Part 1
Consider the regular expression \(((C|D|M|N|P|T)A)\)*


- Name two countries that are matched by this RE.

Part 2 — RELay Race
Write regular expressions for the following languages:

1. all binary strings

2. all non-empty binary strings

3. all binary strings beginning and ending with 1

4. all binary strings ending with 00 (divisible by 4)

5. all binary strings with at least three 1s

Part 3
Given an English-language description of the language defined by the RE \((0*10*10*)*\)?

Bonus
Hard bonus: is it possible to define a RE for all binary integers divisible by 3?
Part 4

- Is 01101 accepted by this DFA? Is 11?

- Given an English-language description of the language that this DFA recognizes.

- (Optional) Give a regular expression that defines the same language.

Part 5

Draw DFAs that recognize each of these languages from Part 2:

1. all binary strings

2. all non-empty binary strings

3. all binary strings beginning and ending with 1

4. all binary strings ending with 00 (divisible by 4)

5. all binary strings with at least three 1s