Software Engineering Using Python Bootcamp - SDA

Python-Basics report

Taif Alanzi
Jul 25 2025

Score (%)	Questions	Duration
20% (1/5)	3	5m out of 5m

Python-Basics

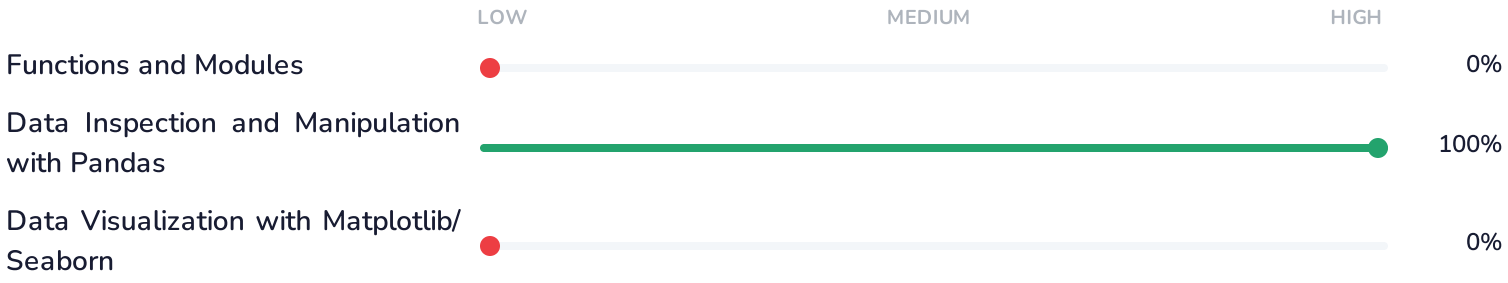
Evaluated as a part of **معسكر تطوير البرمجيات بإستخدام Python -عن بعد** assessment

The "Python-Basics" test is designed to assess a candidate's foundational knowledge of Python programming, which is essential for anyone starting their journey in software development or data science. This test evaluates core Python concepts such as variables, data types, control structures, functions, and basic object-oriented programming principles. It serves as a critical tool for employers to ensure candidates possess a solid understanding of Python's syntax and logic before advancing to more complex tasks.

This test is particularly important during the hiring process for roles where Python is a key programming language, such as Software Developer, Data Scientist, Web Developer, and Automation Engineer. It helps identify candidates who have the necessary Python skills to build efficient, maintainable, and scalable applications. Since Python is widely used across industries for web development, data analysis, artificial intelligence, and automation, proficiency in the basics is crucial for developing a strong foundation to handle more specialized tasks.

The test covers key skills such as understanding Python's basic data structures (e.g., lists, dictionaries, tuples), working with loops and conditionals, writing functions, handling errors, and basic file operations. It also assesses the ability to understand and work with libraries and modules that are integral to Python development.

By incorporating the "Python-Basics" test into the hiring process, employers can ensure that candidates are equipped with the fundamental Python knowledge necessary to succeed in any Python-based role, making it an invaluable tool in the recruitment of entry-level to intermediate developers.



Score interpretation

%: This notation indicates an absolute score. All subsection scores are absolute scores based on the number of correct questions within that subsection. For example, a subsection score of 60 indicates that a candidate answered 60% of the questions in that subsection correctly.

The color coding in this report is as given below:

- High scores between 71 to 100
- Medium scores between 31 to 70
- Low scores between 0 to 30

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Detailed question report

Q#	Title	Skill	Status	Type	Score
1	Counting missing values per column	Data Inspection and Manipulation with Pandas	Correct	Single select	1/1
2	Categorical frequency seaborn	Data Visualization with Matplotlib/Seaborn	Correct	Muti select	0/3
3	Returning multiple values	Functions and Modules	Incorrect	Single select	0/1
Total					**1/5**

Detailed response

Question 1

Skill: Data Inspection and Manipulation with Pandas **Type:** Single select **Level:** Beginner

Counting missing values per column

As a data analyst at a retail company, you've been given a sales DataFrame to analyze customer demographics. You notice some missing values in the 'age' column. Which method would you use to count the number of missing values for each column in the DataFrame?

- ○ `df.isnull().any()`
- ○ `df.isna().count()`
- ◉ `df.isna().sum()`
- ○ `df.notna().sum()`

Time taken: 2m 52s Score: 1/1

Question 2

Skill: Data Visualization with Matplotlib/Seaborn **Type:** Muti select **Level:** Intermediate

Categorical frequency seaborn

In a marketing analytics project, you need to visualize the frequency of customer preferences for different product categories using Seaborn. Which plot types can you use to display the count of each category effectively? Select all that apply.

- ☐ `sns.scatterplot()` for category comparison
- ☐ `sns.boxplot()` for category distribution
- ☐ `sns.stripplot()` for category visualization
- ☑ `sns.countplot()` for category counts
- ☑ `sns.barplot()` with count data
- ☐ `sns.histplot()` for numerical data

Time taken: 1m 44s Score: 0/3

Question 3

Skill: Functions and Modules **Type:** Single select **Level:** Beginner

Returning multiple values

In a data analysis module, you need to write a function that processes two numerical inputs and returns both their sum and product so that they can be used in further calculations. Which of the following code blocks correctly demonstrates how to achieve this in Python?

- (selected) `def process_data(x, y): return {x + y, x * y}` ✗
- `def process_data(x, y): return x + y, x * y`
- `def process_data(x, y): return x + y and x * y`
- `def process_data(x, y): return (x + y, x * y)`

Time taken: 0m 23s Score: 0/1

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Question skill statistics

Skill	Percentage	Question counts	Correct	Incorrect
Functions and Modules	0%	1	0	1
Data Inspection and Manipulation with Pandas	100%	1	1	0
Data Visualization with Matplotlib/Seaborn	0%	1	1	1
Total	**20%**	**3**	**2**	**2**