Activity 2: Central Processing Unit (Part 1)

Group No : 3

Group Member :

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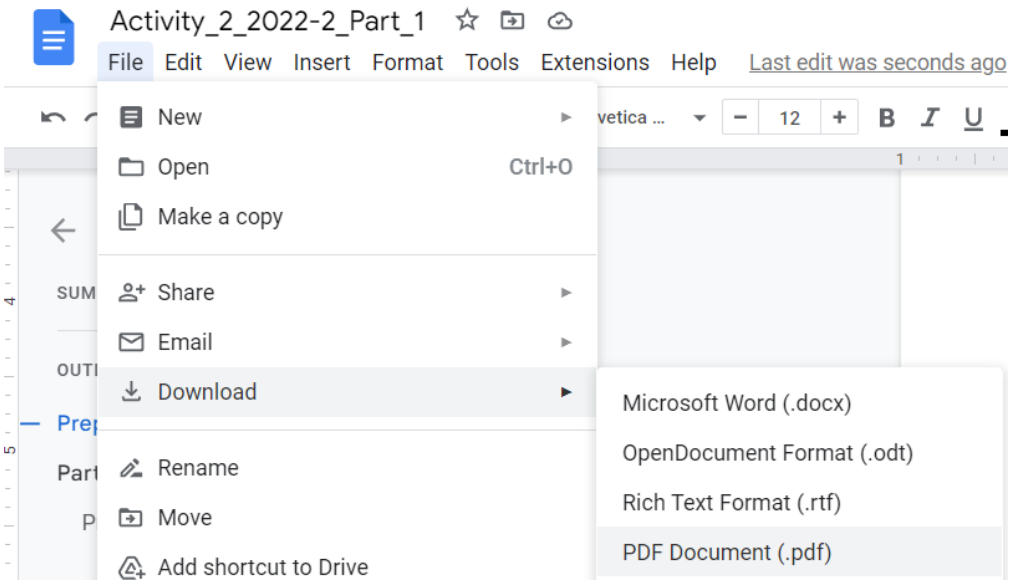
Preparation

- In part 1, use Activity 2 Reference: SML Instruction Set, which can be downloaded from myCourseVille or the link below: https://www.mycourseville.com/sites/all/modules/courseville/files/uploads/2016_1/2110221/materials/sml_instruction_set.333.1471674877.pdf
- In part 2 and 3, Use Brookshear Simple Machine Emulator to perform the indicated tasks https://www.mycourseville.com/sites/all/modules/courseville/files/uploads/2016_1/2110221/materials/bme.333.1471675276.htm
- Make a copy of this sheet. Answer the questions in the boxes given. After finishing, **save this file as a PDF** and **submit it to the assignment published on myCourseVille**.



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Part 1 : SML Instruction

Once you finish this part, students must inform instructors or TAs for inspection.

Program-A (3 Questions)

Suppose a CPU is started with PC=10 and the following values in cells 10-19 in memory.

Address	Content
10	22
11	36
12	25
13	0F
14	83
15	25
16	33
17	20
18	C0
19	00

Question A.1 Decode the following instructions into English.

2236	Load the register 02 with bit pattern 36
250F	Load the register 05 with bit pattern 0F
8325	And the bit pattern in register 2 and 5 and place the result in register 08
3320	Store bit pattern in register 03 to memory 20
C000	Halt

Question A.2 What does this program perform?

&& bit pattern 36 with bit pattern 0F and store in memory 20

Question A.3 What should be the content kept in the memory address 20 after the CPU finishes the execution?

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Program-B (3 Questions)

Suppose a CPU is started with PC=20 and the following values in cells 20-31 in memory.

Address	Content
20	11
21	30
22	20
23	05
24	B1
25	2A
26	22
27	00
28	B0
29	2C

Address	Content
2A	22
2B	01
2C	32
2D	31
2E	C0
2F	00
30	04
31	FF

Question B.1 Decode the following instructions into English.

1130	Load the register 01 with bit pattern in memory 30 //*30 04
2005	Load the register 00 with bit pattern 05
B12A	Continue with the normal sequence of execution
2200	Load the register 02 with bit pattern 00
B02C	*Jump to instruction locate 2C*
2201	Load the register 02 with bit pattern 01 // ไม่เกิดขึ้น
3231	Store the bit pattern found in register 02 in memory cell address 31
C000	Halt program

Question B.2 What does this program perform?

Compare value in register 00 and 01 and store it in memory address 31

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Question B.3 What should be the content kept in the memory address 31 after the CPU finishes the execution?

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— THIS IS THE END OF PART 1 —