

Python for Data Science

Live Interactive Problem-Solving Session

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Overview

Introduction to Python

- Programming in Python
- Advantages
- Different Coding Environments

Introduction to Spyder

- GUI
- Setting Working Directory
- Working with Scripts
- File Execution
- Using the Console

Variables and Data Types

- Naming Rules
- Basic Data Types - Identification, Verification and Coercion

Operators

- Operators vs. Operands
- Types - Arithmetic, Assignment, Relational, Logical, Bitwise, etc.
- Precedence of Operators

Question 1

Which of the following are operators, and which are values?

- a) *
- b) 'hello'
- c) -88.8
- d) -
- e) /
- f) +
- g) 5

Question 2

Which of the following is a variable, and which is a string?

- a) spam
- b) 'spam'

Question 3

Name three data types.

Question 4

What is an expression made up of? What do all expressions do?

Question 5

What does the variable **bacon** contain after the following lines of code run?

```
bacon = 20
```

```
bacon + 1
```

Question 6

What should the following two expressions evaluate to?

`'spam' + 'spamspam'`

`'spam' * 3`

Question 7

Why is **eggs** a valid variable name while **100** is invalid?

Question 8

What three functions can be used to get the integer, floating-point number, or string version of a value?

Question 9

Why does the following expression cause an error?
How can you fix it?

```
'I have eaten ' + 99 + ' burritos.'
```

Question 10

Which of the following is a valid variable name in Python?

- a) 1st_name
- b) my-variable
- c) my_variable
- d) @variable

Question 11

What is the correct way to assign the value 10 to a variable named ***number***?

- a) `number = 10`
- b) `10 = number`
- c) `number := 10`
- d) `let number = 10`

Question 12

Which of the following data types is used to represent text in Python?

- a) int
- b) float
- c) str
- d) bool

Question 13

What is the output of the following code?

```
x = 5
```

```
y = 3
```

```
print(x + y)
```

a) 8

b) 53

c) 2

d) Error

Question 14

Which operator is used for exponentiation in Python?

- a) **
- b) ^
- c) //
- d) %

Question 15

What is the result of the expression `5 % 2`?

- a) 2
- b) 1
- c) 0
- d) Error

Question 16

Which operator is used for floor division in Python?

- a) /
- b) //
- c) %
- d) *

Question 17

Which data type is used to represent decimal numbers in Python?

- a) int
- b) float
- c) str
- d) bool

Question 18

What is the output of the following code?

```
x = "hello"
```

```
y = "world"
```

```
print(x + " " + y)
```

- a) helloworld
- b) hello world
- c) hello+world
- d) Error

Question 19

Which data type is used to represent boolean values (True or False) in Python?

- a) int
- b) float
- c) str
- d) bool

Question 20

Which of the following is a valid way to declare multiple variables in a single line in Python?

- a) `x, y, z = 1, 2, "hello"`
- b) `x = 1; y = 2; z = "hello"`
- c) `x = 1 y = 2 z = "hello"`
- d) All of the above

Question 21

What is the data type of the following expression?

$3 + 4.5j$

- a) int
- b) float
- c) complex
- d) str

Question 22

Consider the following code:

```
x = "5"
```

```
y = int(x)
```

What is the data type of **y**?

- a) str
- b) int
- c) float
- d) None

Question 23

What is the result of the following expression?

True and not False

- a) True
- b) False
- c) None
- d) Error

Question 24

Given the following code:

```
x = 5
```

```
y = 2
```

```
z = x // y
```

What is the value of **z**?

a) 2.5

b) 2

c) 3

d) Error

Question 25

Which of the following operators has the highest precedence?

- a) +
- b) *
- c) **
- d) //

Question 26

What is the output of the following code?

```
x = 5
```

```
y = 3
```

```
z = x % y
```

```
print(z)
```

a) 1

b) 2

c) 1.66

d) Error