Python Basics - Day 1

1. Variables & Data Types

```
x = 10  # int
y = 3.14  # float
name = "Primus"  # string
is_active = True  # boolean
items = [1, 2, 3]  # list
data = (4, 5, 6)  # tuple
info = {"age": 21}  # dict
```

Use type() to check type. Python is dynamically typed.

2. Type Casting

```
a = int("5")  # str -> int
b = float(4)  # int -> float
c = str(100)  # int -> str
```

3. Basic Operators

Arithmetic: +, -, *, /, **, //, %

Comparison: >, <, ==, !=

Logical: and, or, not

4. Strings

```
text = "Python"
print(text[0])  # indexing
print(text[-1])  # reverse indexing
print(text[0:3])  # slicing
print(text.lower())  # lowercase
print("Hello" in text)  # substring check
```

5. Lists

```
nums = [1, 2, 3]
nums.append(4)
```

Python Basics - Day 1

```
nums.remove(2)
for n in nums: print(n)
```

6. Dictionaries

```
person = {"name": "Primus", "age": 21}
print(person["name"])
person["age"] = 22
person["city"] = "Vadodara"
```

7. Conditionals

```
if age >= 18:
    print("Adult")
elif age > 13:
    print("Teen")
else:
    print("Child")
```

8. Loops

```
for i in range(5): print(i)
count = 0
while count < 3:
    print(count)
    count += 1
```

9. Functions

```
def greet(name):
    return f"Hello {name}!"
print(greet("Primus"))
```

10. Modules

```
import math
print(math.sqrt(16))
```

Python Basics - Day 1

```
from math import pi
print(pi)
```

Day 1 Task

Write a program that:

- Takes your name, age, and city as input
- Stores them in a dictionary
- Prints them in a formatted sentence