

ADVANCED CODING-II

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VU21CSEN0300277 CSE-AIML

1. Check If a String Contains All Binary Codes of Size K

```
class Solution {  
    public boolean hasAllCodes(String s, int k) {  
        Set<String> codes = new HashSet<>();  
        int total = 1 << k;  
  
        for (int i=0; i+k<=s.length(); i++) {  
            codes.add(s.substring(i, i+k));  
            if (codes.size() == total) return true;  
        }  
  
        return false;  
    }  
}
```

Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

s =
"00110110"

k =
2

Output

true

Expected

true

Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

s =
"0110"

k =
1

Output

true

Expected

true

Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

s =
"0110"

k =
2

Output

false

Expected

false

2.Longest Chunked Palindrome Decomposition

```
class Solution {
    public int longestDecomposition(String text) {
        int n = text.length();
        int k = 0, totalLength = 0;
        int str1Start = 0, str1End = 0;
        int str2Start = n-1, str2End = n;
        while (str1End < str2Start) {
            if (text.substring(str1Start, str1End +
1).equals(text.substring(str2Start, str2End))) {
                totalLength += (str2End - str2Start) * 2;
                k++;
                str1Start = str1End + 1;
                str2End = str2Start;
            }
            str1End++;
            str2Start--;
        }
        if (totalLength < n) return (k * 2) + 1;
        return k * 2;
    }
}
```

Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

text =
"ghiabcdefhellodamhelloabcdefghi"

Output

7

Expected

7

Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

text =
"merchant"

Output

1

Expected

1

Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

text =
"antaprezatezapreanta"

Output

11

Expected

11

3. Constrained Subsequence Sum

```
class Solution {
    public int constrainedSubsetSum(int[] nums, int k) {
        int res = Integer.MIN_VALUE;
        Queue<int[]> maxHeap = new PriorityQueue<>((a,b) -> Integer.compare(b[1],
a[1]));
```

```

        for (int i = 0; i < nums.length; i++) {
            while (!maxHeap.isEmpty() && (i - maxHeap.peek()[0] > k)) {
                maxHeap.poll();
            }
            int temp = -10001;
            if (!maxHeap.isEmpty()) temp = maxHeap.peek()[1];
            temp += nums[i];
            temp = Math.max(temp, nums[i]);
            res = Math.max(res, temp);
            maxHeap.add(new int[]{i, temp});
        }
        return res;
    }
}

```

Testcase | **Test Result**

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

nums =
[10,2,-10,5,20]

k =
2

Output

37

Expected

37

Testcase | **Test Result**

Accepted Runtime: 0 ms

• Case 1 • **Case 2** • Case 3

Input

nums =
[-1,-2,-3]

k =
1

Output

-1

Expected

-1

Testcase | Test Result

Accepted Runtime: 0 ms

• Case 1 • Case 2 • Case 3

Input

nums =
[10,-2,-10,-5,20]

k =
2

Output

23

Expected

23

4.Max Value of Equation

```
class Solution {
    public int findMaxValueOfEquation(int[][] points, int k) {
        int ans=Integer.MIN_VALUE;
        int i=0;
        int f=1;
        while(i < points.length) {
            if(f<i+1)
                f=i+1;
            for (int j = f; j <= points.length-1; j++) {
                if(points[j][0]>(points[i][0]+k))
                    break;
                if((points[i][1]+points[j][1]+points[j][0]-points[i][0])>ans){
                    ans=points[i][1]+points[j][1]+points[j][0]-points[i][0];
                    f=j-1;
                }
            }
            i++;
        }
        return ans;
    }
}
```

Testcase | Test Result

Accepted Runtime: 0 ms

Case 1 Case 2

Input

points =
[[1,3],[2,0],[5,10],[6,-10]]

k =
1

Output

4

Expected

4

Testcase | Test Result

Accepted Runtime: 0 ms

Case 1 Case 2

Input

points =
[[0,0],[3,0],[9,2]]

k =
3

Output

3

Expected

3