< insert ACGT >

print

expected output:
ACGT
< insert AAAA >

print
expected output:
I
I
AAAA
ACGT
E
$E$
$E$
$E$
insert AA

print
expected output:
I
I
IAAAA
E
E
$E$
AA
ACGT
E
E
E
E
E
E
E

print
expected output:
I
I
I I

AAAA
AAACCCCGGTGAAAACGTA
E
E
E
E
E
AA
ACGT
E
E
E
$E$
$E$
$E$
insert ACTGGGAA


```
print
expected output:
|
    |
    |
        AAAA
            AAACCCCGGTGAAAACGTA
            E
            E
            E
        E
        E
        AA
    |
        E
        ACGT
        ACTGGGAA
        E
        E
        E
E
E
E
```

remove ACGT


```
print
expected output:
|
    |
    |
        AAAA
            AAACCCCGGTGAAAACGTA
            E
            E
                E
            E
            E
            AA
            ACTGGGAA
            E
            E
E
E
```



```
print
expected output:
|
    |
    |
        AAAA
            AAACCCCGGTGAAAACGTA
            E
            E
            E
        E
        E
        AA
    |
        E
        ACCTT
        E
        ACTGGGAA
        E
        E
        E
    E
E
E
E
```



```
print
expected output:
|
    |
    |
        AAAA
            AAACCCCGGTGAAAACGTA
            E
            E
            E
        E
        E
        AA
    |
        E
        ACCTT
        E
        |
            E
            ACTGGGAA
            ACTTA
            E
        E
        E
        E
        E
E
E
E
```



```
print
expected output:
|
    |
    I
        I
            AAAA
            AAACCCCGGTGAAAACGTA
            E
            E
            E
            E
            AA
    |
            E
        ACCTT
        E
        |
            E
            ACTGGGAA
            ACTTA
            E
        E
        E
        E
        E
    E
    E
TATA
E
```



```
print
expected output:
|
    |
    |
        I
            AAAA
            AAACCCCGGTGAAAACGTA
            E
            E
            E
            E
            AA
    |
            E
        ACCTT
        E
        |
            E
            ACTGGGAA
            ACTTA
            E
        E
        E
        E
        E
E
E
I
    TATA
    TCG
    E
    E
    E
E
```

print lengths
expected output:
I
I
I
I

AAAA: length 4
AAACCCCGGTGAAAACGTA: length 19
E
E
E
E
E
AA: length 2
I
E
ACCTT: length 5
E
I
E
ACTGGGAA: length 8
ACTTA: length 5
E E
E
E
E
E
E
I
TATA: length: 4
TCG: length 3
E
E
E
E

## print stats

expected output:

```
|
    |
    |
        I
            AAAA: A(100.00), C(0.00), G(0.00), T(0.00)
            AAACCCCGGTGAAAACGTA: A(42.11), C(26.32), G(21.05), T(10.53)
            E
            E
            E
            E
            E
        AA: A(100.00), C(0.00), G(0.00), T(0.00)
    |
        E
        ACCTT: A(20.00), C(40.00), G(0.00), T(40.00)
        E
        |
            E
            ACTGGGAA: A(37.50), C(12.50), G(37.50), T(12.50)
            ACTTA: A(40.00), C(20.00), G(0.00), T(40.00)
            E
        E
        E
        E
        E
    E
    E
I
    TATA: A(50.00), C(0.00), G(0.00), T(50.00)
    TCG: A(0.00), C(33.33), G(33.33), T(33.33)
    E
    E
    E
E
```


## search AAAA\$

expected output:

## \# of nodes visited: 5

sequence: AAAA

## search AA

expected output:
\# of nodes visited: 13
sequence: AAAA
sequence: AAACCCCGGTGAAAACGTA
sequence: AA
search ACGT\$
expected output:
\# of nodes visited: 4
no sequence found

