



CS304 P-Programming Lab

Object Oriented Programming (Virtual University of Pakistan)



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Programming Lab

CS304P – Object Oriented Programming



Department of Computer Science, Virtual University of Pakistan

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Lab 01

Consider the following scenario and identify all objects, their attributes and behaviors.

In Virtual University bookshop, the handouts of all courses are provided at reasonable price. The handouts are made in accordance with the video lectures recorded by famous professors. It is a step to facilitate students to easily digest the course contents.

Solution:

BookShop	
Characteristics (Attributes)	Behavior (Operations)
Name	Set Order
Address	Get Order
Phone No	Confirm Order
	Deliver Order
	Update Order
	Receive Payment

Handouts	
Characteristics (Attributes)	Behavior (Operations)
Title	Download
Author Name	Upload
Number of Pages	Read
Number of Chapters	Write
Created Date	Edit
Modified Date	

Video Lecture	
Characteristics (Attributes)	Behavior (Operations)
Video Lecture No	Record
Video Name	Upload
Video Duration	Download
Video URL	Watch
	Stop
	Forward
	Reverse
	Increase Speed
	Decrease Speed
	Increase Volume
	Decrease Volume
	Playback

Professor	
Characteristics (Attributes)	Behavior (Operations)
Name	Teach
Age	Develop Assignment
Gender	Develop Quiz
Employee ID	Develop GDB
Qualification	Prepare Exam
Specialization	Take Exam
Experience	Mark Activities

Student	
Characteristics (Attributes)	Behavior (Operations)
Name	Study
Age	Give Exam
Gender	Attempt Activities
Student ID	
Study Program	
Current Semester	
CGPA	

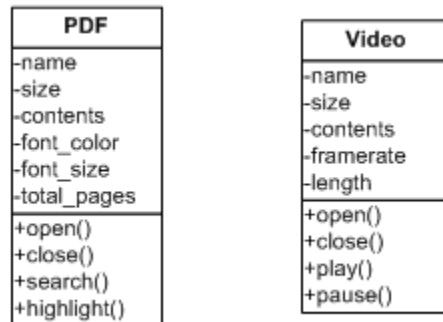
Course	
Characteristics (Attributes)	Behavior (Operations)
Course Code	Add Course Information
Course Title	Publish Course Information
Credit Hours	View Course Information
Total Marks	Edit Course Information
Course Instructor	

Course Content	
Characteristics (Attributes)	Behavior (Operations)
Number of Topics	Upload
Topic No	View
Topic Description	Write
Composed by	Edit
Published by	

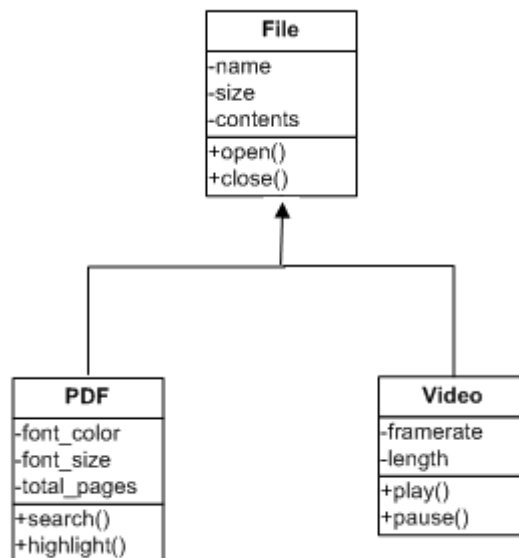
Note: Everyone visualizes real life problems in different ways, so solutions may vary from student to student. Further, Students can also add more Attributes/ Behaviors.

Lab 02

In the below diagram, we have two different types of file classes (PDF and Video). You are required to apply the concept of generalization on the given classes and draw class diagram showing this generalization relationship.



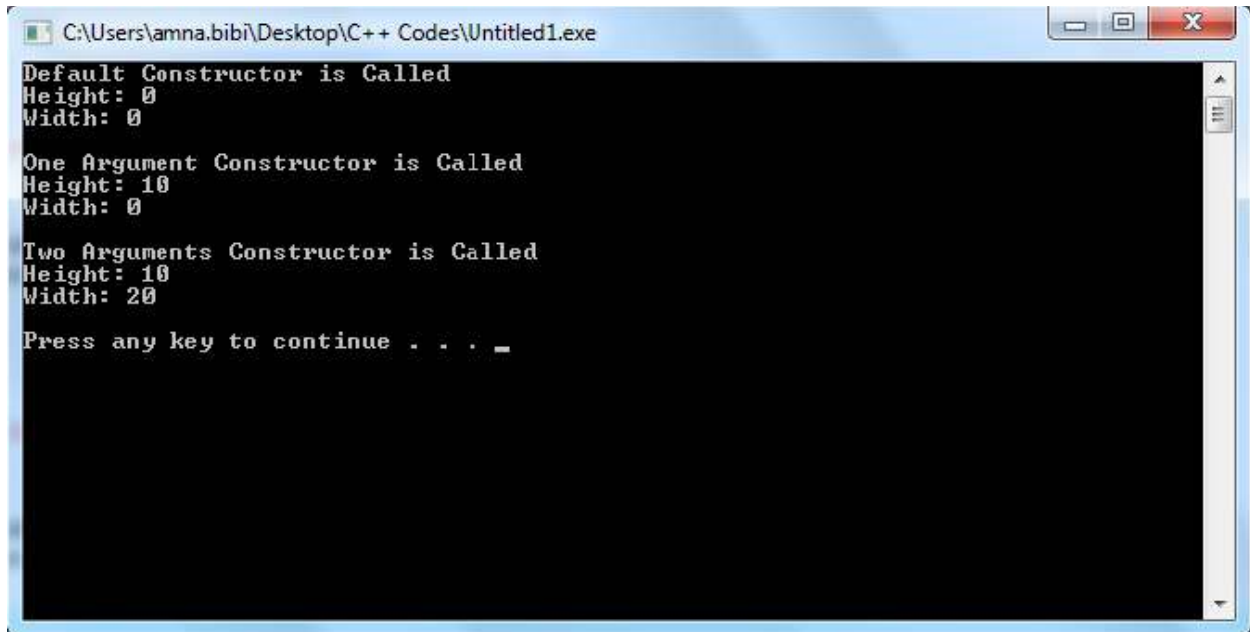
Solution:



Lab 03

Write a program which consists of a class named **Room** having two data members **Height** and **Width**, the class should also consist of three constructors i.e. Default constructor, one argument constructor and two arguments constructor.

After running your program, the following screen should display.



```
C:\Users\amna.bibi\Desktop\C++ Codes\Untitled1.exe
Default Constructor is Called
Height: 0
Width: 0

One Argument Constructor is Called
Height: 10
Width: 0

Two Arguments Constructor is Called
Height: 10
Width: 20

Press any key to continue . . . _
```