

Part1:

Positive Case:

The screenshot shows the ARMSim# interface with the following details:

- RegistersView:** Shows registers R0 through R15. R13 (sp) is 000113ec, R14 (lr) is 00001080, and R15 (pc) is 000010a8. The CPSR Register shows Negative (N) as 0, Zero (Z) as 1, Carry (C) as 0, Overflow (V) as 0, IRQ Disable as 1, FIQ Disable as 1, Thumb (T) as 0, and CPU Mode as System. The current PC value is 0x400000df.
- CodeView:** Displays assembly code for PA6-PART1.o:

```
000010A8:E4916004    ldr r6, [r1], #4
000010AC:E1560003    cmp r6, r3
000010B0:0A000002    beq INDEX_POSITION
000010B4:E2588001    subs r8, r8, #1
000010B8:CAFFFFFFFA    bgt ITERATE2
000010BC:EA000003    b ELEMENT_NOT_FOUND
```
- OutputView:** Shows the console output:

```
Size Of Array:
3
Enter Array elements:
1
2
3
Search Element:
2
Element Position:2
```

Negative Case:

The screenshot shows the ARMSim# interface with the following details:

- RegistersView:** Shows registers R0 through R15. R13 (sp) is 000113ec, R14 (lr) is 00001080, and R15 (pc) is 000010a8. The CPSR Register shows Negative (N) as 0, Zero (Z) as 1, Carry (C) as 0, Overflow (V) as 0, IRQ Disable as 1, FIQ Disable as 1, Thumb (T) as 0, and CPU Mode as System. The current PC value is 0x400000df.
- CodeView:** Displays the same assembly code as in the positive case.
- OutputView:** Shows the console output:

```
Size Of Array:
3
Enter Array elements:
1
2
3
Search Element:
4
Element Position:-1
```

Part 2:

Positive Case:

The screenshot shows the ARMSim# interface with the following components:

- RegistersView:** Displays the state of 16 registers (R0-R15) and the CPSR register. R0-R9 show hexadecimal values, while R10-R15 show their names and values. CPSR shows flags like Negative (N), Zero (Z), Carry (C), Overflow (V), and IRQ/FIQ Disable bits.
- CodeView:** Shows assembly code for PA6-PART3.o. The code includes a loop labeled 'ITERATE' that calculates Fibonacci values using 'stmfd sp!, {r1,lr}', 'mov r4, #1', and 'cmp r4, r1'.
- OutputView:** Shows the console output. It prompts 'Enter N:' and receives the input '7'. The output then displays 'Fibonnaci Value: 13'.

Negative Case:

The screenshot shows the ARMSim# interface with the following components:

- RegistersView:** Displays the state of 16 registers (R0-R15) and the CPSR register. R0-R9 show hexadecimal values, while R10-R15 show their names and values. CPSR shows flags like Negative (N), Zero (Z), Carry (C), Overflow (V), and IRQ/FIQ Disable bits.
- CodeView:** Shows assembly code for PA6-PART2.o. The code includes a comment '//BINARY SEARCH SUBROUTINE' and a call instruction 'CALL BINARY_SEARCH_SUBROUTINE:' followed by 'stmfd sp!, {r1,r2,r3,r4,lr}'.
- OutputView:** Shows the console output. It prompts 'Size Of Array:' and receives the input '5'. It then prompts 'Enter Array elements in Sorted Order:' and receives inputs '1', '4', '6', '7', '8'. Finally, it prompts 'Search Element:' and receives the input '9'. The output then displays 'Element Position(output) is: -1'.

Part 3:

[illegible]