
Discussion

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[Coding Challenge] Complementary DNA

Hello community,

Yesterday was celebrated the "World Medical Ethics Day" <https://www.ama.com.au/media/wma-medical-ethics-day>

We could celebrate it with a programming quiz or challenge:

DESCRIPTION:

Deoxyribonucleic acid (DNA) is a chemical found in the nucleus of cells and carries the "instructions" for the development and functioning of living organisms.

If you want to know more: <http://en.wikipedia.org/wiki/DNA>

In DNA strings, symbols "A" and "T" are complements of each other, as "C" and "G". Your function receives one side of the DNA (string, except for Haskell); you need to return the other complementary side. DNA strand is never empty or there is no DNA at all (again, except for Haskell).

More similar exercise are found here: <http://rosalind.info/problems/list-view/> (source)

Example: (input --> output)

```
"ATTGC" --> "TAACG"  
"GTAT" --> "CATA"
```

Satement extracted from: <https://www.codewars.com/kata/554e4a2f232cdd87d9000038/java>

Test cases:

```
import org.junit.Test;  
import static org.junit.Assert.assertEquals;  
import org.junit.runners.JUnit4;  
  
public class DnaStrandTest {  
    @Test  
    public void test01() {  
        assertEquals("TTTT", DnaStrand.makeComplement("AAAA"));  
    }  
}
```

```
}
@Test
public void test02() {
    assertEquals("TAACG", DnaStrand.makeComplement("ATTGC"));
}
@Test
public void test03() {
    assertEquals("CATA", DnaStrand.makeComplement("GTAT"));
}
@Test
public void test04() {
    assertEquals("TTCC", DnaStrand.makeComplement("AAGG"));
}
@Test
public void test05() {
    assertEquals("GCGC", DnaStrand.makeComplement("CGCG"));
}
@Test
public void test06() {
    assertEquals("TAACG", DnaStrand.makeComplement("ATTGC"));
}
@Test
public void test07() {
    assertEquals("CATAGCTAGCTAGCTAGCTAATATAAAAAGCTGCTCTAAATTTATATATATATATGCTCTCTTAT
GTCTATCTGTCTAAT", DnaStrand.makeComplement("GTATCGATCGATCGATCGATTATATTTTCGACGAGATTAA
ATATATATATATACGAGAGAATACAGATAGACAGATTA"));
}
}
```

Would you be able to code a solution for this?

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Source URL: <https://community.intersystems.com/post/coding-challenge-complementary-dna>