Rosalind

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Contents

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Overview

This document contains the code and solutions to the coding problem sets from the Rosalind database at
http://rosalind.info/problems/list-view/

Install packages and set working dir

```
# install pcks
packages <- c("stringr","stringi","gsubfn")
if (require(packages)) {
  install.packages(packages,dependencies = T)
  require(packages)
}
lapply(packages,library,character.only=T)
```

Problems

DNA Counting DNA Nucleotides

```
s <- read.csv("rosalind_dna.txt",header=F,sep=",",stringsAsFactors = F);s
```

```
## # A tibble: 1 x 1
##   V1
##   <chr>
## 1 AAGTGCTAGATCTGCGGGCCAACTCTCTATGACCCGAGACAGCCGCGGCTCTCTTACACCGTAGGCATGAT~
```

```
str_count(s,c("A","C","G","T"))
```

```
## [1] 199 224 210 205
```

RNA Transcribing DNA into RNA

```
t <- read.csv("rosalind_rna.txt",header=F,sep=",",stringsAsFactors = F);t
```

```
## # A tibble: 1 x 1
##   V1
##   <chr>
## 1 GAACGAGGAACGTCTTGCCACCATCCGATCTGAAACGGCAGGTACGTTTACAAAGTTCTCCAGTGTAAAAC~
```

```
gsub("T","U",t)
```

```
## [1] "GAACGAGGAACGUCUUGCCACCAUCCGAUCUGAAACGGCAGGUACGUUUACAAAGUUCUCCAGUGUAAAACACGGUGCGGUGAAGAGUUCCCAAU(
```

Complementing a Strand of DNA

```
require(stringi)
require(gsubfn)
```

```r
# s <- read.csv(".txt",header=F,sep=",",stringsAsFactors = F);s

s <- "AAAACCCGGT"
sc <- c("A","T","C","G") # target units
sc2r <- c("T","A","G","C") # units to be replaced
s <- stringi::stri_reverse(s);s # reverse string
```

```
## [1] "TGGCCCAAAA"
```

```r
s <- replace(s,sc,sc2r);s # replace
```

```
##                     A            T            C            G
## "TGGCCCAAAA"       "T"          "A"          "G"          "C"
# desired result: ACCGGGTTTT
```