



LABORATORIO DI:

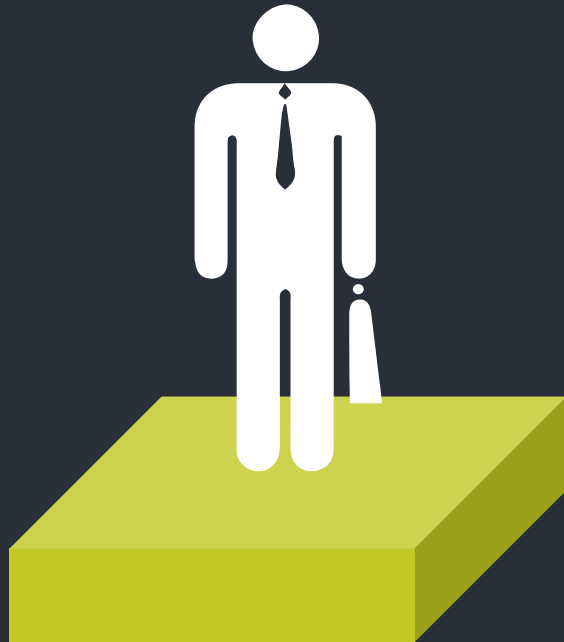
METODI E MODELLI MATEMATICI IN PYTHON

A CURA DI: **ANTONIO MIRARCHI & GIUSEPPE TROTTA**

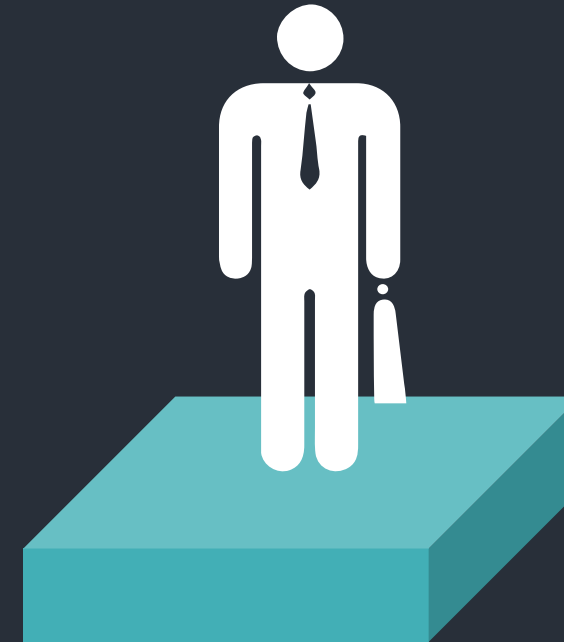
<https://www.labmetodiemodelli.it/>

Chi Siamo?

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Scopo del Corso



01 Fornire una solida conoscenza di Python from "Zero to Hero", permettendovi di utilizzare in primis Python per gli scopi matematici

02 Una panoramica concreta degli algoritmi di machine learning in Python attraverso lo studio di librerie apposite di Data Science

03 Alcuni Cenni di Deep Learning attraverso i principali Framework



Ottenimento Crediti

Manuale di sopravvivenza al laboratorio



Almeno 7
laboratori su 10



3 Esercitazioni
Intermedie



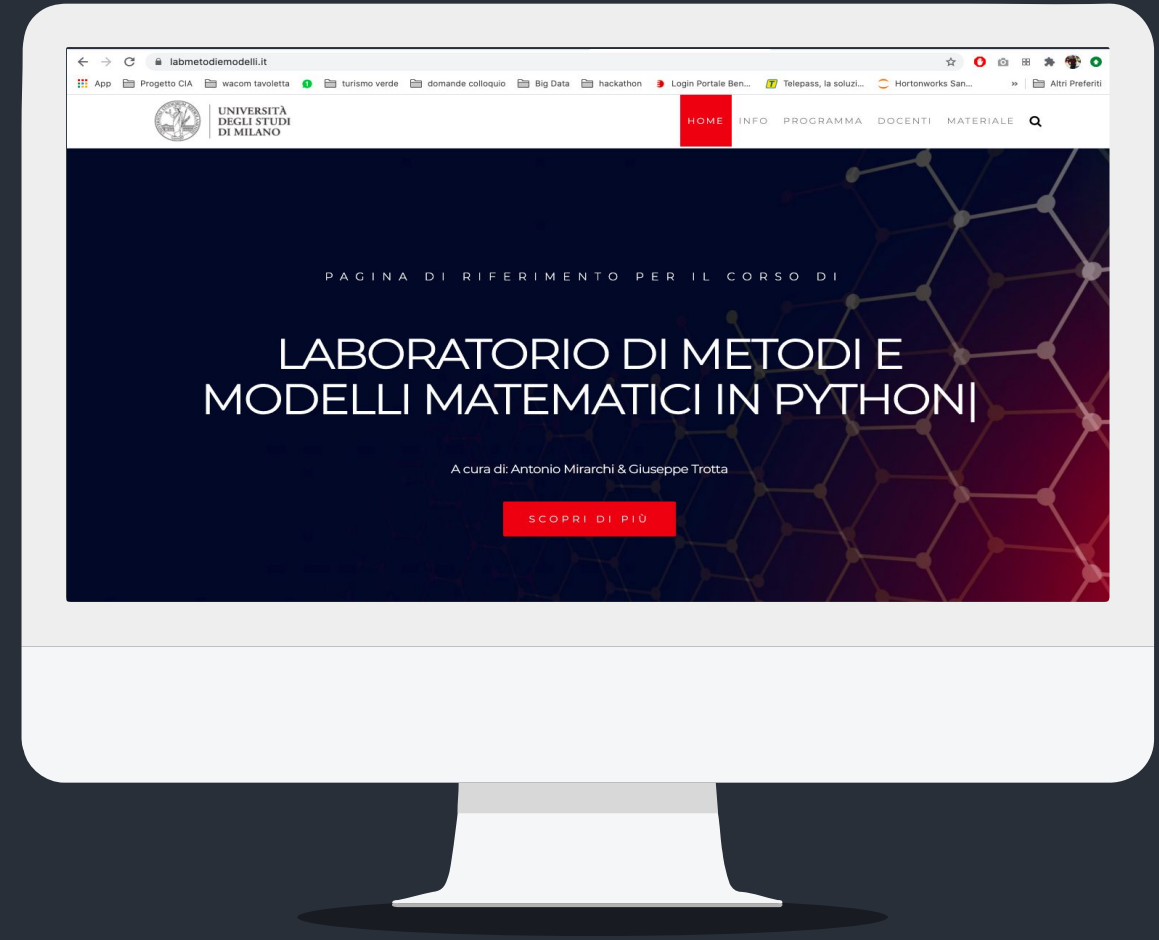
Nessun Voto
Finale

01

Il sito di riferimento per il materiale del corso

1

- 1 Informazioni e News
- 2 Comunicazioni ufficiali
- 3 Slide delle lezioni
- 4 Materiale vario del corso
- 5 Programma Laboratorio
- 6 Esercizi



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IL PROGRAMMA

INTRODUZIONE A
PYTHON

01

LE STRUTTURE DATI
IN PYTHON

02

LE LIBRERIE PER LA
DATA SCIENCE
(PARTE 2)
+ Test Intermedio

04

LE LIBRERIE PER LA
DATA SCIENCE
(PARTE 1)

03

LA DATA ANALYSIS
E LA DATA
VISUALIZATION

05

1

IL PROGRAMMA

1

10

RETI NEURALI &
DEEP LEARNING

09

COSTRUIRE MODELLI
PREDITTIVI (PARTE 4)
+ Test Intermedio

08

COSTRUIRE MODELLI
PREDITTIVI (PARTE 3)

07

COSTRUIRE MODELLI
PREDITTIVI (PARTE 2) +
Test Intermedio

06

COSTRUIRE
MODELLI PREDITTIVI
(PARTE 1)

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01

LEZIONE 1 – INTRODUZIONE A PYTHON

1

1 Installazioni e Configurazioni

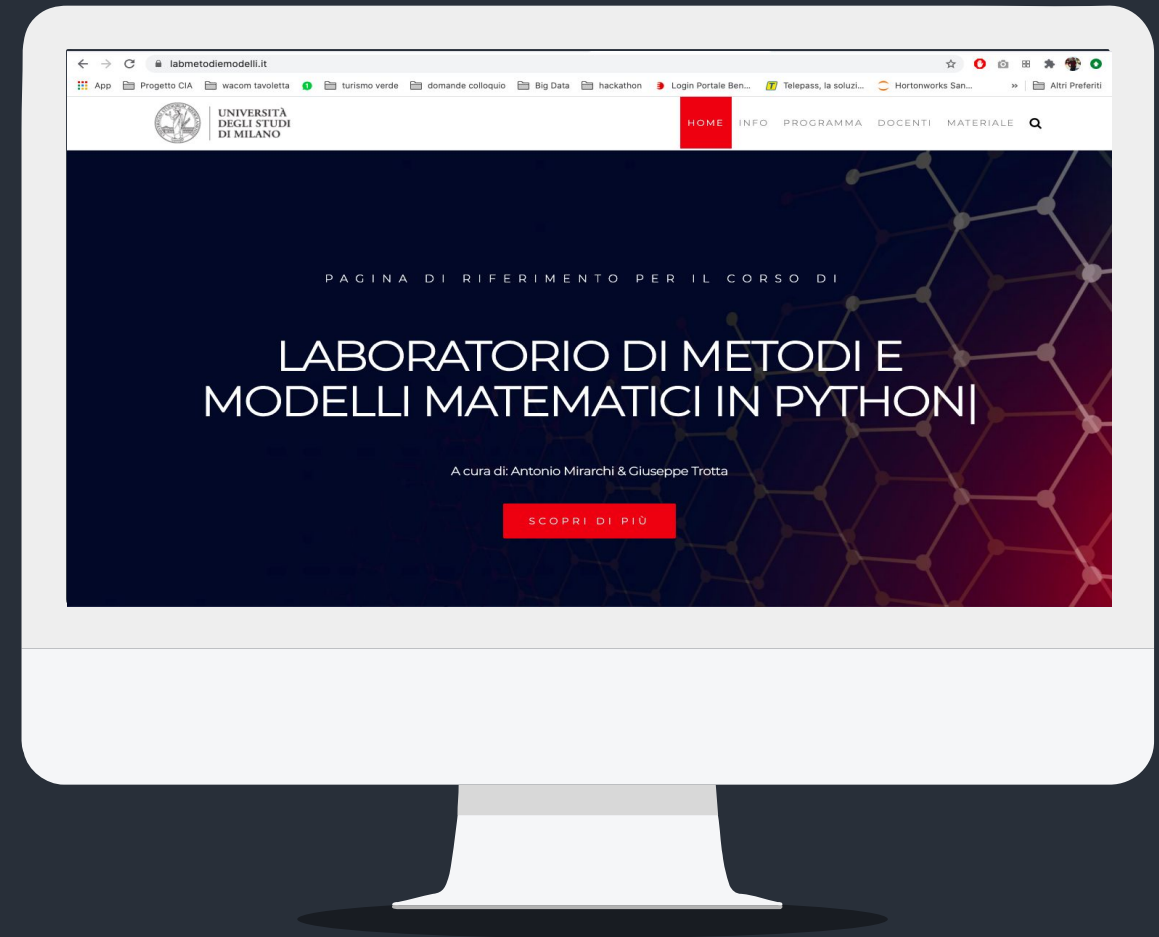
2 Cos'è Python?

3 Introduzione alla Programmazione

4 I Commenti

5 Gli Identifier

6 L'indentazione

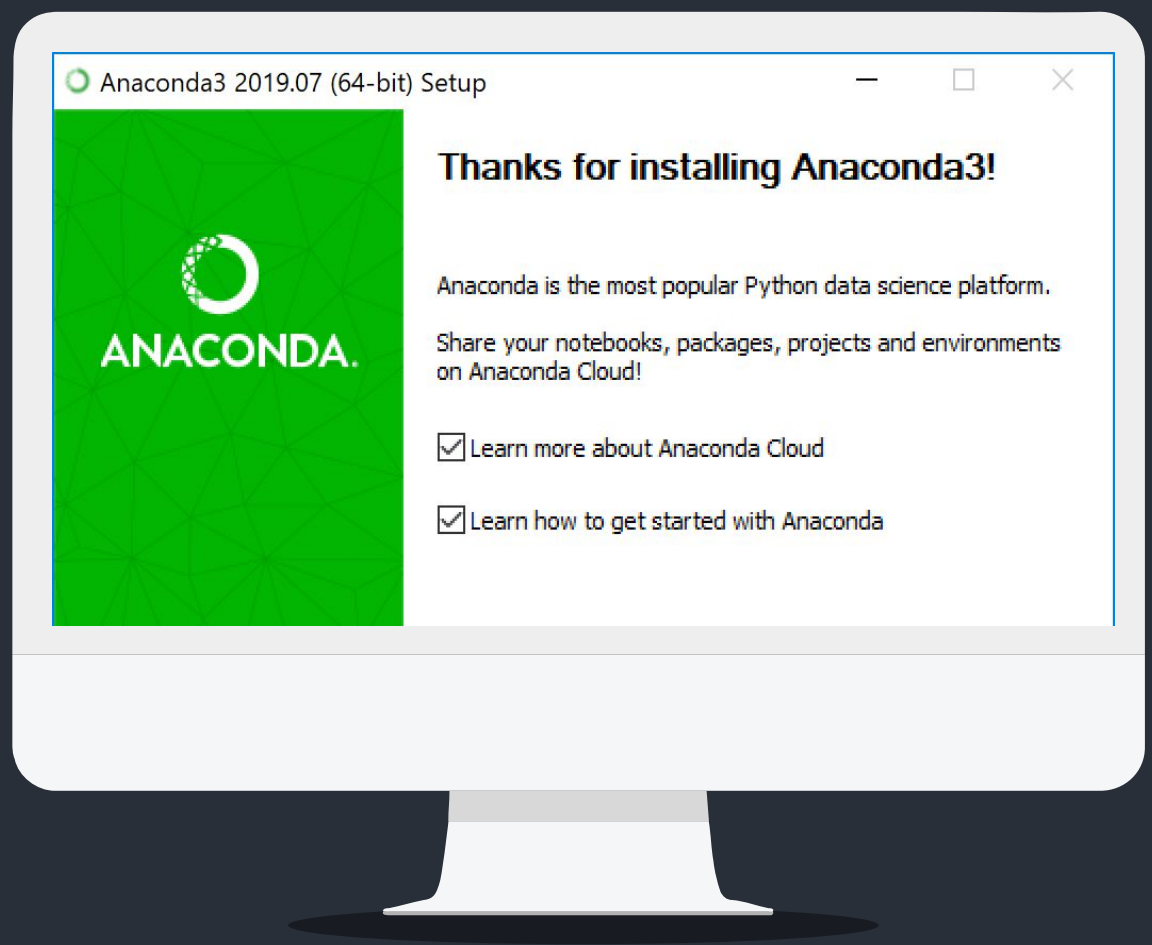


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1. Installazioni e Configurazioni



Installing on windows



1

Download the Anaconda installer.

2

Double click the installer to launch and follow the steps

3

Choose whether to add Anaconda to your PATH environment variable. Install Anaconda to a directory path that does not contain spaces or unicode characters.

4

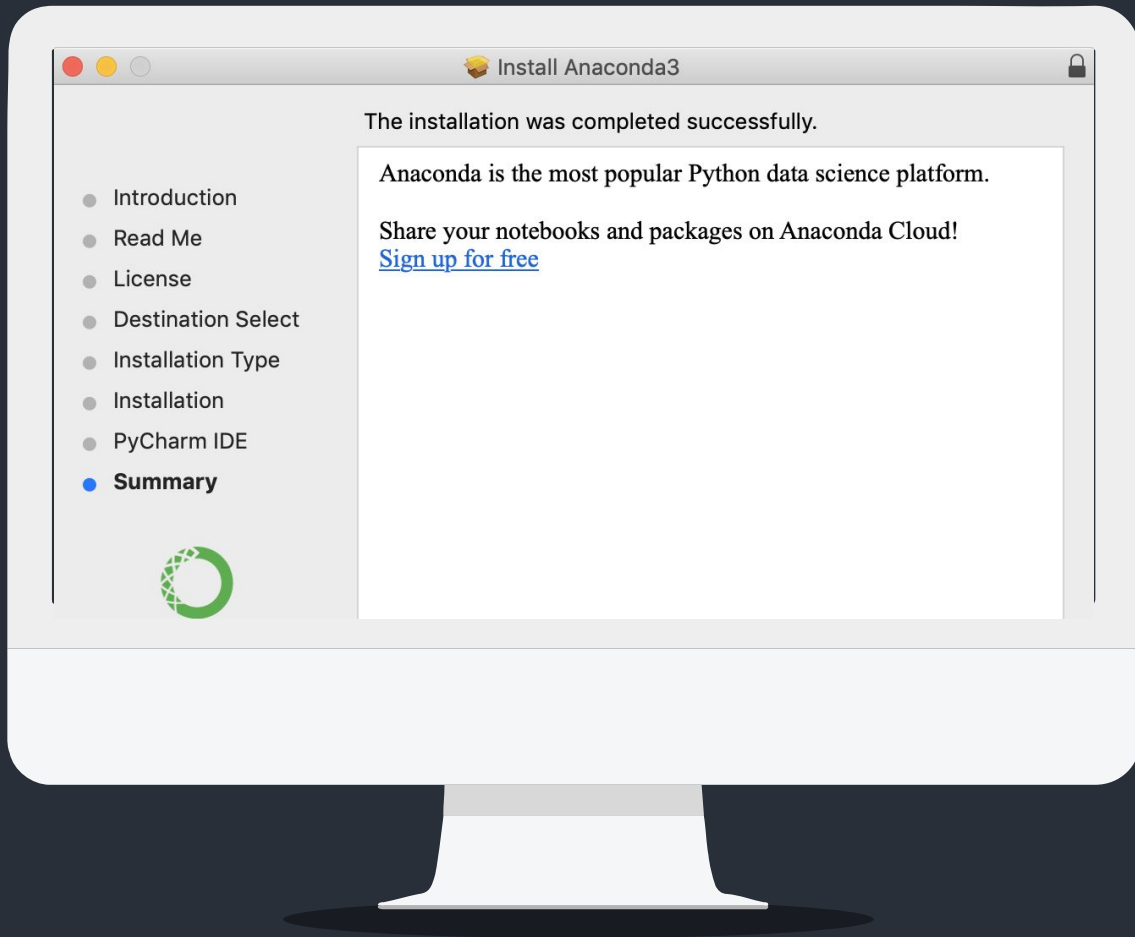
Choose whether to register Anaconda as your default Python.

5

Click the Install button

Installing on MacOS

1



1

Download the graphical [macOS installer](#) for your version of Python.

2

Double-click the downloaded file and click continue to start the installation.

3

Click the Install button to install Anaconda in your home user directory (recommended)

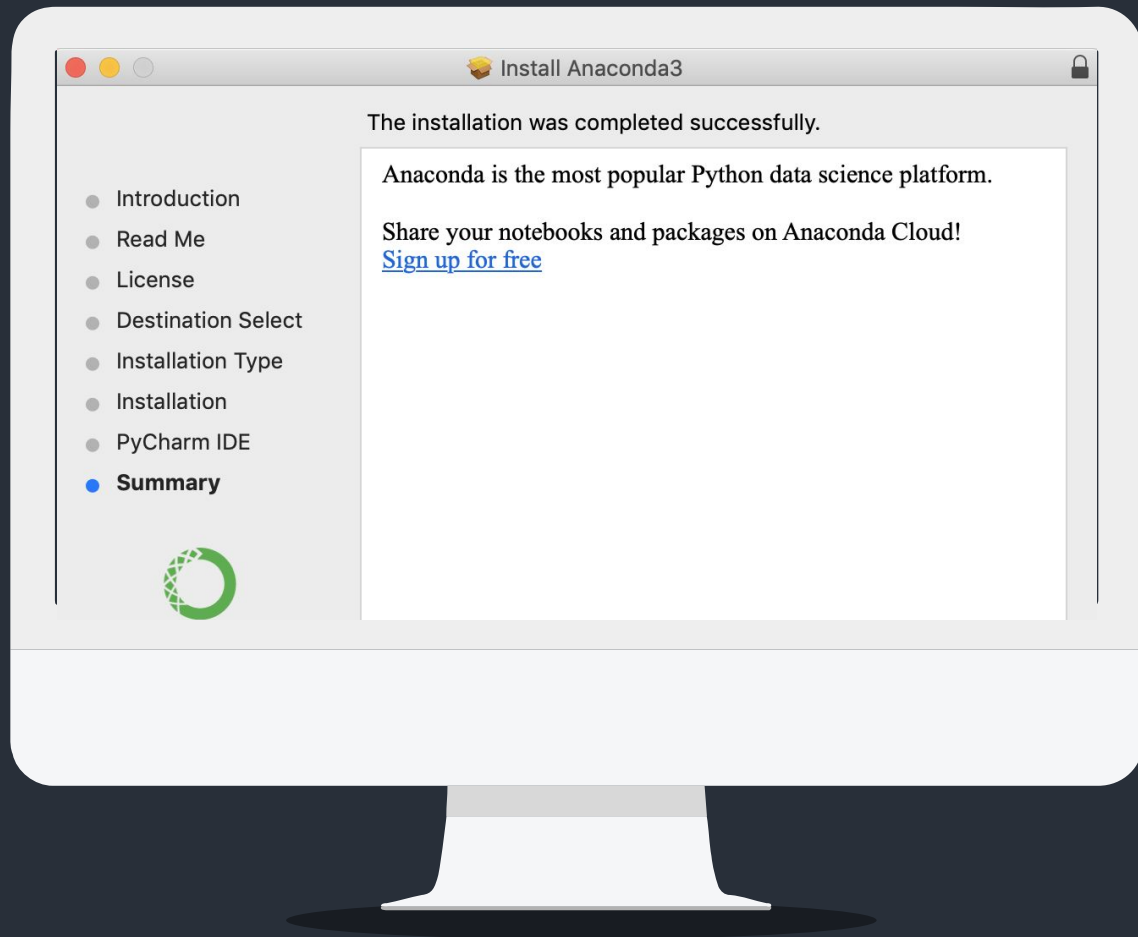
4

OR, click the Change Install Location button to install in another location (not recommended).

5

On the Destination Select screen, select Install for me only.
Click the Install button

Installing on Linux



1

Check the Prerequisites at : <https://docs.anaconda.com/anaconda/install/linux/>

2

In your browser, download the Anaconda installer for Linux.

3

Open a terminal and run the following:
`sha256sum /path/filename`

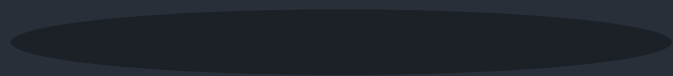
4

Enter the following to install Anaconda for Python 3.7:

```
bash  
~/Downloads/Anaconda3-2019.07-Linux-x86_
```

5

```
64.sh  
Follow the steps
```



Let's
Code!

2. Cos'è Python

01

Python è un linguaggio di programmazione popolare, multi-paradigma e di alto livello. È stato sviluppato da Guido van Rossum alla fine degli anni '80 e rilasciato ufficialmente nel 1991.

02

Python supporta diversi paradigmi di programmazione, ad oggetti, programmazione funzionale, scripting

03

Python è un linguaggio di alto livello molto vicino al parlato inglese pertanto è molto leggibile

04

Python is È un linguaggio interpretato, nel senso che ha bisogno di un «interprete che converta le istruzioni in codice macchina

05

Python è un linguaggio flessibile e che si adatta a diverse tipologie di utilizzo

Syntax



- 1 Keywords
- 2 Python Identifiers
- 3 Indentation
- 4 Comments

3. Introduzione alla Programmazione - Identifiers

01

An identifier is a name for a variable, function, class, module, and similar objects. Any object or entity that you intend to use in your program should be appropriately identified or named.

02

An identifier can be a combination of uppercase and lower case letters, underscores, and digits (0-9).

03

An identifier should never start but may end in a number
You may not use special characters such as \$, %, and @ within identifiers.

04

Python is case-sensitive.

05

Almost all identifiers start in lowercase except Class identifiers which, by convention, start in an uppercase letter.

3. Introduzione alla Programmazione - Identifiers

06

Quotation marks are used to indicate string literals in Python. You can use single ('), double ("), or triple (""') quotes

07

Statements are expressions within a program that can be read and executed by the Python interpreter. Python supports statements such as assignment statement, if statement, for statement, and while statement

08

An identifier should never start but may end in a number
You may not use special characters such as \$, %, and @ within identifiers.

09

Statements may sometimes spill over several lines. To tell Python implicitly that the lengthy expression is a single statement, you can wrap it inside braces {}, brackets [], or parentheses ().

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Let's
Code!

3. Introduzione alla Programmazione - Indentation

Unlike programming languages such as C, C++, and Java which signify blocks of code with braces {}, Python programs are structured through indentation. You can easily identify blocks of code such as loops and functions because they start on the same distance going to the right. If you need to write a more deeply nested code, you'll simply indent another block to the right. The ending is marked by the first unindented line. This rigid language requirement on indentation further enhances the readability of Python codes.

The amount of indentation is not fixed and you may use your preferred indent level. By convention, Python programmers use four white spaces instead of tabs and you might like to consider that option in your own program. Python, however, does require consistency – you need to maintain the same level of indentation within the block.

3. Introduzione alla Programmazione - Comments

Comments are notes that you put into a program to describe a process, step, or other important details. Comments are useful for providing more documentation to your work which can be invaluable in the future when you or other programmers decide to review or revisit the program. A comment is appropriately marked with a hash (#) symbol to instruct the interpreter to ignore the line when you run the code.

For long comments spanning over several lines, you can use a hash (#) symbol at the start of each connected line to wrap them together:

Alternatively, you can wrap multi-line comments with triple quotes.

Paradigmi di programmazione

