



OBJECT
ORIENTED
PROGRAMMING
WITH PYTHON

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Object Oriented Programming with Python

Learn essentials of OOP with Python 3

Ashwin Pajankar and Sushant Garg

This book is for sale at <http://leanpub.com/PythonOOP>

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I dedicate this book to my dear wife, Kavitha.

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Preface

When I first saw a bunch of kids booting up a strange-looking PCB (Printed Circuit Board) with Linux, I literally jumped in excitement. When I asked them what it was, they said, “Raspberry Pi”. This is how I was introduced to Raspberry Pi. The occasion was a Hackathon organized at my former workspace for the specially abled kids. When I saw those lovely and creative kids using a little computer, I immediately decided to explore it and after six months my [first book on Raspberry Pi](#)¹ got published.

I have been working since last 10 years with Python prior to the publication of my first book. My first book and all the subsequent books use Python 2 and Python 3 extensively for explaining all the concepts and their demonstrations. I have extensively used Python for Test Automation, Industrial Automation, IoT, Electronics, Robotics, Image Processing, Signal Processing, Computer Vision, Supercomputing, and Parallel Programming. All of my books written on these topics use Python. I always receive feedback on my books where people say that I should write a dedicated book on the basics of Python. However, I am not much into writing books on very basics of Programming. I still want all of my readers to be very comfortable with Python and the best way to learn Basic Python is to start coding in Python. This book covers the basics of OOP for such beginners.

Why am I writing this book?

As I said earlier, many of my readers find it quite difficult to understand the Python’s Object Oriented coding Philosophy. So, I decided to write a book on the very basics of OOP with Python. As of now the book has ten chapters which cover all the essentials of the Object Oriented Programming with Python. Thanks to the revolutionary publishing model of Leanpub platform, I can keep on adding the chapters, topics, and code to the book and can also improve the existing text and code examples. I hope that this book helps all the Python enthusiasts to learn basics of OOP with Python. Please do let me know if you want me to add more essential topics to the book. Following the code examples in this book will help everyone to get comfortable with OOP in Python 3.

Who this book is for?

This book is not for someone who is very new to programming, coding, and computer science. If you are planning to learn how to code by reading this book then you will be disappointed. You must know the basics of coding as well as a bit of Python as I am not covering it in this book. You should know how to install Python 3. You should have a working setup of Python 3. Anything as basic as a Raspberry Pi would be good enough to try the coding examples in the book.

¹<https://www.packtpub.com/hardware-and-creative/raspberry-pi-computer-vision-programming>

How is this book organized?

This book is and will always be an *In Progress* book (this is the basis of Leanpub). I will often update the book. Also, all the chapters in this book will be reused in the other books I am currently writing. following are the contents of the book:

Chapter 1 introduces readers to the philosophy Classes and Objects in Python.

Chapter 2 explores the members of the class. It covers member variables and methods.

Chapter 3 deals with modules and packages.

Chapter 4 introduces inheritance, related fundamentals, and access modifiers in Python.

Chapter 5 explores polymorphism in detail.

Chapter 6 explores exceptions and exception handling mechanism in Python

Chapter 7 explores built-in data structure like tuples, dictionaries, lists, and sets.

Chapter 8 deals with the basics of strings in Python.

Chapter 9 introduces readers to the Generators and Iterators in Python.

You will also find several asides, each one starting with an icon on the left. Let me explain them.



This is a warning box. The text contained explains important aspects or gives important instructions. It is strongly recommended to read the text carefully and follow the instructions.



This is an information box. This may contain link to an external webpage relevant to the topic under discussion.



This is a tip box. It has suggestions to the reader that could simplify the learning process.



This is an exercise box. This will contain an exercise which will aid the readers to explore the topic further.

What this book is not?

This book is not for learning Python programming from scratch. So, if you are completely new to Python programming, you might find it a bit difficult to follow this book. It is also not a book for IoT (Internet of Things), Home Automation, or Robotics applications. I have written other books on these topics. Readers can go through [my profile page on Leanpub²](https://leanpub.com/u/ashwinpajankar) to check the other books I have written.

²<https://leanpub.com/u/ashwinpajankar>

About the Author

Ashwin Pajankar

When someone asks me about my career, I like to say I am someone who loves to work on Automation, Software Testing, Single Board Computers, and IoT. I am also interested and have worked in the areas of Computer Science like Parallel Programming, Image Processing, and Wireless Communications.

I was raised in a small town in India. Like thousands of other folks of my age, I finished my undergraduate studies in Computer Science and Engineering and joined workforce when I was in my early twenties. After couple of years of stint in a multinational IT services company, I decided to pursue further studies. I took admission to [IIIT Hyderabad](#)³ and graduated with MTech in Computer Science & Engineering. I was lucky enough to able to fund my graduate studies with various grants, loans, and scholarships. After finishing graduate studies I joined workforce again. I am planning to work till my brain is working (which is an awful lot of time :)).

I have work experience in software development and testing till now. Recently, I find myself increasingly involved in Software Design, Architecture, and Innovation in IoT space. Till now, I have trained more than a thousand professionals for technical skills. More than tens of thousands of copies of my books published through Packt and Leanpub have been purchased till now.

I have work experience in various programming platforms like C, C++, Java, Python, and bash scripting. I have also worked with all the major databases like Microsoft SQL Server, Oracle, IBM DB2, Teradata, MySQL, and sqlite. In IoT domain, I have worked on Raspberry Pi, Arduino, Banana Pro, Intel Edison, and Grove sensors.

I have never had privilege of working on web or mobile programming. Yet, I have rudimentary understanding of XML, HTTP protocol, and web-services. Recently, I have started learning PHP by myself to be able to code for the web.

This is my thenth book and I am planning to write at least three to four books per year. All the books will be free and published on Leanpub. This is [link to my LinkedIn](#)⁴ profile. Please feel free to contact me for providing your valuable feedback on my writing style.

Sushant Garg

³www.iiit.ac.in

⁴<https://in.linkedin.com/in/ashwinpajankar>

Errata and Suggestions

I am aware of the fact that there are several errors in the text. Unfortunately, English is not my mother language and this is one of the main reasons I prefer lean publishing: being an in-progress book I have all the time to check and correct them. I have decided that once this book reaches the end, I will look for a professional editor that helps me to fix all the errors in my English. However, feel free to contact me to let know every type of mistake. On the other end, I am totally open to suggestions and improvements about book content. So, please feel free to suggest any related topic you want me to add to the book or to let me know book parts that are not clear or well explained.

You can contact me on [LinkedIn](#)⁵.

⁵<https://in.linkedin.com/in/ashwinpajankar>

How to Help the Author

As I mentioned earlier, English is not my mother language. I am really pleased when I hear any feedback from my dear readers on any aspect of the book.

If you really want to help me, you may consider to:

- give me your valuable feedback about unclear things or errors in the text and the examples
- write a small review about what you think of this book in the [feedback section](#)⁶
- use your favorite social network or blog to spread the word. The suggested hashtag for this book on Twitter is [#PythonOOP](#)⁷

Also, if you want to collaborate with me on any technical project, you can reach me on [LinkedIn](#)⁸.

⁶<https://leanpub.com/PythonOOP/feedback>

⁷<https://twitter.com/search?q=%23PythonOOP>

⁸<https://in.linkedin.com/in/ashwinpajankar>