number########
luckyNumber=4
print("My lucky number is ",luckyNumber)
########Multipe value printing######
x,y,z=10,11,12
print(x,y,z)
```

o/p

```
My name is  Abi
My lucky number is  4
10 11 12
```

8: Operators

8.1 Arithmetic operator (+,-,*,/,//,%,**)

8.2 Assignment operator

8.3 Comparison operator

8.4 Logical operator

8.5 Identity operator

8.6 Membership operator

8.1 Arithmetic operator

+	Addition
-	Subtraction
*	Multiplication
/	Division
//	Floor Division
%	Modulo
**	exponential

Program 8.1.1 Arithmetic operator

```
#############Arithmetic operator***************
print("*********Arithmetic operator**********8")
a=3
b=2
c=a+b
print("Addition is ",c)
c=a-b
print("SUbtraction is ",c)
c=a*b
print("Multiplication is ",c)
c=a/b
print("DIvision is ",c) ###prints the quotient with decimal
c=a//b
print("Floor division is ",c) ###prints the quotient without decimal
c=a%b
print("Modulus/Reminder is ",c)
c=a**b
print("Exponential is ",c)
```

O/p

```
*********Arithmetic operator**********8
```

```
Addition is  5
SUbtraction is  1
Multiplication is  6
DIvision is  1.5
Floor division is  1
Modulus/Reminder is  1
Exponential is  9
```

8.3 Comparison Operator

==	Compares two values
>=	Greater than or equal to
<=	Less than or equal to
!=	Not equal to
>	Greater than
<	Less than

Program 8.3.1 Comparison operator usage

```
###############Comparison operator##########3
print("*****************Comparison operator*****")
a=5
b=10
print("Compare operator == ",a==b)
print("Less than operator < ",a<b)
print("Greater than operator >",a>b)
print("Less than or equal to operator <=",a<=b)
print("Greater than or equal to operator >=",a>=b)
print("Not equal to operator != ",a!=b)
```

o/p

```
*****************Comparison operator*****
Compare operator ==  False
Less than operator <  True
Greater than operator > False
Less than or equal to operator <= True
Greater than or equal to operator >= False
Not equal to operator !=  True
```

8.2 Assignment Operator

Program 8.2.1 Assignment Operator

```
a=10
b=15
a+=b
print("Addition Asisgnment operator ",a)
a-=b
```

```
print("Subtraction Assignment operator ",a)
a*=b
print("Multiplication Assignment operator ",a)
a**=b
print("Exponential Assignment operator ",a)
a/=b
print("Division assignment operator ",a)
a%=b
print("Modulus assignment operator ",a)
a//=b
print("Floor division assignment operator ",a)
```

o/p

```
Addition Asisgnment operator  25
Subtraction Assignment operator  10
Multiplication Assignment operator  150
Exponential Assignment operator  437893890380859375000000000000000
Division assignment operator  2.9192926025390626e+31
Modulus assignment operator  11.0
Floor division assignment operator  0.0
```