## Life on Mars

## Operations

Operation 1.
Load a DNA
sequence from a
file

Operation 3.
Generate random
DNA sequence of a
BLOB

Operation 5. Check DNA of BLOB organism

Operation 7.
Determine amino acids

Operation 9.
Insert codons (insert a codon sequence, starting from mth codon)

Operation 11.
Reverse codons (reverse n codons, starting from mth codon)

Operation 13.
Find the shortest
gene in a DNA
strand

Operation 15.
Find the most repeated n-nucleotide sequence in a DNA strand (STR - Short Tandem Repeat)

Operation 17.
Simulate BLOB generations using DNA strand 1 and 2 (DNA strand 3 is for the newborn)

Operation 2.
Load a DNA
sequence from a
string

Operation 4. Check DNA gene structure

Operation 6.
Produce
complement of a
DNA sequence

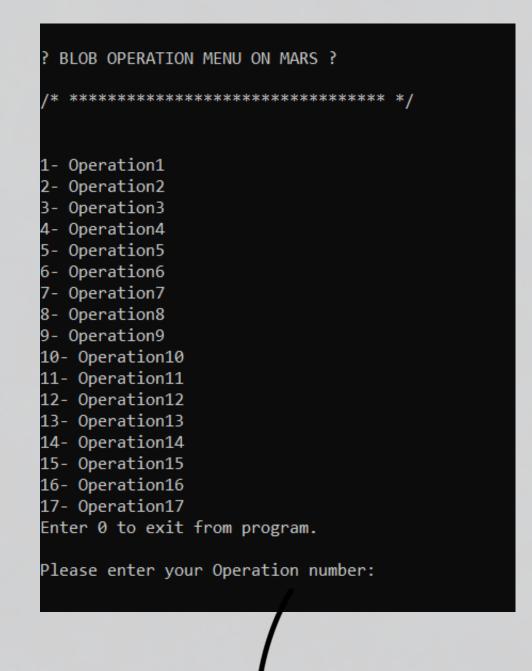
Operation 8.
Delete codons (delete n
codons, starting from
mth codon)

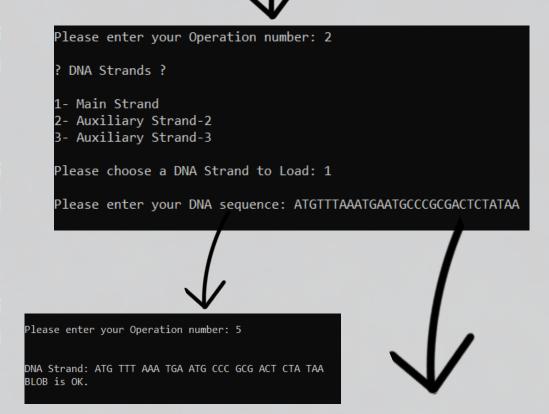
Operation 10.
Find codons (find a codon sequence, starting from mth codon)

Operation 12.
Find the number of genes
in a DNA strand (BLOB or
not)

Operation 14.
Find the longest
gene in a DNA
strand

Operation 16.
Hydrogen bond
statistics for a DNA
strand





Please enter your Operation number: 8

DNA Strand (Stage 1): ATG TTT AAA TGA ATG CCC GCG ACT CTA TAA Number of the codons to delete: 3
Starting from: 6
Delete 3 codons, starting from 6
Dna strand (stage 2): ATG TTT AAA TGA ATG CTA TAA Your Codon sequence has been deleted successfully!

## HOW IT WORKS?

Firstly, user must enter a DNA sequence for main strand or auxiliary strands. After that, user can manipulate or control the DNA sequence according to operations. Additionally user can produce generations based on some conditions.

Yasemin Valishariatpanahi Merih Hatay Alperen Dönmez Jabbar Jabbarlı







