BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
CSE306 (Computer Architecture Sessional)
July 2022 Term
All Lab Sections, December 18, 2022

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1. Problem Description

In this assignment, you are required to design a floating point adder circuit which takes two floating points as inputs and provides their sum, another floating point as output. Each floating point will be 32 bits long with following representation:

Sign	Exponent	Fraction
1 bit	12 bits	19 bits (Lowest bits)

You have to implement your design in any simulator software of your choice. Please note that, if your chosen simulator does not provide support for 32-bit ALU, you can construct one by cascading a number of smaller ALUs. Moreover, since construction of ALU is not the major focus of this assignment, you can take help from the Internet or other sources (or even use someone else's implementation) for the 32 bit ALU part only. The shifter circuit provided by the simulator software tool may be used as needed. Alternatively, you may implement them yourselves. The rest of the circuit design and implementation must be done by you. For this assignment, you will work in a group (same as the group for assignment on ALU). The report should contain introduction, problem specification, flowchart of the addition/subtraction algorithm, high-level block diagram of the architecture, detailed circuit diagram of the important blocks, ICs used with count as a chart, simulator used along with the version number and discussions.

2. Submission

Deadline For all sections: January 8, 2023 (Sunday) at 11:55 PM
A submission link will be opened on Moodle for submitting your simulation. Make a folder containing all your simulation project files, zip it, and submit it following the naming format. The naming format should be your section name followed by your group id (e.g., B1_Group7). Please ensure a single submission from each group (only a single member of the group should submit).

3. For Clarification

For any query, you can ask your instructor during the theory or sessional class. You can also use the moodle thread or email at "toufikuzzaman@teacher.cse.buet.ac.bd".

4. Version

This section contains the version of the assignment. It starts with Version 0. If we find some major problems in this assignment description file, then we shall change this pdf. In that case, we shall increase the version number and list the changes in this section. So, keep an eye on this version number of the pdf in moodle to see whether the version has been changed or not. If it is changed, first read this section to see where the changes have been made and whether it is applicable to your group. On the other hand, if the changes are minor (for example, correcting the grammatical mistakes), then the version number will not be changed.

4.1 Version 0

This is the initial version of the problem description pdf.