

Week 2

← Week 2

String final quiz result is Wrong

Baharul Alam · Week 2 · 3 months ago

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```
1 public int findStopCodon (String dna, int startIndex, String
2 stopCodon) {
3     int stopIndex = dna.indexOf(stopCodon, startIndex+1);
4     while( stopIndex != -1 ) {
5         if(dna.charAt(stopIndex - stopIndex)
6             != 'A' || dna.charAt(stopIndex - stopIndex)
7             != 'T' || dna.charAt(stopIndex - stopIndex)
8             != 'G' || dna.charAt(stopIndex - stopIndex)
9             != 'C') {
10         }
11     }
12     return -1;
13 }
14
15 public String findGene (String dna, int where) {
16     int startIndex = dna.indexOf("ATG", where);
17     if(startIndex == -1) {
18         return "";
19     }
20     int tooIndex = findStopCodon(dna, startIndex, "TAA" );
21     int tagIndex = findStopCodon(dna, startIndex, "TAG" );
22     int tgaIndex = findStopCodon(dna, startIndex, "TGA" );
23     int temp = Math.min(tagIndex, tgaIndex);
24     int minIndex = Math.min(temp, tooIndex);
25     if(minIndex == -1) {
26         return "";
27     }
28     return dna.substring(startIndex, minIndex+3) ;
29 }
30
31 public StorageResource getAllGenes(String dna){
32     //dna = dna.toUpperCase();
33     StorageResource geneList = new StorageResource();
34     int startIndex = 0;
35     while(true) {
36         String currentGene = findGene(dna, startIndex);
37         //System.out.println("currentGene "+ currentGene);
38         if(currentGene.isEmpty()) { }
39         break;
40     }
41     geneList.add(currentGene);
42     startIndex = dna.indexOf(currentGene, startIndex)+
43         currentGene.length();
44     }
45     return geneList;
46 }
47
48 public void testGetAllGenes(){
49     FileResource fr = new FileResource("Grch38dnpart.fa");
50     String dna = fr.asString();
51     dna = dna.toUpperCase();
52     System.out.println(dna);
53     StorageResource genes = getAllGenes(dna);
54     int c = 0;
55     for(String s : genes.data()){
56         System.out.println(s);
57         c++;
58     }
59 }
```

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Saumya Tiwari · 2 months ago

To anyone who is still stuck: getting one long gene is correct. However, I put in the answers in practice quiz and it doesn't grade correctly. You will still be able to solve the graded quiz with this solution. There must be some glitch in the practice quiz with brca1line.fa

1 Upvote

Reply

Baharul Alam · 3 months ago

Finally Its solved ... everything was fine except one line thanks .. Completed this course

0 Upvotes

Hide 6 Replies

MM

Malar Muthu · 2 months ago

Hi Baharul, can you please tell me which line caused the issue. I am still stuck with this.

0 Upvotes

MM

Malar Muthu · 2 months ago

No worries, I solved it.

0 Upvotes

A

Ahmed · 2 months ago

Malar or baharul .. where is the fault please any help

0 Upvotes

MM

Malar Muthu · 2 months ago

Hi Ahmed, I used my own logic. In FindGene method instead f returning the gene, I returned the lowest index. And in the main program I used the stop index and got the gene there only. That is what helped me. 69 is the right answer.

0 Upvotes

Davidie Nastri · 2 months ago

I am not sure I get this...

The code is 100% identical to the course one but it is broken, right?

0 Upvotes

MM

Malar Muthu · 2 months ago

Use the seven step approach that will help you to develop the right algorithm.

0 Upvotes

6

Reply

Reply

Baharul Alam · 3 months ago

GCGGTACACTGCTCAAAATCTCTGGTACAGGAACAAGCTTCTGATGCTCTCTCTAA TTGTGAGATATATTATCAAAGTCTTTATCACTTTGTATGGCCAAAAGGAAGCTGTCTCC ACACCTGTCTCAGCCAGATGACTTCAAAGTCTTGTAAAGGGGAGAAAGAGATTGATGA CCAAAAGAAGCTGCAAAAAGAGAGAGCTTGGATTTCTTGAGTAGACTGCTTTACCTC CACTCTTACTGCTCAATTTTGATCTTTGCTTCAGCTTCAGAGAGAGGCTTTTCAGCAC CAGAGAGCTTGGCCAAATACGAAACCCATAAAGCAAAAGAAAGAACTGAATCTTCTC CAGATGACTCAATTTAAAAATTTCAATGAATTTCTCTTTGGAAAGTAATTCATAGCTG ACGAAGAACTTGATTTGATTAATACCCAGAGCTTCTCCACAGTTCAGAGATTATCTCA GACTGAAACGAGCTGTACTACATCTGTATCAAGAACAGAGAGTTCCAGGCCAGT ACGGAAGATGTGAGAAAATAAAGCAGGACCAATTAACAATCAAAAAATATATCTAG

my one and only gene from barca1line.fa . but when i checked for Grch38dnpart.fa result is not working!!!! add two comment together then u get the one . I sliced bec comment box allowed only 1000 character

0 Upvotes

Hide 4 Replies

JL

Jason Laks · 3 months ago

Hi Baharul-

Thanks for posting your gene. My code now finds the same result. Originally my logic only checked the 1st occurrence of each stop codon and if none had distance of multiple of 3, then looked for the next start codon. I changed it to find every occurrence of each stop codon checking each for distance of a multiple of 3. It now finds your gene at dna.substring(42,10299).

1 Upvote

JL

Jason Laks · 3 months ago

Hi Baharul-

Are you still having problems w/ GrCh38dnpart.fa? My code does not get the correct answers for that file either. It sees 66 genes total. How many do you get? Also, is there anyone who can let us know if 66 is too high or too low?

Thanks,

1 Upvotes

Baharul Alam · 3 months ago

Hi J,

course is done for me :) 66 is low its 69 . check ur if else condition . if u need any help show me ur code . Thanks

0 Upvotes

A

Ahmed · 2 months ago

baharul hello ,

i finished all the other three weeks but i am still in the same problem

please tell me where is the fault in your code it is very similar to my one .. i am struck for about 2 weeks !.. any help

0 Upvotes

6

Reply

Reply

Baharul Alam · 3 months ago

When I am calling testGetAllGenes() its showing I have 65 genes . But its wrong ans (I am struck here for long time..

Please Need some help or clue will be highly appreciated..

Thanks in advance ..

0 Upvotes

Hide 9 Replies

JL

Jason Laks · 3 months ago

Hi Baharul, I wonder if you and I are having a similar problem. Can you please let me know if you find

ATGTTCCCAATAGTAGACATAAAAGTCTTCGCACAGTGA

at indexes 364 to 403 (13 codons, start/stop included)?

Thanks

1 Upvotes

Baharul Alam · 3 months ago

No I am not getting this one

0 Upvotes

JL

Jason Laks · 3 months ago

That is the 1st gene my code finds. Could you please let me know the 1st gene your code finds?

0 Upvotes

JL

Jason Laks · 3 months ago

By the way, I get the result above when processing:

brca1line.fa

0 Upvotes

Baharul Alam · 3 months ago

Nobody is here for any clue !!! :(

0 Upvotes

JL

Jason Laks · 3 months ago

Hi Baharul, if we work on this together, maybe we can figure out the issue. However, I need to know if our code behaves similarly. Can you please let me know the 1st gene that your code finds?

Thanks,

1 Upvotes

Baharul Alam · 3 months ago

Hi Jason right now I am in Munich . Hope I will back in tomorrow . So we can discuss on it day after tomorrow... if u want u can move on next week. Its better for you

Thanks in advance

0 Upvotes

JL

Jason Laks · 3 months ago

I am not having any response from others, so whenever you are able, it will be a big help.

1 Upvotes

Baharul Alam · 3 months ago

ATGCCTATTGGGATCCAAAGGAGGGCCAACTTTTGTGAATTTTAAAGCACGCG TGCAACCAAGCAGAGATTAGGACCAATAAGTCTTAATGGTTTGAAGAACTTCT TCAGAAAGCTCCACCTCTATATTTCTCGAAGCTTCAGAGAGAGATCTGAACATTA AAAAGATTACGACCAACCACTATTTAAGCACTCCACAAAGCAAGCACTTATTAAG AGCTGGCTTCCAATCCAATTAATTCAAAGCAAGAGGCTGACTCGCCGCTG TACCCATCTCCTGTAAAGAAATAGATAAATCAAGTATGAAGAACTAGGAAGATG GTTCCCAATAGTAGACATAAAAGTCTTCGCAAGTGAACCAATGAAGATGATCAA GCAGATGATGTCTTCTGCTCACTTCAAAATCTTGCTTAGTGAAGATCTGTGG GTTCTACAATGTACACATGTAAACCCACCAAGAGAGATAGCTCAGTGGATGTGGG AGTTTGTTTCTACACCAAGAGTTGTGAAGAGGCTGTCAGACCACAAAATATT TCTGAAAGTCTAGGAGCTGAGGTGGATCTGATATGTTGGTCAAGATCTTTTA GCTACACACCCACCTTGAATTTCTACTGTGCTCATAGTCAGAAATGAAGAGCA TCTGAAGACTGTATTTCCTCATGATACTACTGCTAAATGTGAAGAACTGATTTCCA CTATGATGAAGAGTCTGCAAGAGATGATGATTTAGCTGCTGAAGCAGATGACT GTGAACAACAACTCAAGAGAGAGCTGCAAGTCTAGGATTTGGAANAACATCA GGGAAATCAATTAAGAAATAGCTGCAAGAACCCATGAAGTGAAGTGAAGTATGCC CAATGCTCTAGAGAGATGAGATATATAAGAGAACTGTAGATACCTCTGAAGAAG ATAGTTTTTTCATTATTTTTCTAAATGTAGAAACAAAATCTCAACAAAGTAAG AACTGCAAGACTAGGAAAAAAATTTCCATGAAGCAAGCTGATGAATGTG CCAATGATACATGCTCATTAGATTTCAAGTGAAGTGAAGTGAAGTGAAGTGAAG GTGGAAGTGACAAATCTCAAGGAAGTTGTACCGTCTTGGCTGTGAATGG ATCCACAGAAAGTCTTCAGCTTAAATGGAGGCCAGATGAGGAHAATCTTATTAAG TTGATATTTCTCCTGAGCAAAATATTCAAGCAAGTATGAGAAAGCACTATTAGACA AGACAACAAATGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TCTAGCTTCAACAAATCAGAGAGGCAATTAATAGAGAAACAGTGTGAATGAAG AGAGATGAAGAGCAGCATCTTGAATCTCATACAGACTGCAATTTGCAGATGAA GCAGGCAATATCTGGAACTTCCAGTGGGCTTCTCATTTACGGGTATCAAAA GTCTATATCAGATAAGAGATCACTTAAGAGAGACTTCAATGCAAGTATTTT AGGTGAATGACTGATCCAACTTAAAAAGAACTGAAGCTGCAAGTCTGAAAGTG GACTGGAATAATACATAGTTTGTCTCAGAGAGAGGACTCCTTATGTCCAAATG TAAGTATGATAGGAGTGGCCAGCCACCCACCAACAGAAATCTGTAGTGTG TGAATTCGAGGTATTATATCCACTTGAAGAAAGAAAGAAATAGTATTATTA CTATATCATGATGAAGATCTTTATAAGGAAGAAATATACGAAAGCAAGAA TCAAGACTAATTAAGTCTGAGGAGCTTTGAAGCAAGTCTTTGAAGCAACCA CTTCACATTTGCAAGTCTGATTCAAGTCTTTTGACTTCTTGTAAGGAAGAGCT GTTCACAGAAATGATTCTGAAGAACCACTTTGTCTCTTACTAGTCTTTTGGGA CAATCTGAGGAAATGTCTGAGAAATGAACACTTGTATAAGGAAGAACTACAGTTAT CTACAGATCTTGATTATAAGAGCAAAATGTGAATGAAGAAACACTACAGTTT TTTGATCCCAAGAGTGTATCTGTCTCAACCTAGTACTGATTTGAGAGAGCAAC TATAGACAGA TCATAAAGATGTGACAGACCTCAAGATGTGAGAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTTCAAGAACTTACCATGGTTTATATGAGAGACAGGT GATAAAACAGAGACCCAGCTGTCAATTTAAAAAGATTTGGTTTATGTTCTTGCA GAGAGAAAGATTTGCTGAGAGAGTCAATTTGAAGTCTTCAAGAGAGAGCTAG TTTCTGATATTTCTGAGCAAAATATTCAAGAAAGTCAAGTCTCAGAGAGAGC TCTATAAAGACTGTGACAGACCTCAAGATGTGAAGTGAAGTGAAGTGAAGTGAAG TTAACCAAAATTTGCCATGTGAAGCAAGTCAAGATGTATGTCTTTAAATGAA AATTATAAAAGCTTGGCAGTGTGTGCCACTTGAAGAAATCATGAGATGATGATCA CTTCAAGAAAGGTACAATTCACCAACAAACCAAACTGAAGAGTCTCAAAA AATCAAGAGAAACTACTTCAATTTCAAAATGACTCAATCGACAGACTTGA AAGCTTTCTCAGCAATAGAGATAATTTGTCTTCAAGATGATCAATGAAGG AATAAATCTTGCTTGAAGAAATAGAGGAATTTGTCTTCAAGATGACTGAAGTGT GTAACGAACCTTTT