**Q4. Rotate Function**

**Code:-**

#include <iostream>

#include <vector>

#include <algorithm>

using namespace std;

int maxRotateValue(vector<int>& nums) {

int n = nums.size();

if (n == 0) return 0;

vector<int> dp(n + 1);

int total\_sum = 0;

int current\_sum = 0;

for (int i = 0; i < n; ++i) {

total\_sum += nums[i];

current\_sum += i \* nums[i];

}

dp[0] = current\_sum;

for (int i = 1; i < n; ++i) {

dp[i] = dp[i - 1] + total\_sum - n \* nums[n - i];

}

int max\_val = \*max\_element(dp.begin(), dp.end());

return max\_val;

}

int main() {

int n;

cout << "Enter the number of elements: ";

cin >> n;

vector<int> nums(n);

cout << "Enter the elements: ";

for (int i = 0; i < n; ++i) {

cin >> nums[i];

}

cout << "Maximum rotate value: " << maxRotateValue(nums) << endl;

return 0;

}