

10B28CI481: Computer Organization Lab

Course Credit: 1

Semester: IV

Objective:

- Learn how to write simple programs in the assembly language
- Understand the different forms of addressing and implement them
- Learn how to use flags, control statements, arrays, and pointers
- Become familiar with subroutines and stack organization

Learning Outcomes:

To expose the students to the various key aspects of Computer Organization & Architecture by enabling them to perform FPGA based prototyping of experiments with support of a virtual environment. The primary need for virtualization here is multifold.

List of Experiments

S NO	Topics
1	Ripple Carry Adder
2	Carry-look-ahead adder
3	Registers and Counters
4	Wallace Tree Adder
5	Combinational Multipliers
6	Booth's Multiplier
7.	Arithmetic Logic Unit
8.	Memory Design
9.	Associative cache Design
10	Direct Mapped cache Design
11	CPU Design
12	Mathematical expressions
13	File operations-1

14	File operations-2
15	PROJECT-Select any project of your choice

References

1. The Intel Microprocessor 80x86, Pentium, Pentium Pro processor, Pentium II Pentium III, Pentium IV Architecture, Programming, and Interfacing by Berry B.Brey, Eighth Edition, Prentice Hall, 2009. ISBN 978-81-317-2622-8.will be used as the main text book, however the inputs will be supplemented with information from elsewhere wherever the same is required.
2. “The 8051 microcontroller” by Kenneth Ayala is recommended for 8051 only.
3. Yu-cheng Liu,Glenn A. Gibson , “The 8086/8088 Family Architecture, Programming & design”, Second Edition, PHI.
4. Douglas Hall, “Microprocessors & Interfacing, Programming & Hardware”,2nd Edn. Tata McGraw Hill.
5. Kenneth Ayala “The 8086 microprocessor programming and Interfacing the PC”.
6. Tom Shanley, [Protected Mode Software Architecture](#), Addison-Wesley (1996), ISBN 0-201-55447-X

Evaluation Scheme:

1. Mid Term Exam (Viva and Written Exam)	20
2. End term Exam (Viva and Written Exam)	30
3. Lab Records	5
4. Regular Assessment (Quality and quantity of experiment performed, Learning laboratory skills, Attendance etc.)	30
5. Project	15

Total	100
--------------	------------