TOBB ETU BIL 141
Bilgisayar Programlamaya Giriş I LAB7

Soru1

Statement

Implement the first step of the DNA replication for the given sequences.

T-->A

A-->T

C-->G

G-->C

Test cases

Input

ATTTACGT

Output

TAAATGCA

Solution

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <stdbool.h>

int main() {
    // DNA sequence to be replicated from
    char dna1[20];
    // DNA sequence to be replicated to
    char dna2[20];

    scanf("%s",dna1);
    // Copy DNA1 to DNA2 for replication
    strcpy(dna2, dna1);
    // Replicate DNA2 with proper nucleotides
    for(int i = 0; i < strlen(dna1); i++) {
        if(dna1[i] == 'A')
            dna2[i] = 'T';
        else if(dna1[i] == 'T')
            dna2[i] = 'A';
        else if (dna1[i] == 'G')
            dna2[i] = 'C';
        else
            dna2[i] = 'G';
    }
    // Print replicated one
    printf("%s", dna2);

    return 0;
}
```

Soru2

Statement

Clip last 3 nucleotids from the first DNA sequence and append that part at the end of the second one. Both DNA sequence length is 5 by default. Print second DNA sequence after append operation. Test with only first 4 test and validation cases. Ignore remaining.

Test cases

Input

AAAGG

AGCTA

Output

AGCTAAGG

Solution

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <stdbool.h>

int main() {
    // DNA sequence to be clipped the tail part from
    char dna1[20];
    // DNA sequence to be append the clipped tail part of other
    // sequence to
    char dna2[20];

    scanf("%s",dna1);
    scanf("%s",dna2);
    // concatenate and print
    printf("%s", strncat(dna2, dna1 + 2, 3));

    return 0;
}
```

Soru3

Statement

Swap last 3 nucleotids between 2 DNA sequences. Both DNA sequence length is 5 by default. Print second DNA sequence after append operation. Test with only first 4 test and validation cases. Ignore remaining.

Test cases

Input

AAAGG

AGCTA

Output

AACTA

AGAGG

Solution

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <stdbool.h>

int main() {
    // two DNA sequences to be swapped the tail parts between each
    // other
    char dna1[20];
    char dna2[20];

    scanf("%s",dna1);
    scanf("%s",dna2);

    char tail1[10];
    char tail2[10];
    // Clip the tails
    strncpy(tail1, dna1 + 2, 4);
    strncpy(tail2, dna2 + 2, 4);
    // Stick tails transversely
    strncpy(dna1 + 2, tail2, 4);
    strncpy(dna2 + 2, tail1, 4);

    printf("%s\n", dna1);
    printf("%s", dna2);

    return 0;
}
```