NUST SCHOOL OF MECHANICAL &MANUFACTURING ENGINEERING

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Course: Computer systems and programming

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SMME ♡

Q1. Take 10 integer inputs from user and store them in an array and print them on screen:

lab 7 task 1.cpp

```cpp
#include<iostream>
using namespace std;

int main()
{
    int arr[10] = { 0 };
    for (int i = 0;i<10;i++)
    {
        cout << "enter the" << i << "digit" << endl;
        cin >> arr[i];
    }
    for (int i = 0; i < 10; i++)
    {
        cout  << arr[i]<<endl;
    }
}
```

```
C:\Users\HP\Desktop\
enter the0digit
1
enter the1digit
2
enter the2digit
3
enter the3digit
4
enter the4digit
5
enter the5digit
6
enter the6digit
7
enter the7digit
8
enter the8digit
9
enter the9digit
10
1
2
3
4
5
6
7
8
9
10

--------------------------------
Process exited after 13.5 seconds with return value 0
Press any key to continue . . .
```

Q2. 2. Write a program to find the sum and product of all elements of an array with 5 integer elements.

```cpp
#include <iostream>
using namespace std;

int main()
{
    // here we declare an array of 5 elements:
    int ARR[5] = {8, 1, 5, 8, 9};
    // Initialize sum and product variables
    int sum = 0;
    int product = 1;
    // Loop through the array elements
    for (int x = 0; x < 5; x++)
    {
        sum += ARR[x];
        product *= ARR[x];
    }
    // Print the sum and product
    cout << "The sum  is " << sum << endl;
    cout << "The product is " << product << endl;
    return 0;
}
```

```
C:\Users\HP\Desktop\lab 7 ta
The sum  is 31
The product is 2880

--------------------------------
Process exited after 0.1147 seconds with return value
0
Press any key to continue . . .
```

Q3. Print diamond pattern using a single array

```
int main() {
    int n = 9;
    int half = n / 2;
    char diam[n];
    for (int i = 0; i < n; i++) {
        diam[i] = ' ';
    }
    for (int i = 0; i <= half; i++) {
        for (int j = 0; j < n; j++) {
            if (j >= half - i && j <= half + i) {
                diam[j] = '*';
            } else {
                diam[j] = ' ';
            }
            cout << diam[j];
        }
        cout << endl;
    }
//    now for printing the remaning PART OF THE DIAMOND;
    for (int i = half - 1; i >= 0; i--) {
        for (int j = 0; j < n; j++) {
            if (j >= half - i && j <= half + i) {
                diam[j] = '*';
            } else {
                diam[j] = ' ';
            }
            cout << diam[j];
        }
        cout << endl;
    }

    return 0;
`
```