

	National University of Computer and Emerging Sciences (Lahore)		
	Course:	OOP	Course code: CS217
	Section:	BSCS-2B	Semester: Spring 2024
	Duration:	20 minutes	TotalMarks: 10
	Date:		ID: A
	Name:		Roll no:

Question 1: Give the output of the following code snippet. Identify syntax or logical errors, if present in the code, and suggest the required correction.

<pre> void Print(int * arr, int size) { cout<<"array is:"; for(int i = 0; i < size; i++) { cout << arr[i] << ","; } cout << endl; } int main() { int* arr = new int[6]; arr[0] = 4; arr[2] = 2; arr[1] = 8; arr[3] = 1; arr[5] = 5; arr[4] = 3; Print(arr,6); for (int i = 0; i < 3; i++) { int temp = *(arr + 2 * i); *(arr + 2 * i) = *(arr + 2 * i + 1); *(arr + 2 * i + 1) = temp; } Print(arr,6); } </pre>	<p>Output:</p> <pre> array is: 4,8,2,1,3,5, array is: 8,4,1,2,5,3, </pre>
<p>Error (if any):</p> <p>Memory is not deallocated (memory leakage).</p>	

Question 2: Write C++ functions “*initialize()*” and “*updateArray()*” . *initialize()* accepts an int pointer and size and allocates an array of size dynamically. *updateArray()* accepts three arguments; an int pointer to an array, size of array and variable k. The function should then update the given array such that all even-indexed elements (0, 2, 4, ...) are multiplied by variable k, and all odd-indexed elements (1, 3, 5, ...) are incremented by 1.

NOTE: you are not allowed to use indexing with subscript operator “[]” for *updateArray()*

```
void initialize(int *& ptr, int size)
{
    ptr = new int[size];

    // Check if memory allocation was successful
    if (arr_ptr == nullptr)
    {
        cout << "Memory allocation failed!" << endl;
        return;
    }
}

void updateArray(int arr[], int size, int value)
{
    for (int i = 0; i < size; i++)
    {
        if (i % 2 == 0)
        { // Check if even index
            *(arr + i) *= value; // Multiply even elements
        }
        else
        {
            *(arr + i) += 1; // Increment odd elements
        }
    }
}
```