Lab 03

Cos10004

CONG THANH NGO

2021

**Register**

Diagram

Description automatically generated with low confidence

|  |  |  |
| --- | --- | --- |
| 0x | Input Binary | Output Binary |
| 0 | 0000 | 0000 |
| 1 | 0001 | 0001 |
| 2 | 0010 | 0010 |
| 3 | 0011 | 0011 |
| 4 | 0100 | 0100 |
| 5 | 0101 | 0101 |
| A | 1010 | 1010 |
| B | 1011 | 1011 |
| C | 1100 | 1100 |
| D | 1101 | 1101 |
| E | 1110 | 1110 |
| F | 1111 | 1111 |

7.1. The program counter, or PC, is a special-purpose register that the processor uses to store the address of the next instruction to be executed.

7.2. A ripple counter is an asynchronous counter, means the first flip-flop is clocked by the clock input and the subsequent flip-flop will be clocked by the output of previous flip-flop.

**Big-endian 3-bit ripple counter out of JK Flip-Flops (Count from 000 to 111)**

Diagram

Description automatically generated

**Big-endian 3-bit ripple counter out of JK Flip-Flops (Count from 111 to 000)**

Diagram, schematic

Description automatically generated

**JK Counter with Common Clock**

A picture containing diagram

Description automatically generated

**MOD 6 Counter**

Diagram

Description automatically generated

17.2.

It’s important to handling the illegal state in order to make the system run without any obstacles.

**MOD 6 Counter with HEX Digit Display**

Diagram

Description automatically generated