

#### Question 4:

class Find Genome

```
public static void main(String args[]) {  
    Scanner keyboard = new Scanner(System.in);  
    System.out.println("Please Enter the Genome");  
    String genome = keyboard.nextline( );  
    String start = "ATG";  
    String end1 = "TAG";  
    String end2 = "TAA";  
    String end3 = "TGA";  
    int flag = 0;  
    char[] valid = genome.toCharArray();  
    for (int i = 0; i < valid.length; i++) {  
        switch (valid[i]) {  
            case 'A':  
            case 'C':  
            case 'G':  
            case 'T':  
                break;  
            default:  
                flag = 1;  
                break;  
        }  
    }  
    if (flag == 1) {  
        System.out.println("Invalid Input");  
        break;  
    }  
}
```

~~int i=0;~~

```
System.out.println("Genes:");  
int a, b, c, d;  
for (int i=0; i < genome.length; i++) {  
    int a = genome.indexOf(start, i);  
    if (a == -1)  
        break;  
    int b = genome.indexOf(end1, a+3);  
    int c = genome.indexOf(end2, a+3);  
    int d = genome.indexOf(end3, a+3);
```

```
    if (a == -1)  
        break;
```

```
    int b = genome.indexOf(end1, a+3);  
    int c = genome.indexOf(end2, a+3);  
    d = genome.indexOf(end3, a+3);
```

```
    if (b == -1)  
        b = genome.length() - 30;
```

```
    if (c == -1)  
        c = genome.length() - 30;
```

```
    if (d == -1)  
        d = genome.length() - 30;
```

```
    if (a < b && a < c && a < d)  
        j = a;
```

```
    else if (a < b && a < c)  
        j = a;
```

```
    else j = d;
```

```
    if (b > genome.length() && d > genome.length() &&  
        c > genome.length())  
        break;
```

```

String gene = gene.substring(1, 3, j);
if (gene.length() % 3 == 0) {
    if (!gene.equals("start"))
        System.out.println(gene);
}
i = i + 1;

```

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