

```
1  #include<iostream>
2  using namespace std;
3
4  int maxConsecutiveOnes(bool arr[], int n)
5  {
6      int res = 0;
7      for(int i=0; i<n; i++)
8      {
9          int curr = 0;
10         for(int j=i; j<n; j++)
11         {
12             if(arr[j] == 1)
13                 curr++;
14             else
15                 break;
16         }
17         res = max(res, curr);
18     }
19     return res;
20 }
21
22 int main()
23 {
24     bool arr[] = {0, 1, 1, 0, 1, 1, 1};
25     int n=7;
26     cout<<"Maximum 1's in binary Array = "<<maxConsecutiveOnes(arr, n)<<endl;
27 }
```

Maximum 1's in binary Array = 3

Process returned 0 (0x0) execution time : 0.311 s  
Press any key to continue.

```
1  #include<iostream>
2  using namespace std;
3
4  int maxConsecutiveOnes (bool arr[], int n)
5  {
6      int res = 0, curr = 0;
7      for(int i=0; i<n; i++)
8      {
9          if(arr[i] == 0)
10             curr = 0;
11         else
12         {
13             curr++;
14             res = max(res, curr);
15         }
16     }
17     return res;
18 }
19
20 int main()
21 {
22     bool arr[] = {0, 1, 1, 0, 1, 1, 1};
23     int n=7;
24     cout<<"Maximum 1's in binary Array = "<<maxConsecutiveOnes(arr, n)<<endl;
25 }
```

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Maximum 1's in binary Array = 3

Process returned 0 (0x0) execution time : 0.212 s  
Press any key to continue.

```
1  #include<iostream>
2  using namespace std;
3
4  int maxSubarraySum(int arr[], int n)
5  {
6      int res = arr[0];
7      for(int i=0; i<n; i++)
8      {
9          int curr = 0;
10         for(int j=i; j<n; j++)
11         {
12             curr += arr[j];
13             res = max(res, curr);
14         }
15     }
16     return res;
17 }
18
19 int main()
20 {
21     int arr[] = {2, 3, -8, 7, -1, 2, 3}, n=7;
22     cout<<"Maximum SubArray Sum = "<<maxSubarraySum(arr,n)<<endl;
23 }
```

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Maximum SubArray Sum = 11

Process returned 0 (0x0) execution time : 0.183 s  
Press any key to continue.

```
1  #include<iostream>
2  using namespace std;
3
4  int maxSubarraySum(int arr[], int n)
5  {
6      int res = arr[0];
7      int maxEnding = arr[0];
8      for(int i=1; i<n; i++)
9      {
10         maxEnding = max(maxEnding + arr[i], arr[i]);
11         res = max(res, maxEnding);
12     }
13     return res;
14 }
15
16 int main()
17 {
18     int arr[] = {2, 3, -8, 7, -1, 2, 3}, n=7;
19     cout<<"Maximum SubArray Sum = "<<maxSubarraySum(arr,n)<<endl;
20 }
```

Maximum SubArray Sum = 11

Process returned 0 (0x0) execution time : 0.595 s  
Press any key to continue.



```
1  #include<iostream>
2  using namespace std;
3
4  int maxCircularSubarraySum(int arr[], int n)
5  {
6      int res = arr[0];
7      for(int i=0; i<n; i++)
8      {
9          int curr_max = arr[i];
10         int curr_sum = arr[i];
11         for(int j=1; j<n; j++)
12         {
13             int index = (i+j)%n;
14             curr_sum += arr[index];
15             curr_max = max(curr_max, curr_sum);
16         }
17         res = max(res, curr_max);
18     }
19     return res;
20 }
21
22 int main()
23 {
24     int arr[] = {5, -2, 3, 4}, n=4;
25     cout<<"Maximum Circular SubArray Sum = "<<maxCircularSubarraySum(arr,n)<<endl;
26 }
```

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Maximum Circular SubArray Sum = 12

Process returned 0 (0x0) execution time : 0.231 s  
Press any key to continue.

```
1  #include<iostream>
2  using namespace std;
3
4  int normalMaxSum(int arr[], int n)
5  {
6      int res = arr[0];
7      int maxEnding = arr[0];
8      for(int i=1; i<n; i++)
9      {
10         maxEnding = max(maxEnding + arr[i], arr[i]);
11         res = max(res, maxEnding);
12     }
13     return res;
14 }
15
16 int maxCircularSubarraySum(int arr[], int n)
17 {
18     int max_normal = normalMaxSum(arr,n);
19     if(max_normal < 0)
20         return 0;
21
22     int arr_sum = 0;
23     for(int i=0; i<n; i++)
24     {
25         arr_sum += arr[i];
26         arr[i] = -arr[i];
27     }
28     int max_circular = arr_sum + normalMaxSum(arr, n);
29     return max(max_normal, max_circular);
30 }
31
32 int main()
33 {
34     int arr[] = {5, -2, 3, 4}, n=4;
35     cout<<"Maximum Circular SubArray Sum = "<<maxCircularSubarraySum(arr,n)<<endl;
36 }
```

Maximum Circular SubArray Sum = 12

Process returned 0 (0x0) execution time : 0.113 s  
Press any key to continue.

```
1  #include<iostream>
2  using namespace std;
3
4  int maxEvenOdd(int arr[], int n)
5  {
6      int res = 1;
7      for(int i=0; i<n; i++)
8      {
9          int curr = 1;
10         for(int j=i+1; j<n; j++)
11         {
12             if((arr[j]%2 == 0 && arr[j-1]%2 != 0) ||
13                (arr[j]%2 != 0 && arr[j-1]%2 == 0))
14                 curr++;
15             else
16                 break;
17         }
18         res = max(res, curr);
19     }
20     return res;
21 }
22
23 int main()
24 {
25     int arr[] = {10, 12, 14, 7, 8}, n=5;
26     cout<<"Maximum Length of Even-Odd = "<<maxEvenOdd(arr, n)<<endl;
27 }
```

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Maximum Length of Even-Odd = 3

Process returned 0 (0x0) execution time : 0.179 s  
Press any key to continue.



```
1  #include<iostream>
2  using namespace std;
3
4  int maxEvenOdd(int arr[], int n)
5  {
6      int res = 1, curr = 1;
7      for(int i=1; i<n; i++)
8      {
9          if((arr[i]%2 == 0 && arr[i-1]%2 != 0) ||
10             (arr[i]%2 != 0 && arr[i-1]%2 == 0))
11          {
12              curr++;
13              res = max(res, curr);
14          }
15          else
16              curr = 1;
17      }
18      return res;
19  }
20
21  int main()
22  {
23      int arr[] = {10, 12, 14, 7, 8}, n=5;
24      cout<<"Maximum Length of Even-Odd = "<<maxEvenOdd(arr, n)<<endl;
25  }
```

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Maximum Length of Even-Odd = 3

Process returned 0 (0x0) execution time : 0.431 s  
Press any key to continue.



```
1  #include<iostream>
2  using namespace std;
3
4  int findMajority(int arr[], int n)
5  {
6      for(int i=0; i<n; i++)
7      {
8          int count = 1;
9          for(int j=i+1; j<n; j++)
10             if(arr[i] == arr[j])
11                 count++;
12             if(count > n/2)
13                 return i;
14         }
15     return -1;
16 }
17
18 int main()
19 {
20     int arr[] = {2, 3, 4, 5, 5, 5, 5}, n=7;
21     cout<<"Majority Element Index = "<<findMajority(arr, n)<<endl;
22 }
```

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Majority Element Index = 3

Process returned 0 (0x0) execution time : 0.268 s

Press any key to continue.

```
1  #include<iostream>
2  using namespace std;
3
4  int findMajority(int arr[], int n)
5  {
6      int res = 0, count = 1;
7      for(int i=1; i<n; i++)
8      {
9          if(arr[res] == arr[i])
10             count++;
11         else
12             count--;
13         if(count == 0)
14         {
15             res=i;
16             count = 1;
17         }
18     }
19
20     count = 0;
21     for(int i=0; i<n; i++)
22         if(arr[res] == arr[i])
23             count++;
24     if(count <= n/2)
25         res = -1;
26
27     return res;
28 }
29
30 int main()
31 {
32     int arr[] = {2, 3, 4, 5, 5, 5, 5}, n=7;
33     cout<<"Majority Element Index = "<<findMajority(arr, n)<<endl;
34 }
```

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Majority Element Index = 3

Process returned 0 (0x0) execution time : 0.262 s  
Press any key to continue.

```
1  #include<iostream>
2  using namespace std;
3
4  int minGroupFlipSame(int arr[], int n)
5  {
6      for(int i=1; i<n; i++)
7      {
8          if(arr[i] != arr[i-1])
9          {
10             if(arr[i] != arr[0])
11                 cout<<"From "<<i<<" to ";
12             else
13                 cout<<i-1<<endl;
14         }
15     }
16     if(arr[n-1] != arr[0])
17         cout<<n-1<<endl;
18 }
19
20 int main()
21 {
22     int arr[] = {1, 1, 0, 0, 0, 1}, n=6;
23     minGroupFlipSame(arr, n);
24 }
```

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From 2 to 4

Process returned 0 (0x0) execution time : 0.285 s  
Press any key to continue.