1. What is Python?

2. Why is Python called an interpreted language?

3. How do you print something in Python?

4. What is the function used for user input in Python?

5. How do you comment in Python?

6. What are the different data types in Python?

7. How do you check the data type of a variable in Python?

8. What are escape characters in Python? Give an example.

9. How do you declare a variable in Python?

10. What is the difference between "==" and "is" in Python?

11. What are conditional statements in Python?

12. What is the syntax for the if statement in Python?

13. How do you write an if-else statement in Python?

14. What is a loop in Python?

15. How many types of loops are there in Python?

16. What is the syntax for a for loop in Python?

17. How do you loop through a list in Python?

18. What is the purpose of the range() function in a for loop?

19. How do you exit a loop prematurely in Python?

20. What is the difference between "while" and "for" loops in Python?

Programs:

1. What is the purpose of Python's "print" function?

2. How do you take user input in Python?

3. Explain the concept of arithmetic operators in Python.

4. What are the main data types in Python?

5. How do you declare a variable in Python?

6. Explain the difference between "==" and "=" in Python.

7. What is the "if" statement used for in Python?

8. How do you write a simple "if-else" statement in Python?

9. Describe the syntax of a "for" loop in Python.

10. What is the purpose of the "range" function in Python's "for" loops?

11. How do you exit a loop prematurely in Python?

12. Explain the concept of indentation in Python.

13. What does the "%" operator do in Python?

14. How do you check if a number is even or odd in Python?

15. Describe the syntax of a "while" loop in Python.

16. What does the "input" function do in Python?

17. How do you concatenate two strings in Python?

18. Explain the concept of data type conversion in Python.

19. What is the output of the expression "5 // 2" in Python?

20. How do you comment out a line of code in Python?

With answers

1. What is Python?

Python is a high-level, interpreted programming language known for its simplicity and readability. It supports multiple programming paradigms including procedural, object-oriented, and functional programming.

2. Why is Python called an interpreted language?

Python is called an interpreted language because it does not need to be compiled into machine code before execution. Instead, it is executed line by line by the Python interpreter.

3. How do you print something in Python?

You can print something in Python using the `print()` function. For example:

```
print("Hello, World!")
```

4. What is the function used for user input in Python?

The `input()` function is used to get user input in Python. For example:

```
name = input("Enter your name: ")
```

5. How do you comment in Python?

In Python, you can use the `#` symbol to make single-line comments. For multi-line comments, you can enclose the text within triple quotes `'''` or `"""`.

6. What are the different data types in Python?

Python supports various data types including integers, floats, strings, lists, tuples, dictionaries, and sets.

7. How do you check the data type of a variable in Python?

You can use the `type()` function to check the data type of a variable. For example:

```
x = 5
print(type(x))  # Output: <class 'int'>
```

8. What are escape characters in Python? Give an example.

Escape characters are special characters used to represent whitespace or other non-printable characters. For example, `\n` represents a newline character.

9.How do you declare a variable in Python?

You can declare a variable in Python by simply assigning a value to it. For example:

```
x = 5
```

10. What is the difference between "==" and "is" in Python?

The `==` operator checks for equality of values, while the `is` operator checks for identity, i.e., whether two variables refer to the same object in memory.

11. What are conditional statements in Python?

Conditional statements in Python are used to execute different actions based on different conditions. They include `if`, `elif`, and `else`.

12. What is the syntax for the if statement in Python?

```
if condition:
    # Code block to execute if condition is True
```

13. How do you write an if-else statement in Python?

```
if condition:
    # Code block to execute if condition is True
else:
    # Code block to execute if condition is False
```

14. What is a loop in Python?

A loop in Python is used to execute a block of code repeatedly.

15. How many types of loops are there in Python?

There are two main types of loops in Python: `for` loop and `while` loop.

16. What is the syntax for a for loop in Python?

```
for item in iterable:
    # Code block to execute for each item in iterable
```

17. How do you loop through a list in Python?

You can loop through a list using a `for` loop. For example:

```
my_list = [1, 2, 3]
for item in my_list:
    print(item)
```

18. What is the purpose of the range() function in a for loop?

The `range()` function generates a sequence of numbers, which is commonly used for iterating over a sequence of numbers in a `for` loop.

19. How do you exit a loop prematurely in Python?

You can exit a loop prematurely using the `break` statement.

20. What is the difference between "while" and "for" loops in Python?

A `for` loop is used for iterating over a sequence, while a `while` loop is used for executing a block of code repeatedly until a specified condition becomes false.

Programs answers

1. Program to demonstrate the purpose of Python's "print" function:

```
print("Hello, world!")
```

2. Program to take user input in Python:

```
name = input("Enter your name: ")
print("Hello, " + name)
```

3. Program to demonstrate arithmetic operators in Python:

```
a = 5
b = 3
print("Addition:", a + b)
print("Subtraction:", a - b)
print("Multiplication:", a * b)
print("Division:", a / b)
```

4. Program to demonstrate the main data types in Python:

```
integer_var = 10
float_var = 3.14
string_var = "Hello"
list_var = [1, 2, 3]
tuple_var = (4, 5, 6)
dict_var = {"a": 1, "b": 2}
set_var = {1, 2, 3}
```

5. Program to declare a variable in Python:

```
x = 10
```

6. Program to demonstrate the difference between "==" and "=" in Python:

```
x = 5  # Assignment
if x == 5:  # Comparison
   print("x is equal to 5")
```

7. Program to demonstrate the use of "if" statement in Python:

```
x = 10
if x > 5:
   print("x is greater than 5")
```

8. Program to demonstrate a simple "if-else" statement in Python:

```
x = 10
if x > 5:
   print("x is greater than 5")
else:
   print("x is less than or equal to 5")
```

9. Program to demonstrate the syntax of a "for" loop in Python:

```
for i in range(5):
   print(i)
```

10. Program to demonstrate the purpose of the "range" function in Python's "for" loops:

```
for i in range(1, 10, 2):
   print(i)
```

Sure, here are the remaining programs:

11. Program to demonstrate how to exit a loop prematurely in Python:

```
for i in range(10):
   if i == 5:
      break
```

```
    print(i)
```

12. Program to demonstrate indentation in Python:

```
x = 5
if x > 0:
    print("Positive number")
else:
    print("Non-positive number")
```

13. Program to demonstrate the use of the "%" operator in Python:

```
x = 10
y = 3
print("Remainder:", x % y)
```

14. Program to check if a number is even or odd in Python:

```
num = 7
if num % 2 == 0:
    print(num, "is even")
else:
    print(num, "is odd")
```

15. Program to demonstrate the syntax of a "while" loop in Python:

```
x = 0
while x < 5:
    print(x)
    x += 1
```

16. Program to demonstrate the use of the "input" function in Python:

```
name = input("Enter your name: ")
print("Hello, " + name)
```

17. Program to concatenate two strings in Python:

```
str1 = "Hello"
str2 = "world"
result = str1 + " " + str2
print(result)
```

18. Program to demonstrate data type conversion in Python:

```
num_str = "10"
num_int = int(num_str)
print(num_int)
```

19. Program to find the output of the expression "5 // 2" in Python:

```
result = 5 // 2
print(result)
```

20. Program to comment out a line of code in Python:

```
# This line is commented out
print("Hello, world!")
```