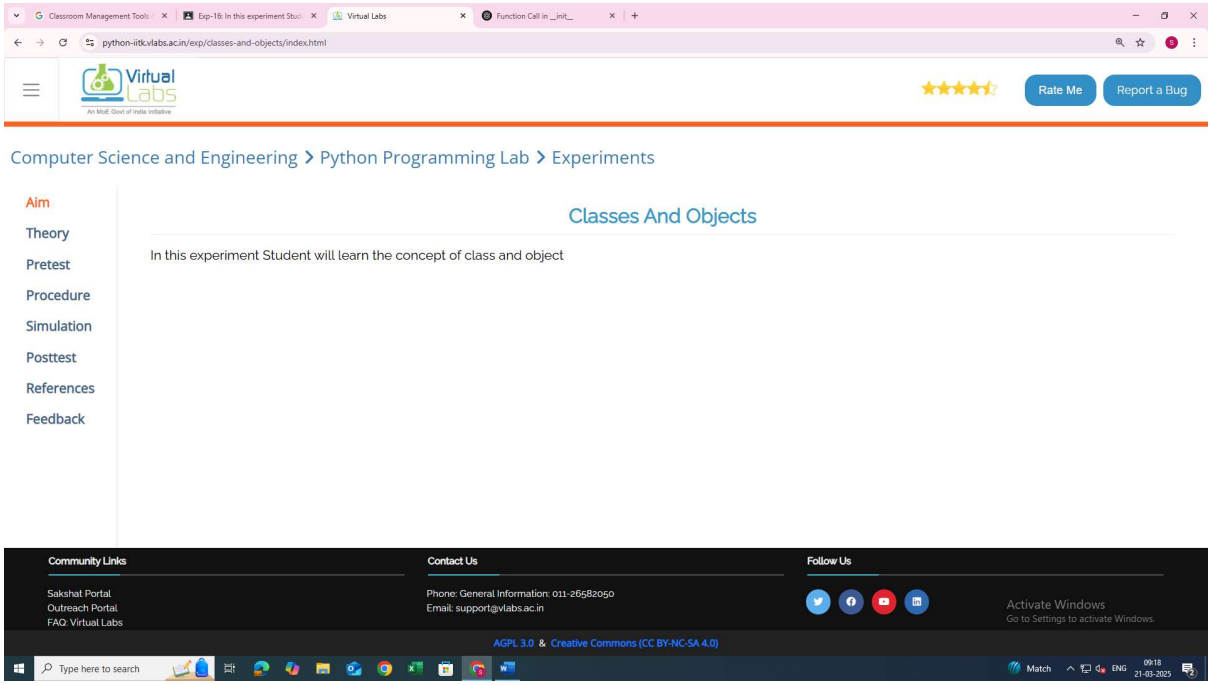
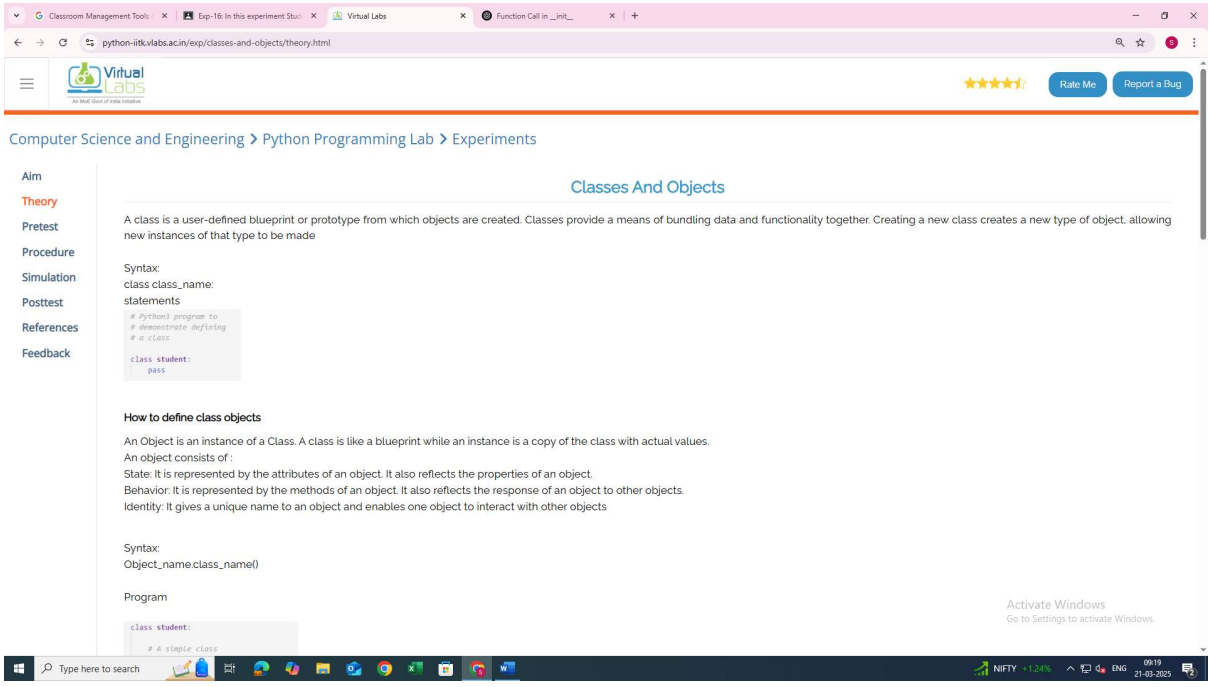
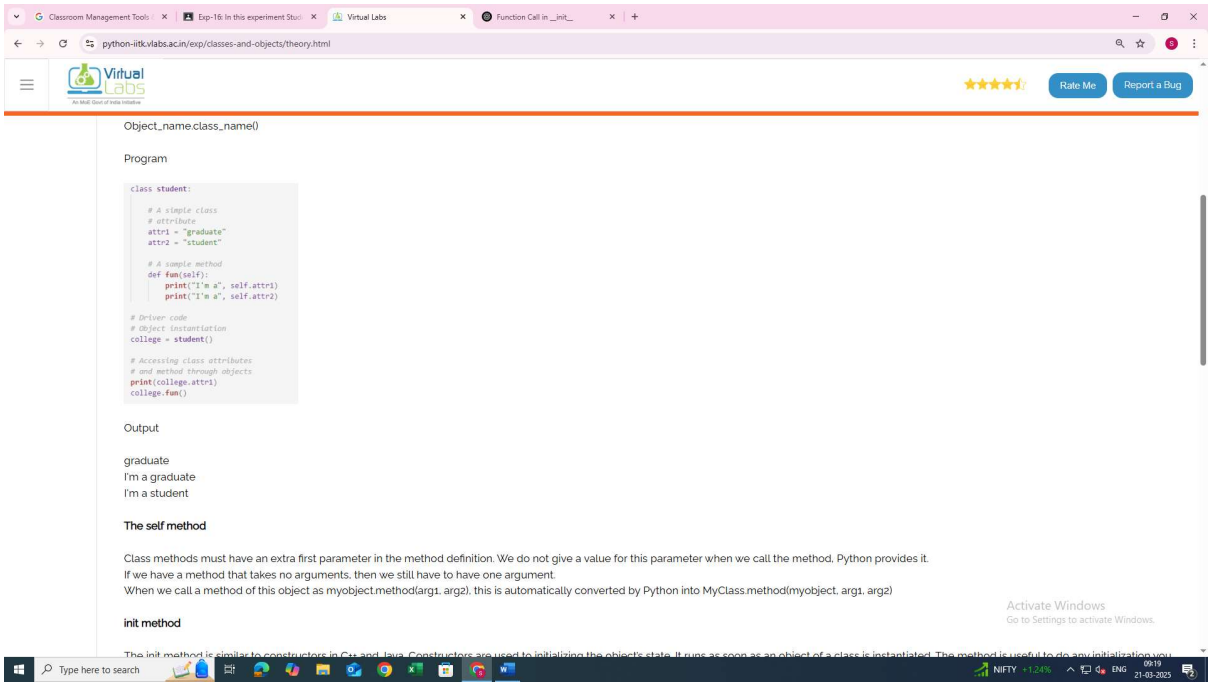
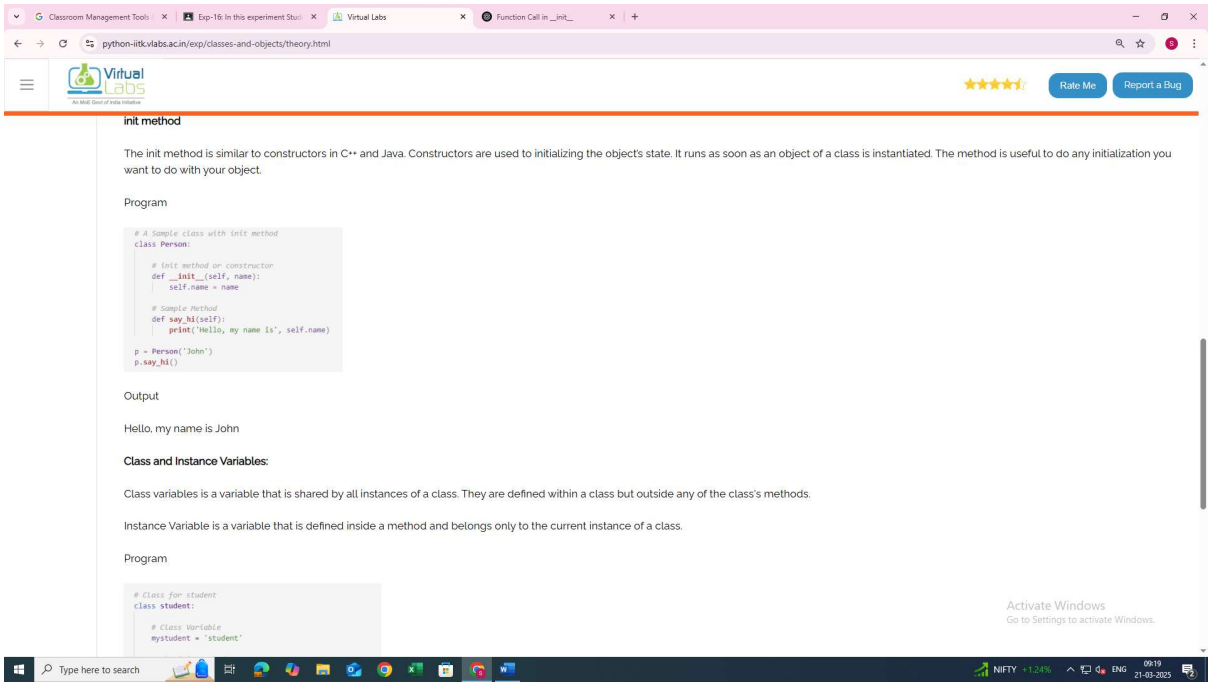
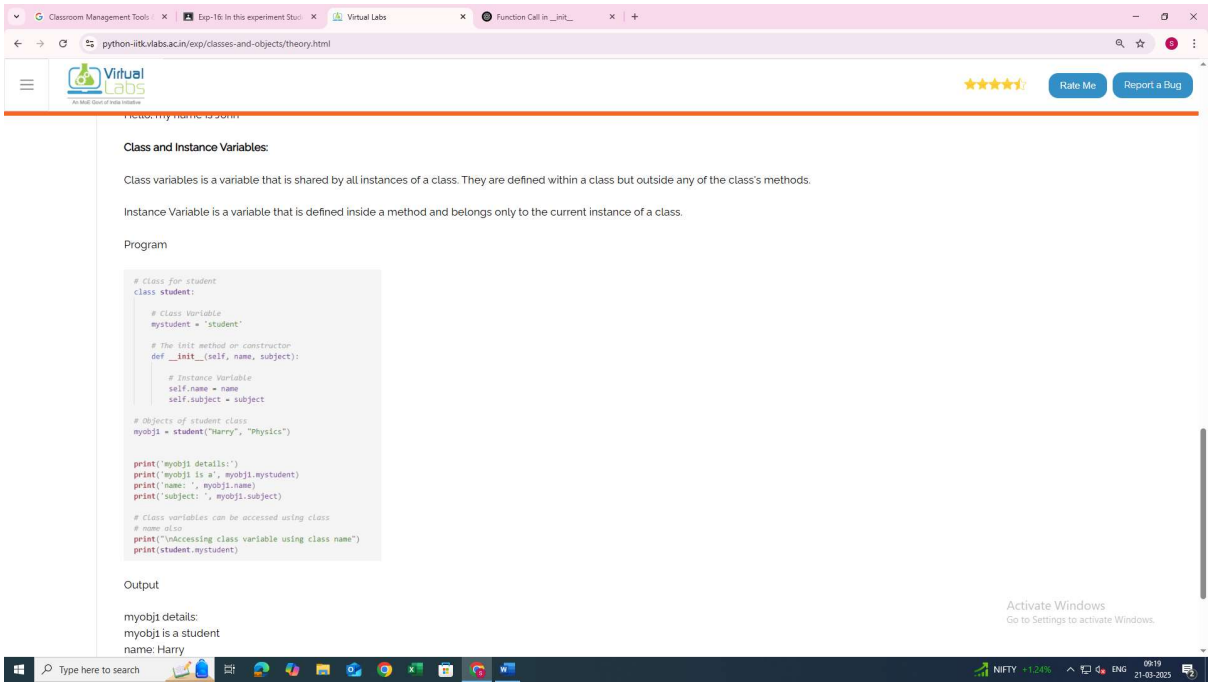

python-iitk.vlabs.ac.in/exp/classes-and-objects/index.html
Virtual Labs
Rate Me
Report a Bug
Computer Science and Engineering > Python Programming Lab > Experiments
Aim
Theory
Pretest
Procedure
Simulation
Posttest
References
Feedback
Classes And Objects
In this experiment Student will learn the concept of class and object
Community Links
Sakshat Portal
Outreach Portal
FAQ: Virtual Labs
Contact Us
Phone: General Information: 011-26582050
Email: support@vlabs.ac.in
Follow Us
Activate Windows
Go to Settings to activate Windows.
AGPL 3.0 & Creative Commons (CC BY-NC-SA 4.0)
Type here to search
Match
ENG
09:18
21-03-2025


python-iitk.vlabs.ac.in/exp/classes-and-objects/theory.html
Virtual Labs
Rate Me
Report a Bug
Computer Science and Engineering > Python Programming Lab > Experiments
Aim
Theory
Pretest
Procedure
Simulation
Posttest
References
Feedback
Classes And Objects
A class is a user-defined blueprint or prototype from which objects are created. Classes provide a means of bundling data and functionality together. Creating a new class creates a new type of object, allowing new instances of that type to be made
Syntax:
class class_name:
statements
# Python3 program to
# demonstrate defining
# a class
class student:
pass
How to define class objects
An Object is an instance of a Class. A class is like a blueprint while an instance is a copy of the class with actual values.
An object consists of :
State: It is represented by the attributes of an object. It also reflects the properties of an object.
Behavior: It is represented by the methods of an object. It also reflects the response of an object to other objects.
Identity: It gives a unique name to an object and enables one object to interact with other objects
Syntax:
Object_name.class_name()
Program
class student:
# A simple class
Activate Windows
Go to Settings to activate Windows.
Type here to search
NIFTY +1.24%
ENG
09:19
21-03-2025


Classroom Management Tools
Esp-16: In this experiment Stud
Virtual Labs
Function Call in __init__
python-iitkvlabs.ac.in/exp/classes-and-objects/theory.html
Virtual Labs
An MoE Govt of India Initiative
Rate Me
Report a Bug
Object_name.class_name()
Program
class student:
# A simple class
# attribute
attr1 = "graduate"
attr2 = "student"
# A sample method
def fun(self):
print("I'm a", self.attr1)
print("I'm a", self.attr2)
# Driver code
# Object instantiation
college = student()
# Accessing class attributes
# and method through objects
print(college.attr1)
college.fun()
Output
graduate
I'm a graduate
I'm a student
The self method
Class methods must have an extra first parameter in the method definition. We do not give a value for this parameter when we call the method, Python provides it.
If we have a method that takes no arguments, then we still have to have one argument.
When we call a method of this object as myobject.method(arg1, arg2), this is automatically converted by Python into MyClass.method(myobject, arg1, arg2)
Activate Windows
Go to Settings to activate Windows.
init method
Type here to search
NIFTY +1.24%
ENG
09:19
21-03-2025

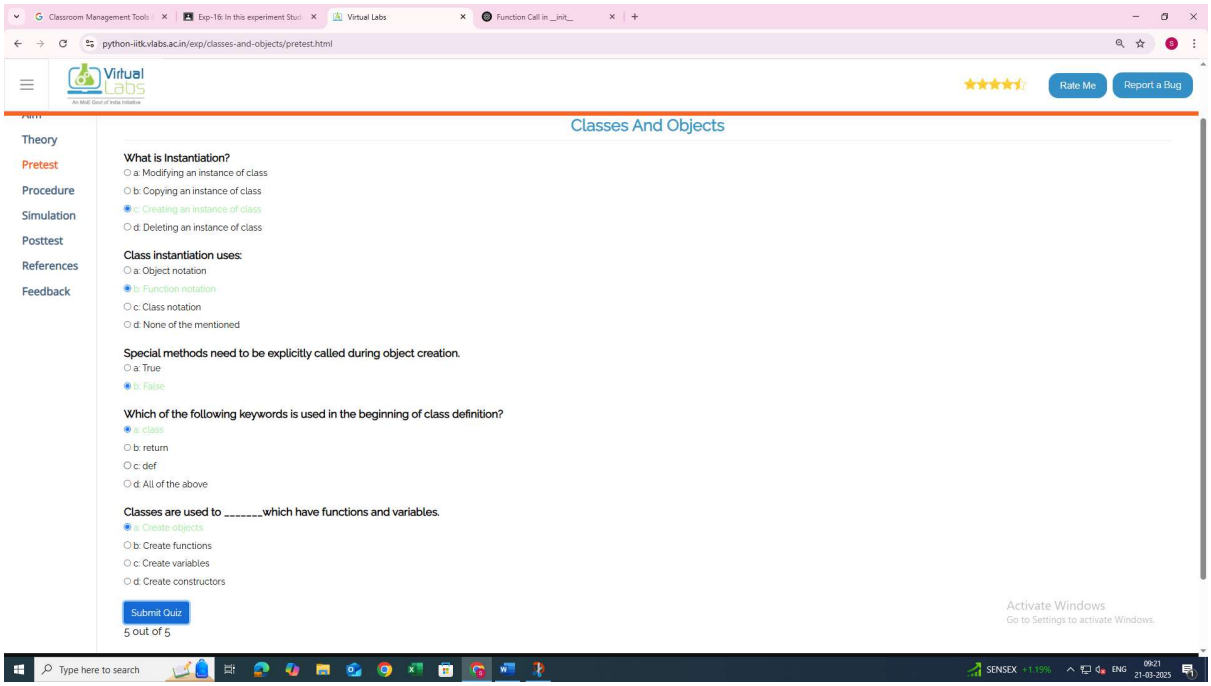

Classroom Management Tools
Esp-16: In this experiment Stud
Virtual Labs
Function Call in __init__
python-iitkvlabs.ac.in/exp/classes-and-objects/theory.html
Virtual Labs
An MoE Govt of India Initiative
Rate Me
Report a Bug
init method
The init method is similar to constructors in C++ and Java. Constructors are used to initializing the object's state. It runs as soon as an object of a class is instantiated. The method is useful to do any initialization you want to do with your object.
Program
# A Sample class with init method
class Person:
# init method or constructor
def __init__(self, name):
self.name = name
# Sample Method
def say_hi(self):
print('Hello, my name is', self.name)
p = Person('John')
p.say_hi()
Output
Hello, my name is John
Class and Instance Variables:
Class variables is a variable that is shared by all instances of a class. They are defined within a class but outside any of the class's methods.
Instance Variable is a variable that is defined inside a method and belongs only to the current instance of a class.
Program
# Class for student
class student:
# Class Variable
mystudent = 'student'
Activate Windows
Go to Settings to activate Windows.
Type here to search
NIFTY +1.24%
ENG
09:19
21-03-2025

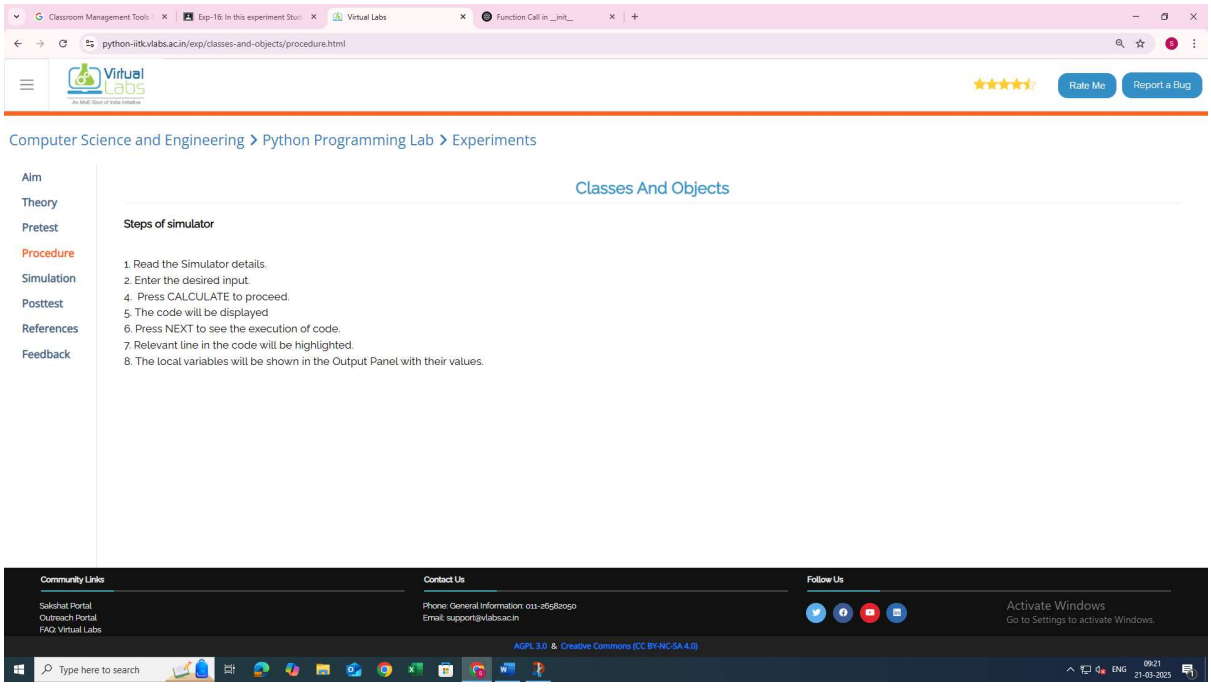


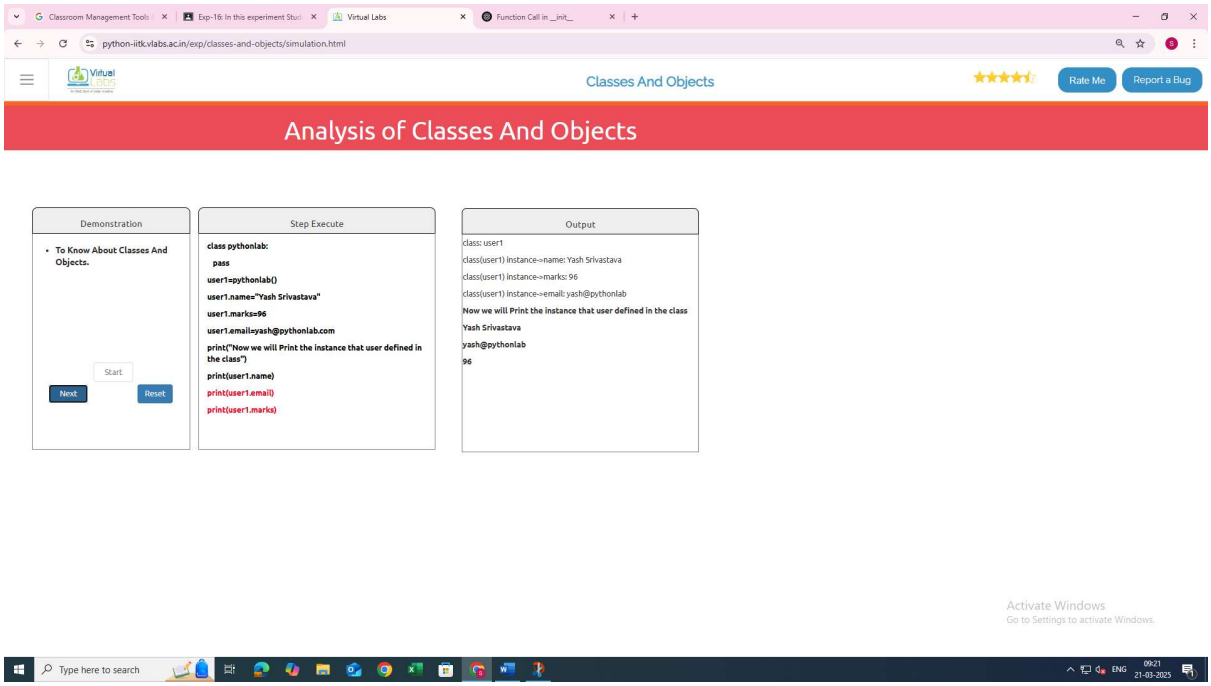

Output

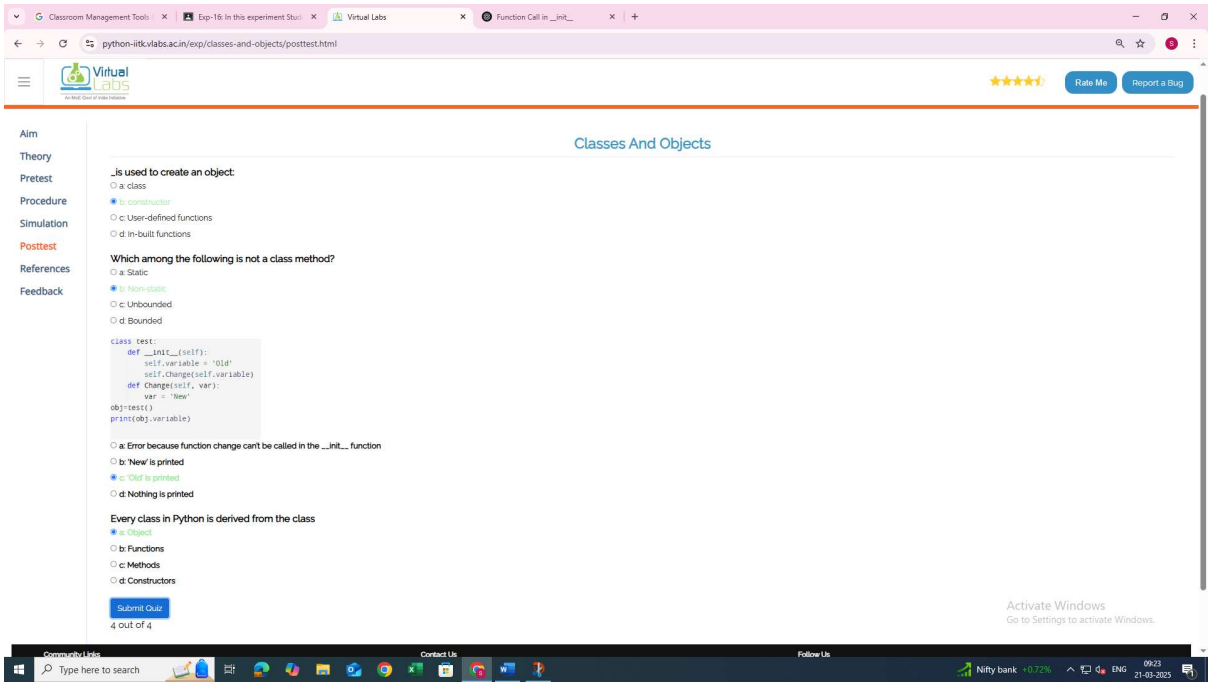
myobj1 details:
myobj1 is a student
name: Harry
subject: Physics

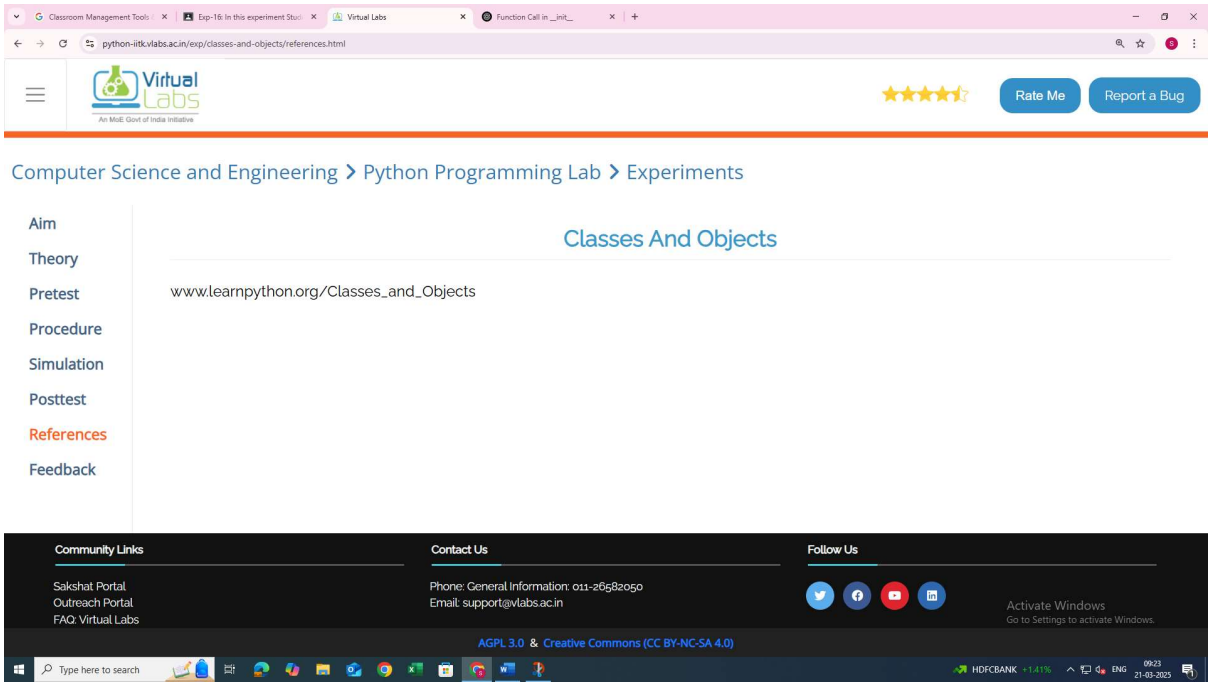
Accessing class variable using class name
student

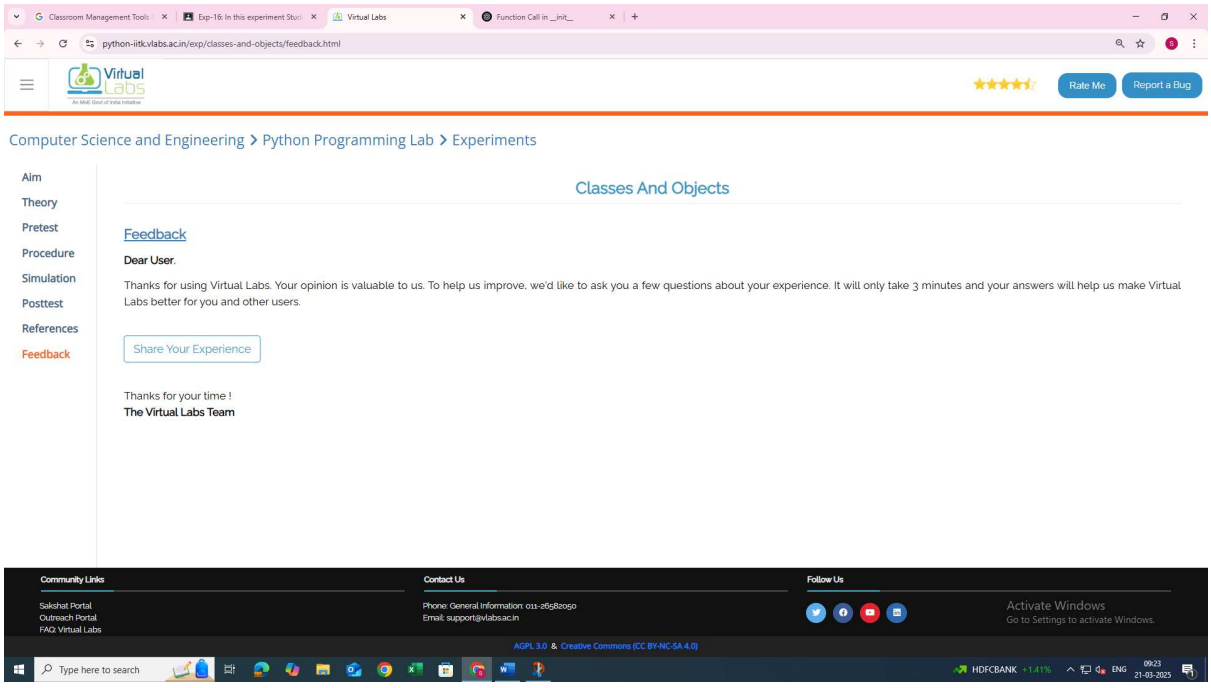

python-iitkvlabs.ac.in/exp/classes-and-objects/pretest.html
Virtual Labs
Rate Me
Report a Bug
Theory
Pretest
Procedure
Simulation
Posttest
References
Feedback
Classes And Objects
What is Instantiation?
a: Modifying an instance of class
b: Copying an instance of class
c: Creating an instance of class
d: Deleting an instance of class
Class instantiation uses:
a: Object notation
b: Function notation
c: Class notation
d: None of the mentioned
Special methods need to be explicitly called during object creation.
a: True
b: False
Which of the following keywords is used in the beginning of class definition?
a: class
b: return
c: def
d: All of the above
Classes are used to _____which have functions and variables.
a: Create objects
b: Create functions
c: Create variables
d: Create constructors
Submit Quiz
5 out of 5
Activate Windows
Go to Settings to activate Windows.
Type here to search
SENSEX +1.19%
ENG
09:21
21-03-2025


python-iitkvlabs.ac.in/exp/classes-and-objects/procedure.html
Virtual Labs
Rate Me
Report a Bug
Computer Science and Engineering > Python Programming Lab > Experiments
Aim
Theory
Pretest
Procedure
Simulation
Posttest
References
Feedback
Classes And Objects
Steps of simulator
1. Read the Simulator details.
2. Enter the desired input.
4. Press CALCULATE to proceed.
5. The code will be displayed
6. Press NEXT to see the execution of code.
7. Relevant line in the code will be highlighted.
8. The local variables will be shown in the Output Panel with their values.
Community Links
Sakshat Portal
Outreach Portal
FAQ: Virtual Labs
Contact Us
Phone: General Information: 011-26582050
Email: support@vlabs.ac.in
Follow Us
Activate Windows
Go to Settings to activate Windows.
AGPL 3.0 & Creative Commons (CC BY-NC-SA 4.0)
Type here to search
ENG
09:21
21-03-2025


Classroom Management Tools
Exp-16: In this experiment Stud
Virtual Labs
Function Call in __init__
python-iitkvlabs.ac.in/exp/classes-and-objects/simulation.html
Virtual Labs
Classes And Objects
Rate Me
Report a Bug
Analysis of Classes And Objects
Demonstration
To Know About Classes And Objects.
Start
Next
Reset
Step Execute
class pythonlab:
pass
user1=pythonlab()
user1.name="Yash Srivastava"
user1.marks=96
user1.email=yash@pythonlab.com
print("Now we will Print the instance that user defined in the class")
print(user1.name)
print(user1.email)
print(user1.marks)
Output
class: user1
class(user1) instance->name: Yash Srivastava
class(user1) instance->marks: 96
class(user1) instance->email: yash@pythonlab
Now we will Print the instance that user defined in the class
Yash Srivastava
yash@pythonlab
96
Activate Windows
Go to Settings to activate Windows.
Type here to search
ENG
09:21
21-03-2025


Classroom Management Tools
Exp-16: In this experiment Stud
Virtual Labs
Function Call in __init__
python-iitkvlabs.ac.in/exp/classes-and-objects/posttest.html
Virtual Labs
Rate Me
Report a Bug
Aim
Theory
Pretest
Procedure
Simulation
Posttest
References
Feedback
Classes And Objects
_is used to create an object:
a: class
b: constructor
c: User-defined functions
d: In-built functions
Which among the following is not a class method?
a: Static
b: Non-static
c: Unbounded
d: Bounded
class test:
def __init__(self):
self.variable = 'Old'
self.Change(self.variable)
def Change(self, var):
var = 'New'
obj=test()
print(obj.variable)
a: Error because function change can't be called in the __init__ function
b: 'New' is printed
c: 'Old' is printed
d: Nothing is printed
Every class in Python is derived from the class
a: Object
b: Functions
c: Methods
d: Constructors
Submit Quiz
4 out of 4
Community Links
Contact Us
Follow Us
Activate Windows
Go to Settings to activate Windows.
Type here to search
Nifty bank +0.72%
ENG
09:23
21-03-2025


python-iitkvlabs.ac.in/exp/classes-and-objects/references.html
Virtual Labs
An MoE Govt of India Initiative
Rate Me
Report a Bug
Computer Science and Engineering > Python Programming Lab > Experiments
Aim
Theory
Pretest
Procedure
Simulation
Posttest
References
Feedback
Classes And Objects
www.learnpython.org/Classes_and_Objects
Community Links
Sakshat Portal
Outreach Portal
FAQ: Virtual Labs
Contact Us
Phone: General Information: 011-26582050
Email: support@vlabs.ac.in
Follow Us
Activate Windows
Go to Settings to activate Windows.
AGPL 3.0 & Creative Commons (CC BY-NC-SA 4.0)
Type here to search
HDFCBANK +1.41%
ENG
09:23
21-03-2025


python-iitkvlabs.ac.in/exp/classes-and-objects/feedback.html
Virtual Labs
Rate Me
Report a Bug
Computer Science and Engineering > Python Programming Lab > Experiments
Aim
Theory
Pretest
Procedure
Simulation
Posttest
References
Feedback
Classes And Objects
Feedback
Dear User,
Thanks for using Virtual Labs. Your opinion is valuable to us. To help us improve, we'd like to ask you a few questions about your experience. It will only take 3 minutes and your answers will help us make Virtual Labs better for you and other users.
Share Your Experience
Thanks for your time !
The Virtual Labs Team
Community Links
Sakshat Portal
Outreach Portal
FAQ: Virtual Labs
Contact Us
Phone: General Information: 011-26582050
Email: support@vlabs.ac.in
Follow Us
Activate Windows
Go to Settings to activate Windows.
AGPL 3.0 & Creative Commons (CC BY-NC-SA 4.0)
Type here to search
HDFCBANK +1.41%
ENG
09:23
21-03-2025