Lab #5 - Basic Instructions

Objectives

Let's try to understand some of the basic instructions and learn how they work.

Part #1 - Quiz Instructions

Please answer all of the given questions.

Q1) What does the instruction below do?

```
mov eax, 0x4
```

1. Move 0x4 into EAX
2. Move EAX to Address 0x4
3. Multiply EAX by 0x4
4. Do nothing, this is an illegal operation

Q2) What does the instruction below do?

```
mov eax, ebx
```

1. Copy the value in EBX into EAX
2. Copy the value in EAX into EBX

Q3) The instruction below copies the value in the address in ebx to eax.

```
mov eax, [ebx]
```

1. True
2. False

Q4) The instruction below copies the value in ebx+4 to eax.

```
mov eax, [ebx+4]
```

1. True
2. False

Q5) The instruction below copies the value at the address 0x400000 to eax.

```
mov eax, [0x400000]
```

1. True
2. False

Q6) What does the instruction below do?

```
mov eax, [ebx+ecx+4]
```

1. Copies the value of ebx+ecx+4 to eax
2. Copies the value at the address ebx+ecx+4 to eax

Q7) Match the instructions on the left with what they do on the right.

Instruction	What it means
add eax, 0x2	add 0x2 to eax
add eax, ebx	add the value 0x2 to the value in eax
add eax, [ebx]	add the value 0x40000 to eax
add [eax],0x2	add the value in ebx to eax
add eax, [0x40000]	add the value in the address at ebx to eax
sub eax, 0x2	add eax to ebx
	add the value in eax to ebx
	subtract 0x2 from the value in the address in eax
	add the value 0x2 to the value in the address at eax
	add the value in the address at 0x40000 to eax
	subtract 0x2 from the value in eax

Q8) Match the instructions on the left with what they do on the right.

Instruction	What it means
inc eax	eax = eax + 1
inc [eax]	[eax] = [eax] + 1
dec eax	eax = eax - 1
dec [address]	[address] = [address] - 1
	[address] = [address-1]
	eax = [eax+1]

Q9) Match the instructions on the left with what they do on the right.

Instruction	What it means
push eax	add the value in eax onto the top of the stack
pop ebx	call the function found at the value in the given address
call eax	call the function found at the address in eax
call address	remove the value in eax to the top of the stack
	call the function found at a given address
	remove the value at the top of the stack into ebx

Part #2 – Please reflect on what you learned from this lab