**Homework Solutions**

5. Values of the variable value and list after each of three calls to swap

a) Pass by Value

swap(value,list[0])

a = value ---move first parameter value in

b = list[0] –move second parameter value in

temp = a

a = b

b = temp

**Output: Original values remain same**

**Value = 2**

**List = {1,3,5,7,9}**

swap(list[0],list[1])

a = list[0] ---move first parameter value in

b = list[1] –move second parameter value in

**Output: Original values remain same; No change**

**Value = 2**

**List = {1,3,5,7,9}**

swap(value,list[value])

a = value ---move first parameter value in

b = list[value] –move second parameter value in that is list[2]

**Output: Original values remain same; No change**

**Value = 2**

**List = {1,3,5,7,9}**

b. Pass by Reference

swap(value,list[0])

a = &value ---move first parameter address in

b = &list[0] –move second parameter adress in

temp = \*a

a = \*b

b = \*temp

**Output:**

**Value = 1**

**List = {2,3,5,7,9}**

swap(list[0],list[1])

a = &list[0] ---move first parameter address in

b = &list[1] –move second parameter address in

**Output:**

**Value = 2**

**List = {3,1,5,7,9}**

swap(value,list[value])

a = &value ---move first parameter address in

b = &list[value] –move second parameter address in that is list[2]

**Output:**

**Value = 5**

**List = {1,3,2,7,9}**

**c.** Pass by result-value

swap(value,list[0])

addr\_value = &value – move first parameter address in

addr\_list[0] = &list[0] --move second parameter address in

a = \*addr\_value ---move first parameter value in

b = \*add\_list[0] --move second parameter value in

temp = a

a = b

b = temp

a = b

\*addr\_value = a –move first parameter value out

\*addr\_list[0] = b – move second parameter value out

**Output:**

**Value = 1**

**List = {2,3,5,7,9}**

swap(list[0],list[1])

addr\_list[0] = &list[0] – move first parameter address in

addr\_list[1] = &list[1] --move second parameter address in

a = \*addr\_list[0] ---move first parameter value in

b = \*addr\_list[1] --move second parameter value in

temp = a

a = b

b = temp

a = b

\*addr\_list[0] = a –move first parameter value out

\*addr\_list[1] = b – move second parameter value out

**Output:**

**Value = 2**

**List = {3,1,5,7,9}**

swap(value,list[value])

addr\_value = &value – move first parameter address in

addr\_list[value] = &list[value] --move second parameter address in

a = \*addr\_value ---move first parameter value in

b = \*addr\_list[value] --move second parameter value in

temp = a

a = b

b = temp

a = b

\*addr\_value = a –move first parameter value out

\*addr\_list[value] = b – move second parameter value out

**Output:**

**Value = 5**

**List = {1,3,2,7,9}**

7. Find values of list array after execution

a) passed by value

first = list[0] – move first parameter value in

second = list[1] – move second parameter value in

**Output: no Change; changes do not get copied over**

**List = {1,3}**

b) passed by reference

first = list[0] –move first parameter address in

second = list [1] – move second parameter address in

first = +\*first

second =+\*second

**Output: list value increment by the respective elements**

**List = {2,6}**

c) passed by value-result

addr\_list[0] =list[0] – move first parameter address in

addr\_list[1] = list[1] –move second parameter address in

first = \*addr\_list[0] – move first parameter value in

second = \*addr\_list[1] – move first parameter value in

first = +first

second =+second

addr\_list[0] =first – move first parameter value out

addr\_list[1] = second –move second parameter value out

**Output: list value increment by the respective elements**

**List = {2,6}**