

Design Learning with Construction and Simulation of Universal Gates using Basic Logic Gates



Date of Activity: 30/12/2019

Class: II Semester B.C.A - 'A' Sec

Lecturer Name: Mr. Mithun D'Souza

Objective:

- To understand the fundamental concepts and techniques used in digital Circuit Construction.
- To be familiar and to know the working principles of basic gates, Exclusive gates and Universal gates.
- To improve the learning ability of the students by using simulation of logic gates.
- To justify how the NAND and NOR gates are considered as Universal Gates.

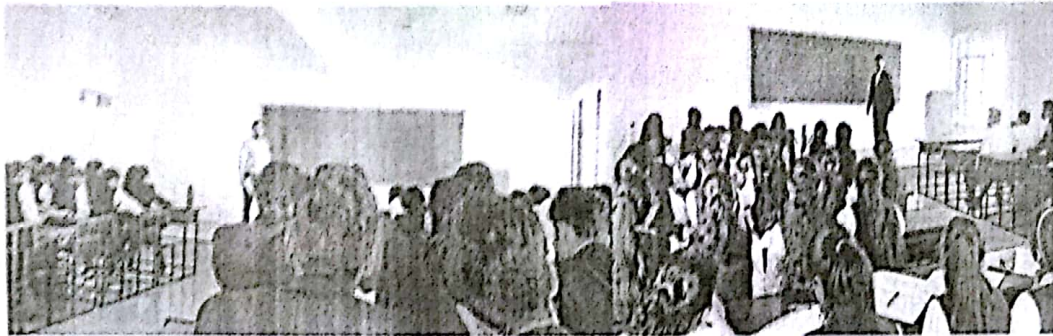
Rule of this Activity:

1. Construction of basic gates and exclusive gates using only NAND and NOR gates.
2. Construction of Truth Table values for basic gates which are constructed by using only NAND and NOR gates.
3. Simplification of Boolean expressions for the logic circuits which are created using only NAND and NOR gates.

Outcome:

The students gained basic knowledge of Logic gates and became familiar with basic logic gates -- AND, OR & NOT, XOR, XNOR. Students, worked Independently and in team to build simple logic circuits using basic gates and learnt to design and construct various logic gates and simplify Boolean equations. They demonstrated the working of basic gates which are constructed only using NAND and NOR gates as a Universal Logic gates, which can be used to produce any other logic or Boolean function with the NAND and NOR gates being minimal.

Images of Students Participation:



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