CSCI36000\_Project\_Part\_1

Basic Machine UI

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//Main Menu is different depending on differing system status

//Menu 1

Initialization Menu

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1. Add Instruction File

2. Add Instruction Line By Line

3. Load Program to Main Memory

4. Display Empty Registers

5. Display Instruction Display with Default Values

6. Display Empty Memory

7. Help

8. Quit

==>>

//Menu 1A for choice 1

Add an Instruction File

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Please ensure usage of proper case.

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//Menu 1B for choice 2

Add Individual Instructions

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Enter Instructions in the following form: MOV 0100 0011

Enter Q if you are finished.

=>>

//Menu 2 following addition of instructions

//Choice 1 returns the user to Menu 1 (Initialization Menu)

Simulation Menu

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1. Clear All Data and Start Over

2. Add Instruction Line to End of Queue

3. Load Program into Main Memory

4. Display Empty Registers

5. Display Instruction with Default Values

6. Display Empty Memory

7. Help

8. Quit

==>>

//Menu 2A follows loading of program into main memory

Simulation Menu

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1. Clear all data and start over

2. Add Instruction Line to End of Queue

3. Display Registers

4. Display Instructions

5. Display Memory

6. Help

7. Quit

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//Register Display

//'Q' option returns to main menu

//'H' option provides explanation of the viewed environment

Registers

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GPRx4

R0 ==> 0000 0000 0000 0000

R1 ==> 0000 0000 0000 0000

R2 ==> 0000 0000 0000 0000

R3 ==> 0000 0000 0000 0000

IR ==> 0000 0000 0000 0000

PC ==> 0000 0000 0000 0000

X0 ==> 0000 0000 0000 0000

MA ==> 0000 0000 0000 0000

MB ==> 0000 0000 0000 0000

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Enter Q for Menu or H for Help

//Example of a help file. Menu help files will attempt to better explain selections

Help for Registers

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GPRx4 - Four General Purpose Registers (GPRs), numbered 0-3 and

referenced as R0 – R3. Also used as accumulators.

IR - Instruction Register. Holds the instruction to be executed

PC - Program Counter. Holds the address of the next instruction

to be executed

X0 - Index Register. Contains 16-bit base address for base

register addressing of memory.

MA - Memory Address Register MAR: Holds the address of the word

to be fetched from memory

MB - Memory Buffer Register MBR: Holds data just fetched from

or stored into memory.

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Enter Q to return to the Menu

//Instruction Display using basic L/S instruction format

Instructions

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0 PC ==>> LDR R0, 0, 0, 63 000000 0 0 00 000000

1 STR R1, 0, 0, 5 000000 0 0 00 000000

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R. Run S. Step Q. Menu H. Help

//Memory Display

Memory Display

--------------------------------------------------------------------

0000-0002 0000000000000000 0000000000000000 0000000000000000

0003-0005 0000000000000000 0000000000000000 0000000000000000

--------------------------------------------------------------------

R. Range Lookup Q. Menu H. Help