



**School of Computing**  
**Faculty of Engineering**  
**UNIVERSITI TEKNOLOGI MALAYSIA**

**SUBJECT NAME:**            **COMPUTER ORGANIZATION AND ARCHITECTURE**

**SUBJECT CODE:**           **SCSR/SECR 2033**

**SEMESTER:**                **2019/20-2**

**LAB TITLE:**               **Programming 5: Comparison & Conditional Jumps**

**STUDENT INFO :**

<b>Name</b>	<b>Matric No.</b>
SEE WEN XIANG	A19EC0206
LOO ZHI XUEN	A19EC0078
KONG HAO YANG	A19EC0065

**SECTION:**                 **07**

**SUBMISSION DATE:**    **15/06/2020 (Mon)**

**COMMENTS:**

## 1.0 INTRODUCTION

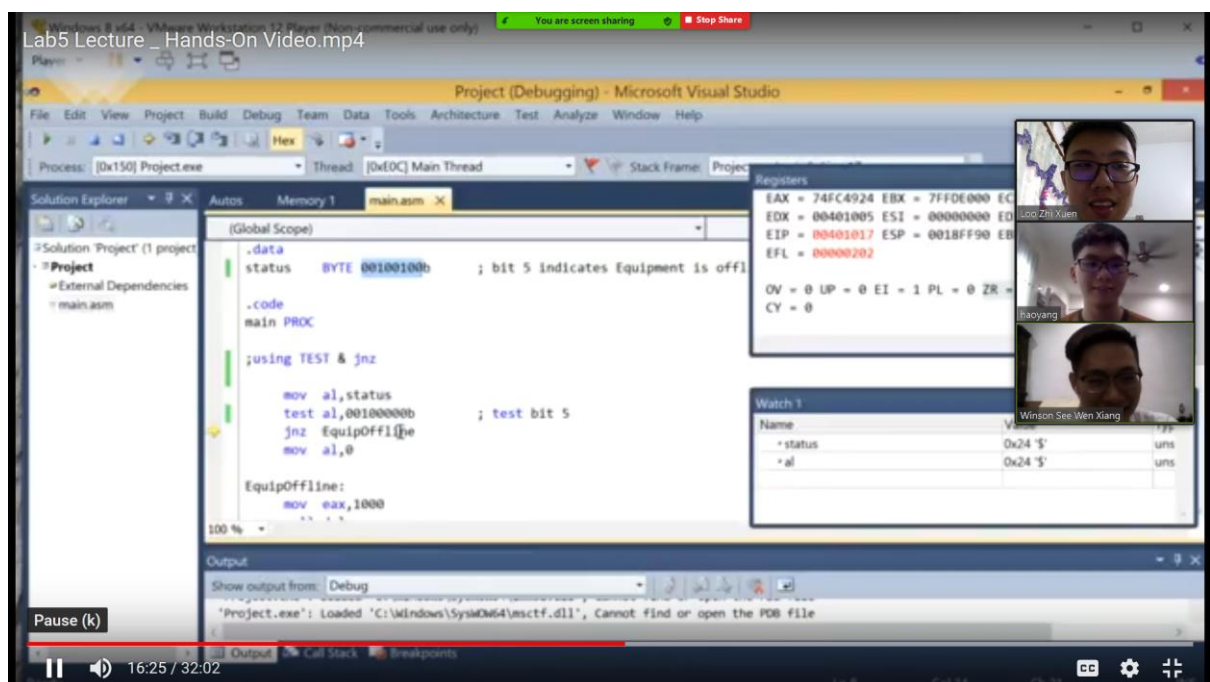
COA Lab 5 is mainly about the comparison and conditional jump which is equally same with if condition in high level language. In this lab, we would learn how to do the comparison and jump condition by using assembly language.

## 2.0 PURPOSE

The purpose of the discussion is to help others to make sure everyone to understand all the concept. At the end of the discussion, every team member should be having the knowledge regards to the comparison and jump condition and able to solve each of the question given in the lab.

## 3.0 PROCEDURE

First, our group decided to watch the video together and pause the video when one of the members is having problem during the video. Then, the other member who understand the concept will explain further to make sure everyone understands and can proceed to play the video until the end.



Next, after the video, we will open the part C to discuss together to figure out the code together. Discussion have been done to make sure the code can be executed correctly and easy to understand.

The screenshot shows a Zoom meeting window. The main window displays a presentation slide with the following content:

e. Jumps to label L4 is the expression  $(EBX - ECX)$  is greater than zero.

3. Analyse the following code segment and answer the following questions.

```

CMP EAX, 20
JG L1
JL L2
L1:
MOV EBX, 1
JMP OUTT
L2:
MOV EBX, 0
OUTT:

```

a. If  $EAX=25$ , which conditional jump is taken. Please explain your answer. What is the final value of  $EBX$ ?

b. Why is the `JMP OUTT` instruction needed for this code segment? Please elaborate your answer.

At the bottom of the slide, there are three identifiers: *HKM\_S11415*, *MMS20192020-2*, and *MMA20192020-2*.

On the right side of the Zoom window, there are three video thumbnails of participants: Loo Zhi Xuen, haoyang, and Winson See Wen Xiang.

The screenshot shows a Zoom meeting window. The main window displays a presentation slide with the following content:

<code>MOV AL, 12H</code>	
<code>AND AL, 3BH</code>	
<code>MOV AL, 00001111B</code>	
<code>OR AL, 72H</code>	
<code>MOV AL, 83H</code>	
<code>XOR AL, 26H</code>	

2. Write instructions in assembly language code that:

- Jumps to label L1 if either bit 4, 5 or 6 is set in the BL register.
- Jumps to label L1 if bits 4, 5, and 6 are all set in the BL register.
- Jumps to label L2 if AL has even parity.
- Jumps to label L3 if EAX is negative.
- Jumps to label L4 is the expression  $(EBX - ECX)$  is greater than zero.

3. Analyse the following code segment and answer the following questions.

```

CMP EAX, 20
JG L1
JL L2
L1:
MOV EBX, 1
JMP OUTT
L2:
MOV EBX, 0
OUTT:

```

On the right side of the Zoom window, there are three video thumbnails of participants: Loo Zhi Xuen, haoyang, and Winson See Wen Xiang.

Finally, we will try to do the part C independently and continue our discussion using WhatsApp if anyone facing problem to produce the code.