VlabsDev

Introduction (Round 0)

1.1 Name of Developer	Kantesh Balani
1.2 Name of your Institute	Indian Institute of Technology Kanpur
1.3 Name of Participating Institute	Indian Institute of Technology Kanpur
1.4 Application Type	Participating Institute
2.1 Lab Name and ID	Python for Basic Arithmetic Operations | 172
2.2 Name of Discipline	Computer Science and Engineering
2.3 Target Group	UG,PG

2.4 University

Abdul Kalam Technical University Uttar Pradesh
Indian School of Business Telangana
Indian Institute of Management Bangalore Karnataka
Indian Institute of Management Calcutta West Bengal
SCMHRD Maharashtra

2.5 Name of Experiments

SNo.	Experiment ID	Experiment Name
1	1403	i. Arithmetic Operations
2	1404	ii. Built-in Functions
3	1405	iii. Loops
4	1406	iv. Data Types
5	1407	v. Strings
6	1408	vi. Classes and Objects
7	1409	vii. Built-in Modules
8	1410	viii. Constructors and Inheritance
9	1411	ix. File Operators
10	1412	x. GUI Application

3.1 Intention of Virtualization

· Detailed description and discussion will be provided for each experiment.
· All the basics of experiments will be implemented on the basis of lab manuals.

3.2 How will the student get the feel of lab?

· Students will perform these experiment in classroom while Faculty will explain all the steps of experiments to huge number of students at one time. They will be assigned new kind of practices through these experiments.

3.3 Will you be using animations?

· Animations were not required in this virtual lab because simulators were brought into use, but animations will be used in some other Virtual Lab.

4.1 Frontend Technology (UI/UX)

i. PHP ii. CSS iii. HTML

4.2 Backend Technology

i. MySQL ii. JavaScript iii. PHP

4.3 Miscellaneous Technology

i. Oracle ii. Python 3

5.1 Learning Objective and Component

- To teach the basics of using arithmetic operations used in Python programming.
- The purpose of the Virtual lab is to create interest in students to conduct new experiments in various disciplines.
· The user will able to write correct syntax as per his requirements in his programs.
· With the help of our virtual lab, students get a chance to learn programming using Python language as they are provided with an interactive simulator. It is beneficial in understanding the basics of a language which simply cannot be understood by self evaluation.
- There might be some users who have a problem of generating logical statements by their own. Such will be taught the execution of code line by line which help them.

5.2 Student ability to perform in real lab

The students will be exposed sufficiently during virtual lab experiments. They can perform same experiments in

their real labs with perfection and without any assistance.

5.3 Outcome through Simulator

· The simulators are designed in such a way that a fresher can learn Python for it.
· Only basic programming knowledge will be required that he can achieve by scrolling through the

content provided for each experiment.

5.4 References

1. Richard L. Halterman; Learning to Program with Python; 13th November, 2011
2. K. R. Srinath ; International Research Journal of Engineering and technology vol 04, issue:12, December-2017
3. www.vlab.co.in

Budget

6.1 Manpower	640000
6.2 Travel	120000
6.3 Contingency	300000
6.4 Consumables	180000
6.6 Total **Total budget should not exceed** **Total No. of Experiments X 2 lakhs**	19,70,000

6.7 Justification of Budget	Few high-end computers are required (i) 18GB Ram, 2 TB HDD, 7th Gen intel core i5-7400T, (ii) 27-inch i-Mac, 3.5 GHz Quad core i-5, (iii) and 2 No of HP 24-QA157 8th Gen. Itel core 8400T/8GB/1TB/ 2GB DDR5GB graphics or equivalent computers for the activity. In parallel at least two manpower will be hired to take forward these experiments. Travel, and contingency is required for conducting workshops, internet-usage fee, stationery, UPS, cartridge, etc needs.