1. General Introduction

There are totally **8** test files. Files “mips1.asm”, “mips2.asm”, “mips3.asm” … are the mips code of the test. File “machine_code1.txt”, “machine_code2.txt”, “machine_code3.txt” … are the corresponding machine codes (These files will be directly used for CPU test). File “DATA_RAM1”, “DATA_RAM2”, “DATA_RAM3” … show the corresponding data memory contents after the execution if instructions are implemented by CPU correctly.

2. What is each test file trying to test

In these test files, some “useless” instructions are inserted between other instructions to make sure that only one type of hazard exists in each test file.

1) Machine_code1.txt (mips1.asm) **IMPORTANT!!!**

   This test file contains **no branch, jump and any other hazards**. It just aims to **test other normal functions** like add, srl…

2) Machine_code2.txt (mips2.asm)

   This test file aims to test whether CPU can correctly handle **MEM_to_EX and WB_to_EX data hazards**

3) Machine_code3.txt (mips3.asm)

   This test file aims to test whether CPU can handle the hazard about **lw stall**.

4) Machine_code4.txt (mips4.asm)

   This test file aims to test whether CPU can handle the hazard about **register file simultaneously write and read**.

5) Machine_code5.txt (mips5.asm). **IMPORTANT!!!**

   This file aims to test whether CPU can correctly handle the **branch** instruction (**beq, bne**).

6) Machine_code6.txt (mips6.asm) **IMPORTANT!!!**

   This file aims to test whether CPU correctly handle the **jump** instruction (**j, jal, jr**).

7) Machine_code7.txt (mips7.asm)

   This file aims to test whether CPU correctly handle **the data hazard about jr.**

8) Machine_code8.txt (mips8.asm)

This file aims to test whether CPU can correctly handle **the data hazard about branch.**

3. How to end the program

The instruction **32'hffffffff** is regarded as the instruction the end the program.