

```
1 import javax.swing.JOptionPane
2
3 fun railFenceEncrypt(text: String, rails: Int):
  String {
4     if (rails <= 1) return text
5
6     val fence = Array(rails) { StringBuilder() }
7     var rail = 0
8     var direction = 1
9
10    for (char in text) {
11        fence[rail].append(char)
12        rail += direction
13        if (rail == 0 || rail == rails - 1) direction
        *= -1
14    }
15
16    return fence.joinToString("")
17 }
18
19 fun railFenceDecrypt(cipherText: String, rails: Int
  ): String {
20     if (rails <= 1) return cipherText
21
22     val pattern = mutableListof<Int>()
23     var rail = 0
24     var direction = 1
25
26     for (i in cipherText.indices) {
27         pattern.add(rail)
28         rail += direction
29         if (rail == 0 || rail == rails - 1) direction
        *= -1
30     }
31
32     val fence = Array(rails) { StringBuilder() }
33     val indices = pattern.sorted().withIndex()
34     var index = 0
35
36     for ((i, railIndex) in indices) {
37         fence[railIndex].append(cipherText[i])
```

```

38     }
39
40     val decryptedText = StringBuilder()
41     for (i in pattern.indices) {
42         decryptedText.append(fence[pattern[i]].first
43         ())
44         fence[pattern[i]].deleteCharAt(0)
45     }
46     return decryptedText.toString()
47 }
48
49 fun main() {
50     val options = arrayOf("Cifrar", "Descifrar", "
51     Salir")
52     while (true) {
53         val choice = JOptionPane.showOptionDialog(
54         null, "Seleccione una opción:", "Cifrado
55         Rail Fence",
56         JOptionPane.DEFAULT_OPTION, JOptionPane.
57         INFORMATION_MESSAGE,
58         null, options, options[0]
59         )
60
61         if (choice == 2 || choice == JOptionPane.
62         CLOSED_OPTION) break
63
64         val text = JOptionPane.showInputDialog("
65         Ingrese el texto:")
66         if (text.isNullOrEmpty()) continue
67
68         val railsInput = JOptionPane.showInputDialog(
69         "Ingrese el número de rieles:")
70         val rails = railsInput?.toIntOrNull() ?:
71         continue
72
73         val result = if (choice == 0)
74         railFenceEncrypt(text, rails)
75         else railFenceDecrypt(text, rails)
76     }

```

```
70         JOptionPane.showMessageDialog(null, "  
    Resultado: $result")  
71     }  
72 }  
73
```