



# IIT Madras

ONLINE DEGREE

**Programming in Python**  
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**Introduction to Object Oriented Programming**

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# Introduction to Object Oriented Programming (OOP)



Introduction to Object Oriented Programming (OOP)

Hello python students. In this week, we will discuss about new approach towards programming, and this new approach is referred as object-oriented programming or popularly known as OOP, OOP is the most popular programming paradigm and it is considered as standard way to write the code.

Now, the question is why it is called object-oriented programming and why it is so popular? And the answer is object-oriented programming considers every real time object living and non-living as the core executing entity. For example, I am an object, you are an object, all your family members are objects, all your friends are objects, this laptop is an object and so on.

Now, the next step is about defining characteristics of an object. Every individual object has some attributes and behavior. For example, you have some attributes like name, age, gender and so on. At the same time, you will also have some behavior like singing, dancing, sports, etc. Let us consider another familiar example from scores data set, over there every student has roll number, name, gender, city, date of birth, marks of three subjects and total.

These are nothing but attributes and they can be easily stored using variables. On the other hand, we can write functions which will do some kind of calculations and data manipulations using the values in the data set. And we all have been doing this day in day out. When we consider it like this then all these variables and functions are shared between those 30 students, but in real world that is not how it works.

Every student has his or her own identity and this identity is defined by attributes and behavior. This means every student must have his or her own variables and functions and they should not be shared with other students. Now, the question is how to create such an entity which will store both variables and functions together and that too for every student.

And the answer is object-oriented programming, where everything revolves around this entity called object, this is the reason OOP is very popular because it translates the real world into programming. I think this general background about OOP is sufficient and I am sure you all must have understood what this is all about and why it is important. From next lecture onwards we will focus on various features of object-oriented programming and how to implement those using Python. Thank you for watching this lecture, happy learning.

