1.1-Variables

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0.1 Variables

Variables are fundamental elements in programming used to store data that can be referenced and manipulated in a program. In python, vaariables are created when you assing a value to them, and they do not need explicit declatation to reserve memory space. The declaration happencs automatically when you assign a value to a variable.

[1]:
```
# Creating and assinging the variable
age =32
height = 5.11
name = "Uditya"
is_student = True

# printing hte variables
print("Age:",age)
print("Height:",height)
print("Name:",name)
```

```
Age: 32
Height: 5.11
Name: Uditya
```

[2]:
```
# Naming Conventions
# Variable names should be descriptive
# The must start with a letter or an '_' and  contain letter, numbers and␣
 ↪underscore
# Variables names are case sensitive

first_name = "Uditya Narayan"
last_name = "Tiwari"

print(first_name, last_name)
```

```
Uditya Narayan Tiwari
```

[3]:
```
# Python is dynamically typed of a variable is dermined at runtime
age = 25 #int
height = 6.0 #float
name = "Uditya" # str
```

```
is_student = True # bool
```

[4]:
```
# Type conversion
age = str(age)
print(type(age))

# Convert the str to int
age = int(age)
print(type(age))
```

```
<class 'str'>
<class 'int'>
```

[5]:
```
# Dynamic Typing
# Python allows the type of a variable to change as the program executes
var = 10
print(var, type(var))

var  = 'Hello'
print(var, type(var))

var = 3.14
print(var, type(var))
```

```
10 <class 'int'>
Hello <class 'str'>
3.14 <class 'float'>
```

[6]:
```
# Taking input
age = int(input("What is the age: "))
print(age, type(age))
```

```
34 <class 'int'>
```

[7]:
```
# Simple Calculator
num1 = int(input("Enter the First number: "))
num2 = int(input("Enter the Second number: "))

Sum = num1+num2
Difference = num1-num2
Product = num1*num2
Quotient = num1/num2

print("Sum:",Sum)
print("Difference:",Difference)
print("Product:",Product)
print("Quotient:",Quotient)
```

```
Sum: 77
```

```
Difference: -9
Product: 1462
Quotient: 0.7906976744186046
```