Prabodh
PAGE No. :
DATE :

Chapter - 13
Advanced Python 2

Virtual Environment
An environment which is same as the system interpretor but is isolated from the other python environments on the system.

Installation
To use virtual environments, we write

```
pip install virtualenv
```
↳ install the package

We write, create a new environment using:

```
virtualenv myprojectenv
```
→ creat a new venv

The next step after creating the virtual environment is to activate it.
We can now use this virtual environment as a separate python installation.

pip freeze command
pip freeze returns all the packages installed in a given python environment along with the versions

"pip freeze > requirement.txt"

The above command creats a file named requirement.txt in the same directory

containing the output of pip freeze.

We can distribute this file to other uses and they can recreate the same environment using:

```
pip install -r requirement.txt
```

Lambda functions

function created using an expression using lambda keyword.

Syntax:

```
lambda arguments : expressions
```

↳ can be used as a normal function

example:

```
square = lambda x: x*x
square(6)
```

↳ returns 36

```
sum = lambda a, b, c: a+b+c
sum(1, 2, 3)
```

→ returns 6

Bin method (strings)

creates a string from iterable objects.

```
l = ["apple", "mango", "banana"]
"and".join(l)
```

The above line will return "apple, and, mango and, banana"

format method (Strings)
formats the values inside the string into a desired output.

template.format(p1, p2...)
↳ Arguments

Syntax for format looks like:

"{} is a good {}".format("Abhi", "boy") — ①

"{1} is a good {0}".format("Abhi", "boy") — ②

Output for ①
Abhi is a good boy.

Output for ②
Boy is a good Abhi.

Map, Filter and Reduce
Map applies a function to all the items in an input_list.

Syntax: ↱ can be lambda function
map(function, input_list)

filter creates a list of items for which the function returns true.

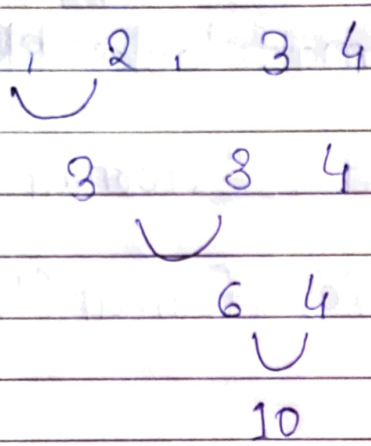
↱ can be a lambda function
list(filter(function))

Reduce applies a rolling computation to sequential pair of elements.

```
from functools import reduce
val = reduce(function, list1)
```

↳ can be a lambda function.

If the function computer sum of two numbers and the list is [1, 2, 3, 4]



Sequential Computation

Chapter-13
Practise Set

Que 1. Create two virtual environments, install few packages in the first one. How do you create a similar environment in the second one?

Que 2. Write a program to input name, marks and phone number of a student and format it using the format function like below:

"The name of the student is Abhi, His marks are 72 and phone number is 99999888"

Que 3. A list contains the multiplication table of 7. Write a program to convert it to a vertical string of some numbers.

Que 4. Write a program to filter a list of number which are divisible by 5.

Que 5. Write a program to find the maximum of the number in a list using the reduce function.

Que 6. Run pip freeze for the system interpreter. Take the contents and create a similar virtualenv.

Que 7. Explore the Flask module and create a web server using flask and Python.