

# Variables & Data Types in Python - Complete Notes

This PDF contains table format notes, interview questions, and practice problems on Python variables and data types.

Data Type	Description	Example
int	Whole numbers	x = 10
float	Decimal numbers	pi = 3.14
bool	True / False	flag = True
str	Text	name = 'Aamir'
list	Mutable sequence	[1, 2, 3]
tuple	Immutable sequence	(1, 2, 3)
dict	Key-value pairs	{'a': 1}
set	Unique unordered values	{1, 2, 3}
NoneType	Represents no value	x = None

## Interview Questions

1. What is a variable in Python?
2. What is dynamic typing?
3. Difference between mutable and immutable?
4. What are Python data types?
5. What is None in Python?
6. What is the difference between list and tuple?
7. How do you check the type of a variable?
8. What is a dictionary?
9. What is type casting?
10. Explain Python's memory model for variables.

## Practice Problems

1. Create variables of all data types and print their types.
2. Convert a string '100' into int and float.
3. Write a program to swap two variables.
4. Create a list and modify its values. Can you modify a tuple?
5. Create a dictionary for a student with 3 key-value pairs.
6. Convert a list to a set. What changes?
7. Write code to check mutability of list vs tuple.

8. Create a complex number and print its real and imaginary parts.
9. Create a None variable and check its type.
10. Demonstrate dynamic typing with a variable.