

Лабораторная работа №1

Шифры простой замены: шифр Цезаря, шифр Атбаш

Выполнила:

Манаева Варвара Евгеньевна, НФИмд-01-24, 1132249514

1. Реализовать шифр Цезаря с произвольным ключом k

```
In [58]: function shifrCezarya(k::Integer, text::AbstractString)::AbstractString
        k = mod(k, 128)
        println("Text sent to be encoded:\n", text)
        t = filter(isascii, text)
        println("Text to be encoded:\n", t)
        temp = only.(split(t, ""))
        for i in 1:length(temp)
            temp[i] = Char(mod(k+Int(temp[i]), 128))
        end
        t = ""
        for i in 1:length(temp)
            t *= string(temp[i])
        end
        return t
    end
```

Out[58]: shifrCezarya (generic function with 1 method)

```
In [59]: coded_text = shifrCezarya(3, "TEXT to be coded!!!! αβγ and some innocent letters")
        println("The result of encoding:\n", coded_text, "\n\n")
        decoded_text = shifrCezarya(-131, coded_text)
        println("The result of decoding:\n", decoded_text)
```

```
Text sent to be encoded:
TEXT to be coded!!!! αβγ and some innocent letters
Text to be encoded:
TEXT to be coded!!!!  and some innocent letters
The result of encoding:
WH[W#wr#eh#frghg$$$$##dqg#vrph#lqqrfhqw#ohwwhuv
```

```
Text sent to be encoded:
WH[W#wr#eh#frghg$$$$##dqg#vrph#lqqrfhqw#ohwwhuv
Text to be encoded:
WH[W#wr#eh#frghg$$$$##dqg#vrph#lqqrfhqw#ohwwhuv
The result of decoding:
TEXT to be coded!!!!  and some innocent letters
```

2. Реализовать шифр Атбаш

```
In [60]: function shifrAtbash(text::AbstractString)::AbstractString
println("Text sent to be encoded:\n", text)
t = filter(isascii,text)
println("Text to be encoded:\n", t)
temp = only.(split(t,""))
for i in 1:length(temp)
    temp[i] = Char(127-Int(temp[i]))
end
t = ""
for i in 1:length(temp)
    t *= string(temp[i])
end
return t
end
```

Out[60]: shifrAtbash (generic function with 1 method)

```
In [61]: coded_text = shifrAtbash("TEXT to be coded!!!! αβγ and some innocent letters")
println("The result of encoding:\n", coded_text, "\n\n")
decoded_text = shifrAtbash(coded_text)
println("The result of decoding:\n", decoded_text)
```

Text sent to be encoded:
TEXT to be coded!!!! αβγ and some innocent letters
Text to be encoded:
TEXT to be coded!!!! and some innocent letters
The result of encoding:
: '+_σ†_↔_⊥†↔↔↔↔^__▲◀_+↑→_T◀◀†L→◀σ_!!→σσ→

Text sent to be encoded:
: '+_σ†_↔_⊥†↔↔↔↔^__▲◀_+↑→_T◀◀†L→◀σ_!!→σσ→
Text to be encoded:
: '+_σ†_↔_⊥†↔↔↔↔^__▲◀_+↑→_T◀◀†L→◀σ_!!→σσ→
The result of decoding:
TEXT to be coded!!!! and some innocent letters