

```

1 package com.example.mndlab1;
2
3 import ...
4
11
12 public class MainActivity extends AppCompatActivity {
13
14     @Override
15     protected void onCreate(Bundle savedInstanceState) {
16         super.onCreate(savedInstanceState);
17         setContentView(R.layout.activity_main);
18     }
19
20     public void ferma(View view) {
21
22         EditText edNumber = findViewById(R.id.editTextNumber);
23         TextView tw = findViewById(R.id.textView2);
24         int number = Integer.parseInt(edNumber.getText().toString());
25         String ans = "";
26         long timeStart=System.nanoTime();
27
28         while (number % 2 == 0) {
29             ans += 2 + " ";
30             number /= 2;
31         }
32         if (isSimple(number)) {
33             ans += number;
34         } else ans += factorize(number);
35         if ((System.nanoTime()-timeStart)>(Math.pow(10,9))){
36             Snackbar.make(view, text: "Час виконання програми"+(System.nanoTime()-timeStart),Snackbar.LENGTH_LONG).show();
37         }
38         else tw.setText(ans);
39     }
40
41     public static boolean perfectSquare(int x) {
42         return Math.pow((int) Math.sqrt(x), 2) == x;
43     }
44
45     @
46     public static String factorize(int number) {
47
48         int x = (int) Math.ceil(Math.sqrt(number));
49         String ans = "";
50         while (!perfectSquare(x * x - number)) {
51             x += 1;
52         }
53         int y = (int) Math.sqrt(x * x - number);
54
55         int[] s = {x - y, x + y};
56         if (isSimple(s[0])) {
57             ans += s[0] + " ";
58         } else ans += factorize(s[0]);
59
60         if (isSimple(s[1])) {
61             ans += s[1] + " ";
62         } else ans += factorize(s[1]);
63         return ans;
64     }
65
66     public static boolean isSimple(int num) {
67         for (int i = 2; i < num; i++) {
68             if (num % i == 0) return false;
69         }
70         return true;
71     }

```