



RAMCO INSTITUTE OF TECHNOLOGY

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Department of Computer Science and Business Systems

Academic Year 2022 – 2023 (Odd Semester)

Degree, Semester & Branch: B.Tech, I & CSBS

Course Code & Title: GE3151 & Problem Solving and Python Programming

Name of the Faculty member (s): Dr.S.Erana Veerappa Dinesh

Innovative Practice Description

- **Unit / Topic:** Unit II /Operators
- **Course Outcome:** CO 2
- **Topic Learning Outcome:** TLO5
- **Activity Chosen:** Virtual Lab

- **Justification:**

The Virtual Laboratory is an interactive environment for creating and conducting simulated experiments: a playground for experimentation. A virtual laboratory is an on screen simulator that learners use to test ideas and observe results. Since the principles of operators is mandatory for the programming language, hands on demonstration is given to the students through Virtual lab by using the following link

<https://python-iitk.vlabs.ac.in/exp/arithmetic-operations/simulation.html>

- **Time Allotted for the Activity:** 30 Minutes
- **Details of the Implementation:**

The course instructor explained the concept of the various operators. He opened the Virtual Lab using aforementioned link and demonstrates the various operators working to the students. At last 10 minutes, the course instructor chosen few students and instructed them to explain the various examples of operators by the students.

- **CO – PO / PSO mapping:**

CO	PO 1	PO 2	PO 3	PSO 3
CO 1	2	2	2	1

(1 – Low

2 – Moderate

3 – High)

- **PO / PSO mapped:**

Innovative practice	PO 1	PO 2	PO 3	PSO 01
	3	2	1	2
Justification for correlation	Students could be able to apply basic theory and principles of operators	Students could be able to have the hands-on with operator on Virtual lab	Students could be able to recollect the basic principles of operators	Students could be able to knowledge about the operator to their peer group of people.

- **Images / Screenshot of the practice:**

The screenshot shows the 'Arithmetic Operations' page on the Virtual Labs website. The page has a header with the Virtual Labs logo and navigation links (HOME, PARTNERS, CONTACT). Below the header, there is a breadcrumb trail: 'Computer Science and Engineering > Python Programming Lab > Experiments'. The main content area is titled 'Arithmetic Operations' and contains a list of steps for the simulator:

- 1. Read the simulator details.
- 2. Enter the values you want to operate.
- 3. Select the desired type of operation from the operations list.
- 4. Press CALCULATE to proceed.
- 5. Press NEXT to see the execution of the code.
- 6. Relevant line in the code will be highlighted.
- 7. The local variables will be shown in the Output Panel with their values.

Fig 1: Demonstration on operators

The screenshot shows the 'Analysis of Arithmetic Operators' simulator interface. The interface is divided into three main sections:

- Problem?:** A dropdown menu is set to 'Division'. Below it, there are input fields for 'a' (34) and 'b' (56). At the bottom, there are 'Next', 'Start', and 'Reset' buttons.
- Step Execute:** The code being executed is:


```
a = Input('Enter a Number')
b = Input('Enter a Number')
c = a / b
print("The Division is :",c)
```
- Result:** The output shows the values of variables:


```
a : 34
b : 56
c : 0.6071428571428571
Output :
The Division is : 0.6071428571428571
```

Fig:2 Demonstration on analysis of arithmetic operators

- **Reflective Critique:**

- ❖ *Feedback of practice from students and other stakeholders:*

- Students easily understand the working of operators and its corresponding code.
- Students said that the pretest and posttest is very useful to recollect the concepts.

- ❖ *Benefit of the practice:* (E.g.: Outcome attainment would have increased due to innovative practice over conventional practice)

- Students had understood the concepts of the various operators.
- Most of the students were actively participated and enjoyed once they answered correctly in pretest.

- ❖ *Challenges faced in implementation:*

- Some students only involved in the demonstration activity.
- The same activity will be planned in the laboratory session to make all the students familiar in the virtual environment.

References:

- ❖ https://www.ritrjpm.ac.in/images/computer-science/2021-2022/MGM_VII_Vlab_Demo.pdf
- ❖ <https://www.ritrjpm.ac.in/images/computer-science/CS6801-MCAP-MGM.pdf>
- ❖ https://www.ritrjpm.ac.in/images/computer-science/TPS_Demo_SM.pdf

Signature of Faculty Member

HOD