

BBM436: MicroProcessors Lab.  
2020-2021 Autumn  
Homework 2

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## **1 Phase: Creating workspace**

- Firstly i used minecraft to create an 74181 ALU and i did half of it. But doing it in minecraft was time consuming. So i decided to use Proteus.
- I downloaded and installed Proteus and will use it.

## **2 Phase: Running Examples**

- I ran examples and did my first 74181 ALU in Proteus 1 . I checked this ALU with random inputs.

## **3 Phase: Designing ALU and Register**

- I decided to do 16 bit ALU and Registers.
- I designed 16-bit ALU with 4 74181 ALU and 1 74182 lookahead carry generator 3 .
- I designed 16-bit registers with D Flip-Flops .

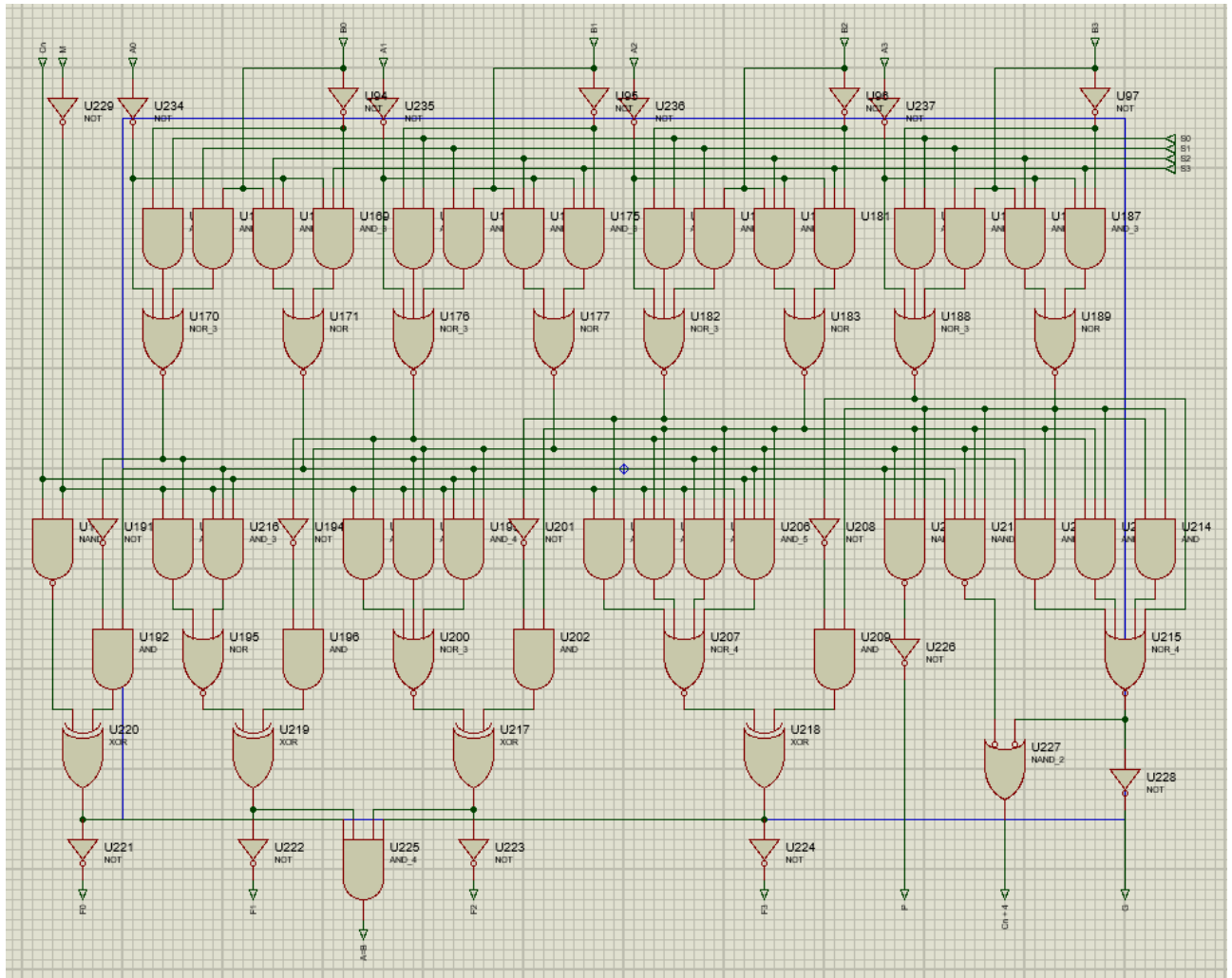


Figure 1: 74181 ALU

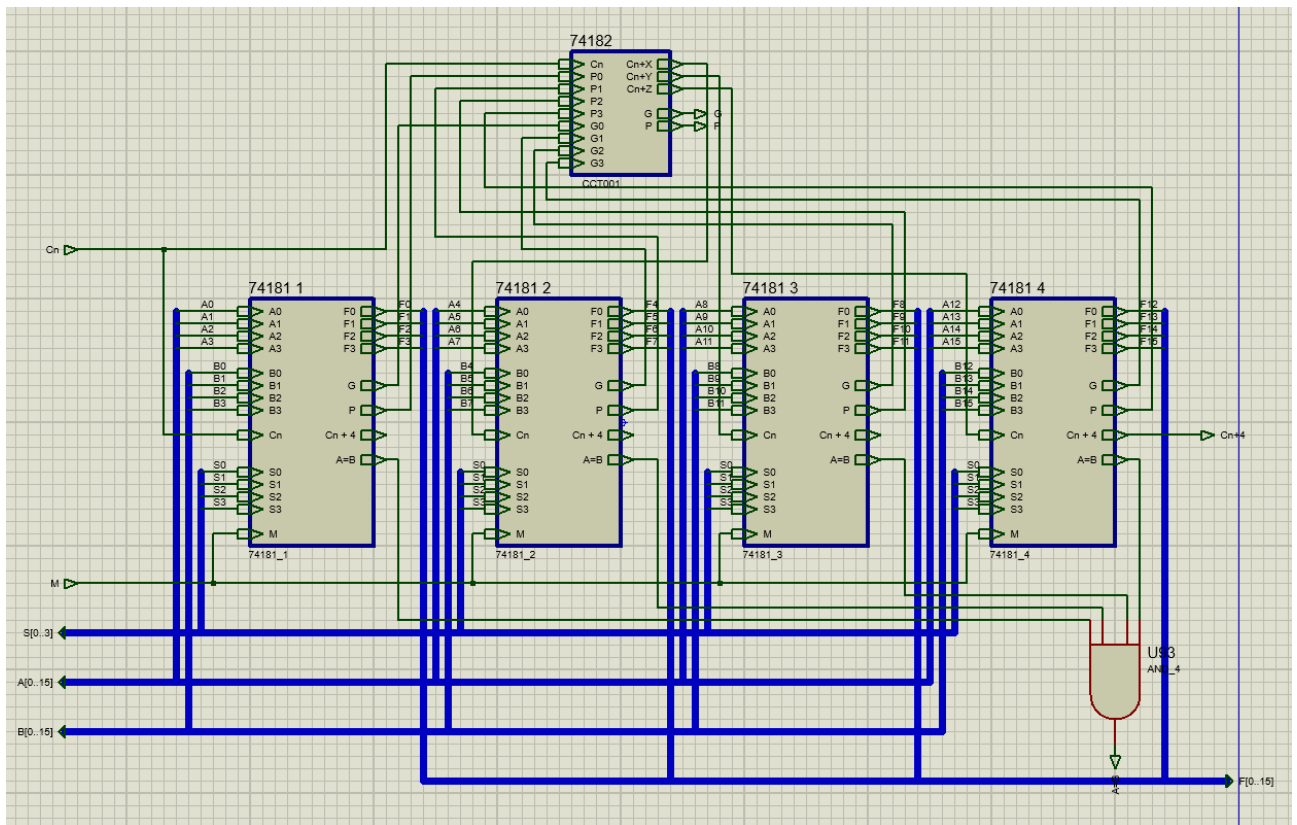


Figure 2: 16-bit ALU

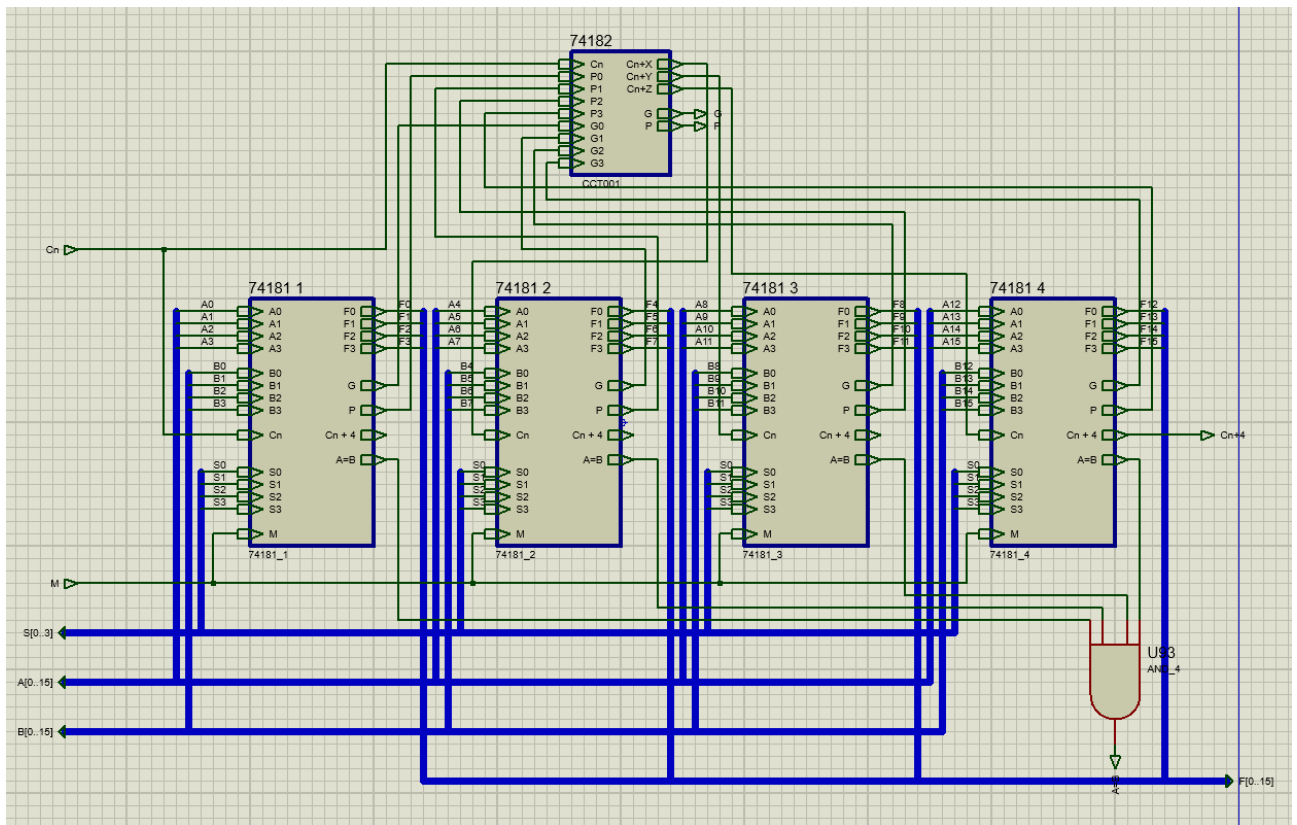


Figure 3: 16-bit ALU