public class FindAllGenes {

public String findGene(String dna, int Start) {

int startIndex = dna.indexOf("ATG");

int currIndex = dna.indexOf("TAA", startIndex +3);

while (currIndex != -1) {

if ((currIndex - startIndex) % 3 == 0) {

return dna.substring(startIndex, currIndex + 3);

}

else {

currIndex = dna.indexOf("TAA", currIndex + 1);

}

}

return "";

}

public void printAllGenes(String dna) {

//set startIndex to 0

int startIndex = 0;

//Repeat the following steps

while( true ){

//Find the next gene after startIndex

String currentGene = findGene(dna, startIndex);

//If no gene was found, leave this loop

if (currentGene.isEmpty()) {

break;

}

//Print that gene out

System.out.println(currentGene);

//Set startIndex to just past the end of the gene

startIndex = dna.indexOf(currentGene, startIndex) + currentGene.length();

}

return;

}

public void testOn(String dna) {

System.out.println("Testing printAllGenes on " + dna);

printAllGenes(dna);

}

public void test(){

testOn("ATGATCTAATTTATGCTGCAACGGTGAAGA");

testOn("");

testOn("ATGATCATAAGAAGATAATAGAGGGCCATGTAA");

}

}