

USMAN INSTITUTE OF TECHNOLOGY

Department of Computer Science CS121 Object Oriented Programming

Lab # 06 Objects and Classes in Python

Objective:

This experiment introduces the students to the concept of Objects and Classes using Python as a Programming Language.

Name of Student:	
Roll No:	Sec
Date of Experiment:	
Marks Obtained/Remarks:	
Signature:	

Student Exercise

TV Sets

Each TV is an object with states (that is, current channel, current volume level, and power on or off are its properties that are represented by data fields) and behaviors (change channels, adjust volume and turn on/off are the actions each TV object implements with methods).

UML diagram for the TV class is shown below

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channel: int volumeLevel: int

TV()

on: bool

turnOn(): None turnoff(): None getChannel(): int

setChannel(channel: int): None

getVolume(): int

setVolume(volumeLevel: int): None

channelUp(): None channelDown(): None volumeUp(): None volumeDown(): None The current channel (1 to 120) for this TV
The current volume (1 to 7) of this TV
Indicates whether this TV is on/off
Constructs a default TV object
Turns on this TV

Turns off this TV
Returns the channel for this TV
Sets a new channel for this TV
Gets the volume level for this TV
Sets a new volume level for this TV

Increase the channel by 1
Decrease the channel by 1
Increase the volume by 1
Decrease the channel by 1

Exercise 1

Write Python code for defining the TV class

Exercise 2

Implement a program to create two TV objects. The program turns on the first TV, set channel to 30 and set volume to level 3. The program then turns on the second TV, twice increasing its channel by 1, and increase its volume by 1. The program finally displays the state of both the objects.