Laboratory work # 1

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Problem # 1296

Screenshot from Timus:

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Explanation of algorithm:

1. Separate the algorithms into several method;
2. Use the Array to store the data;
3. Use the Algorithm which I use several for-loop to go through all the possibilities, and use the ternary expression to judge the max;
4. Print the result.

Computational complexity of algorithm:

$$O(n^2)$$

Source code:

```java
import java.util.*;
import java.io.*;

public class HyperJump {
    public static void main(String[] args) throws IOException {
        Scanner in = new Scanner(System.in);
        PrintWriter out = new PrintWriter(System.out);

        // The first line of the input contains an integer N being the
        // number of elements in the intensity values sequence (0 ≤ N ≤
60000).
        int[] jump_array = new int[new Scanner(System.in).nextInt()];

        // Next N lines specify sequence elements, each line containing a
        // single integer p_i (-30000 ≤ p_i ≤ 30000).
        for (int i = 0; i < jump_array.length; i++) {
            jump_array[i] = new Scanner(System.in).nextInt();
        }
        in.close();

        // Print out the final answer.
```

```
        out.println(jump_max(jump_array));
        out.flush();
    }

    /**
     * The main method of the Hyper Jump Question.
     * @param array : The input array.
     * @return int: the max of alpha-phase.
     */
    static int jump_max(int[] array) {
        int max = 0;
        for (int i = 0; i < array.length; i++) {
            int[] sub_array = Arrays.copyOfRange(array, i, array.length);
            for (int j = 0; j < sub_array.length; j++) {
                int total = sum(Arrays.copyOfRange(sub_array, 0, j));
                if (total > max) { max = total; }
            }
        }
        return (max >= 0 ? max : 0);
    }

    /**
     * Write the method to sum up the array.
     * @param array : The input array.
     * @return int : The sum of the array.
     */
    static int sum(int[] array) {
        int sum = 0;
        for (int i = 0; i < array.length; i++) {
            sum += array[i];
        }
        return sum;
    }
}
```