Module 2 (Dynamic memory Allocation);

Module 2-0;

What will we learn in this module:

1. Learn about Dynamic and Static Memory
2. Creating Dynamic Variable
3. Creating Dynamic Array
4. Array return from function
5. Dynamic Memory deletion

2-1; Static vs Dynamic memory

Stack = Static memory

Heap = Dynamic memory

Differences:

|  |  |
| --- | --- |
| Static/ Compile Time | Dynamic/ Runtime |
| 1. Memory Limited | 1 More memory |
| 1. Memory is calculated during compile time | 2 Memory is calculated during run time |
| 1. Automatic memory clear | 3 User instructed |

2-3 Dynamic array return from a function

int \*fun(int n)

{

    int\* arr = new int[n];

    for (int i = 0; i < n; i++)

    {

        cin >> arr[i];

    }

    return arr;

}

int main()

{

    int n;

    cin >> n;

    int \*array = fun(n);

    for (int i = 0; i < n; i++)

    {

        cout << array[i] << " ";

    }

    delete[] array; // this is actually important to deallocate the memory we allocated in fun function

    return 0;

}