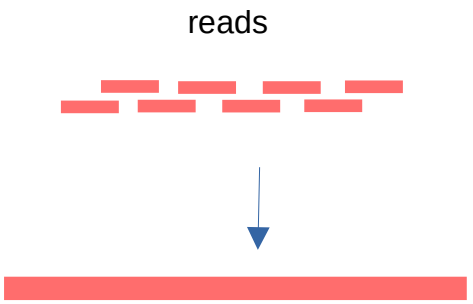
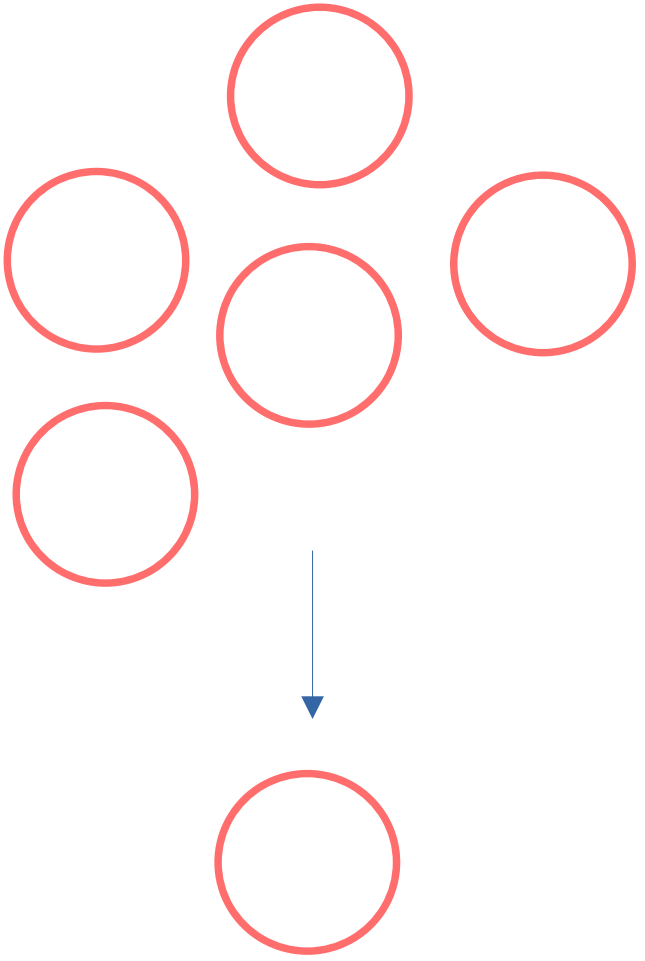
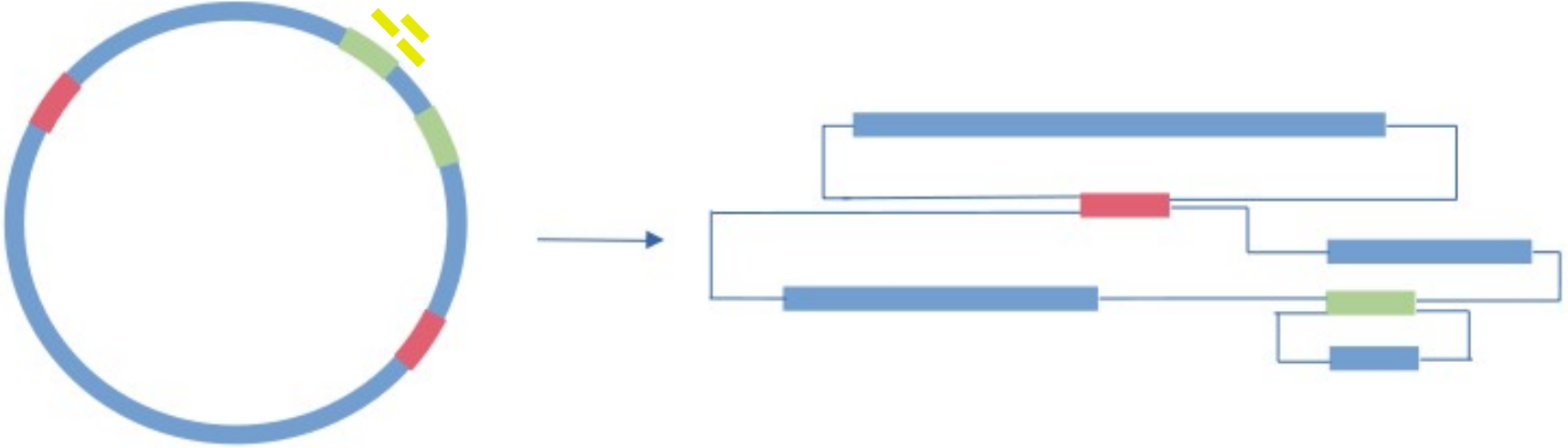
Limitations of De Bruijn Graph assemblers

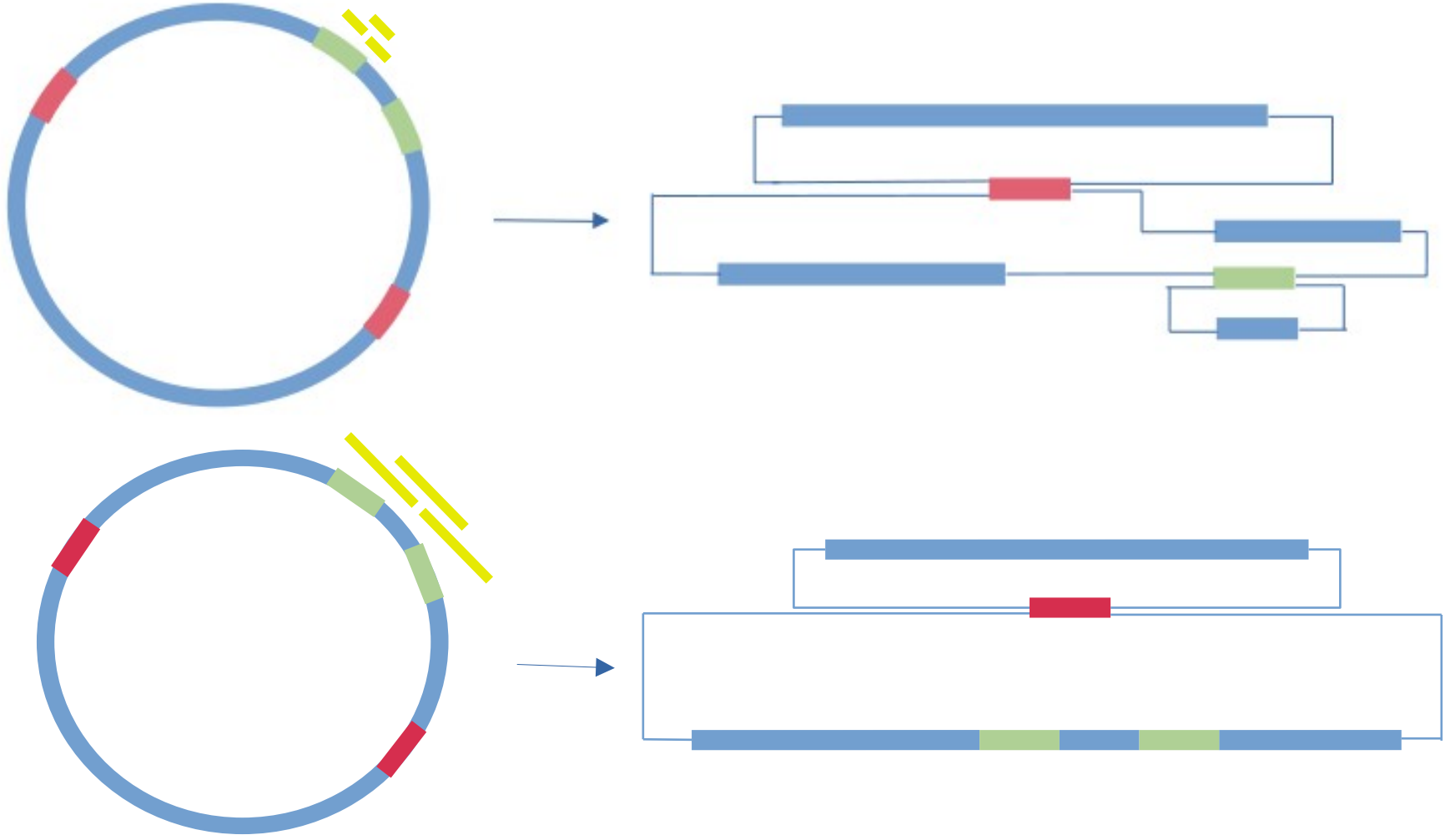




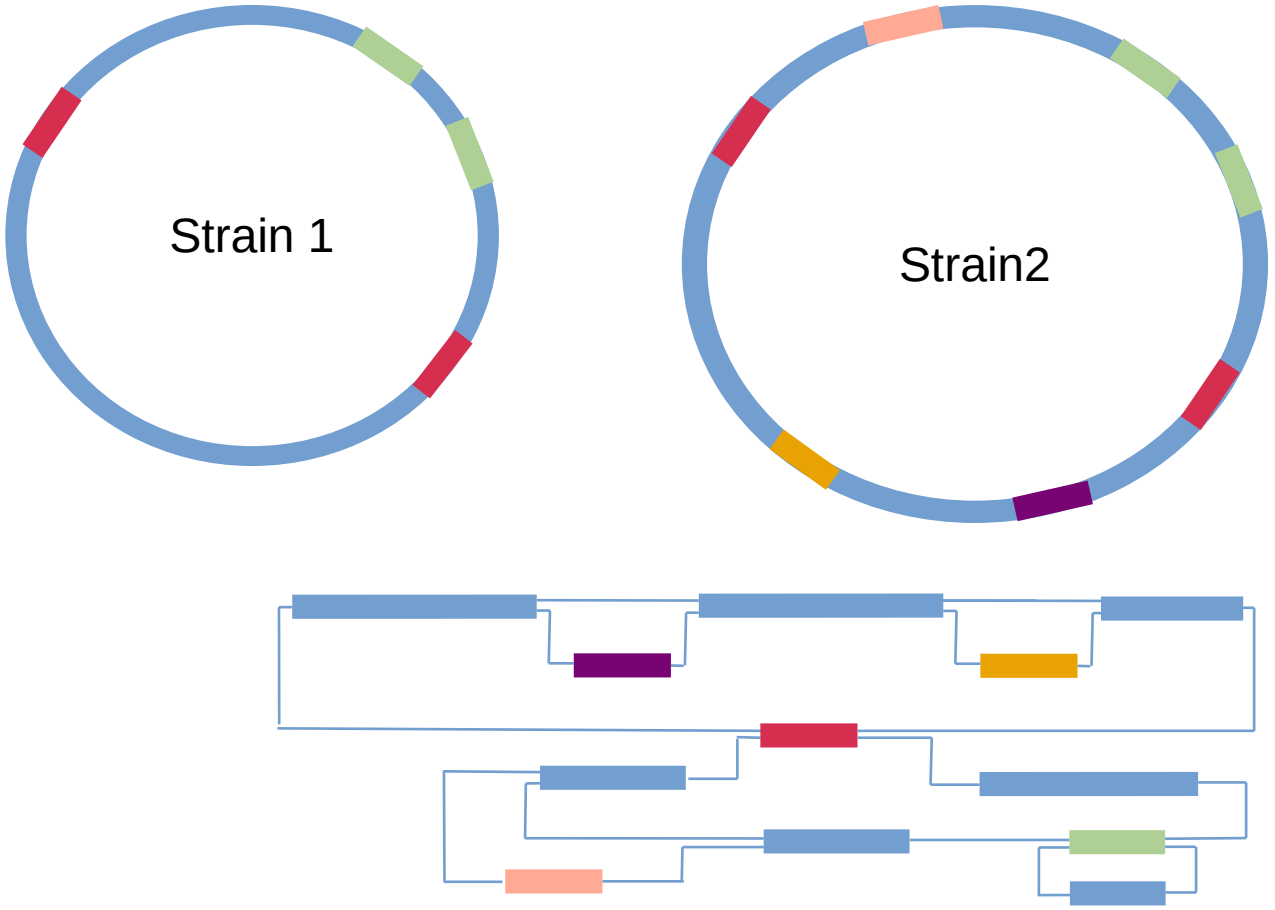
Limitations of De Bruijn Graph assemblers



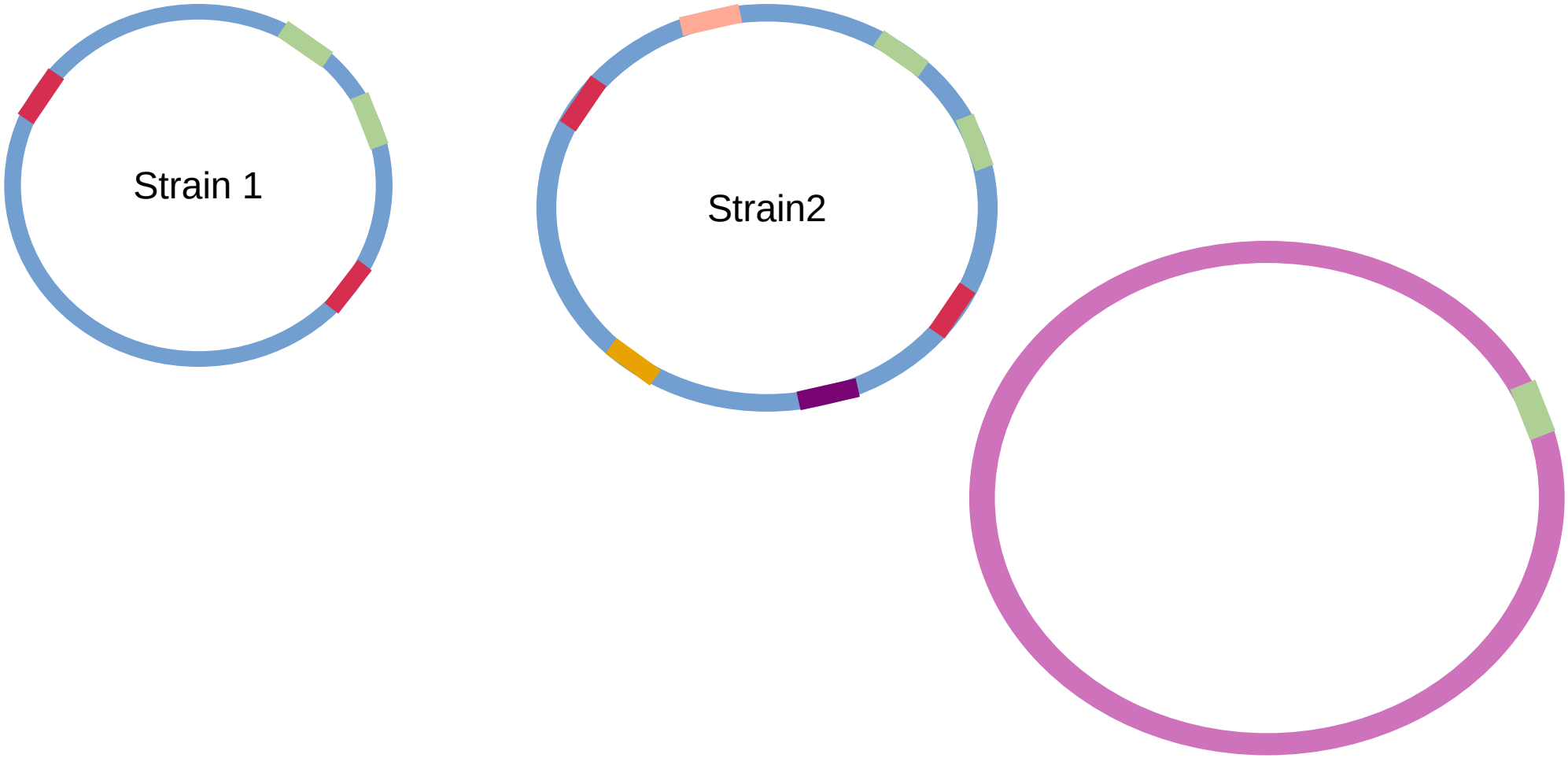
Limitations of De Bruijn Graph assemblers



Limitations of De Bruijn Graph assemblers

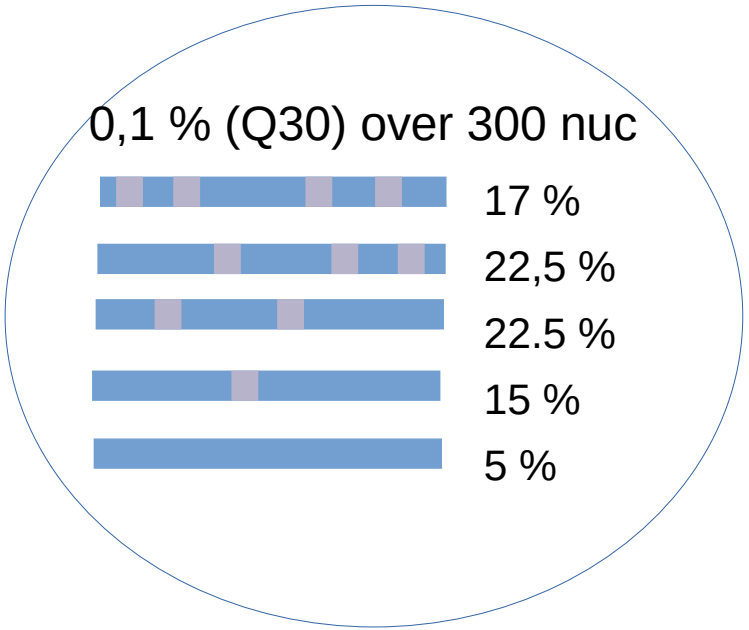


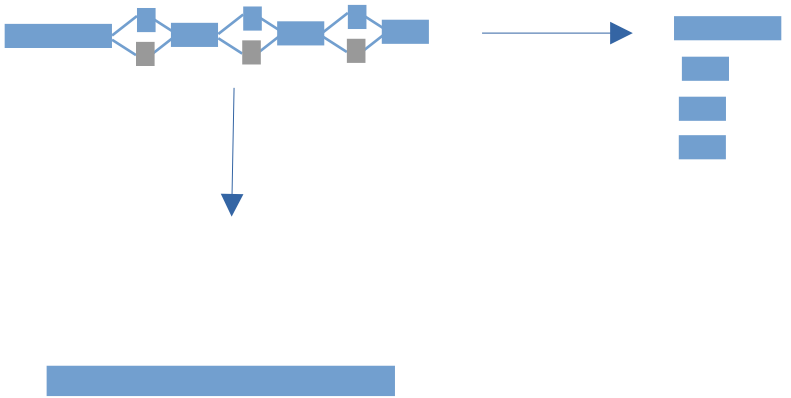
Limitations of De Bruijn Graph assemblers



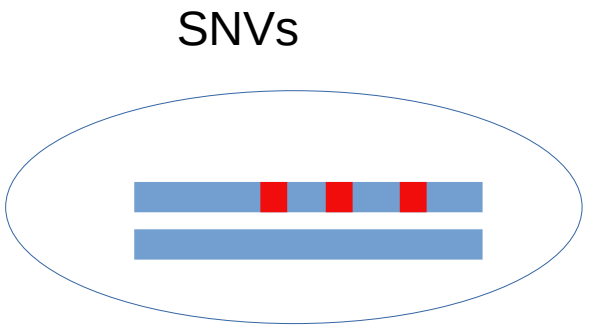
Limitations of De Bruijn Graph assemblers

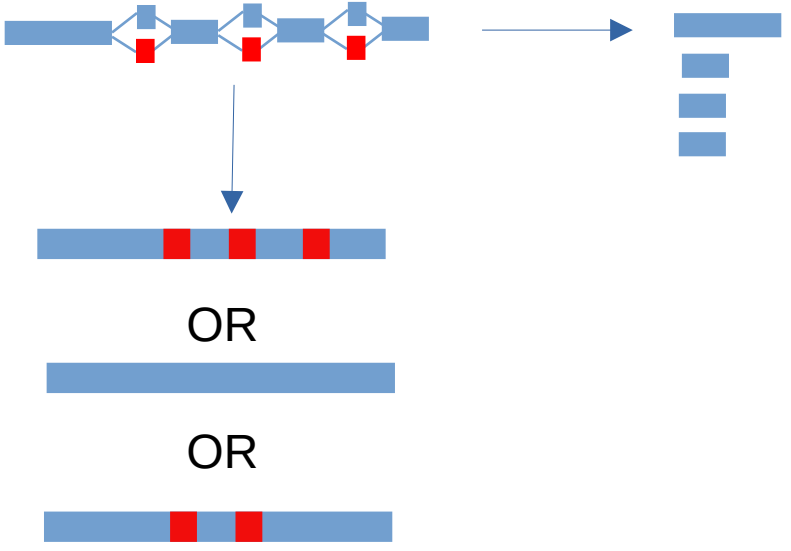
Sequencing errors



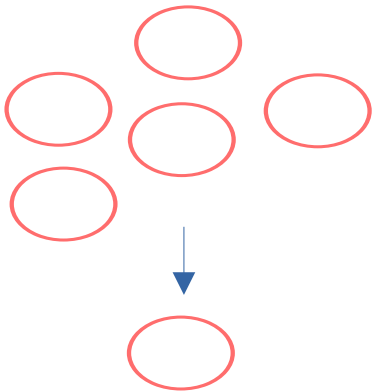


Limitations of De Bruijn Graph assemblers

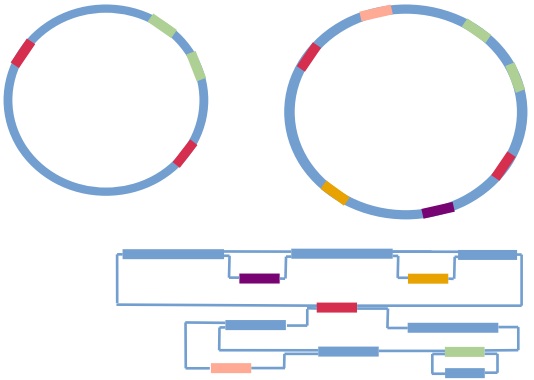




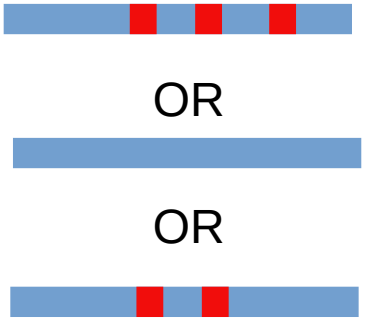
Summary



Dereplication of sequence at the scale of the read length

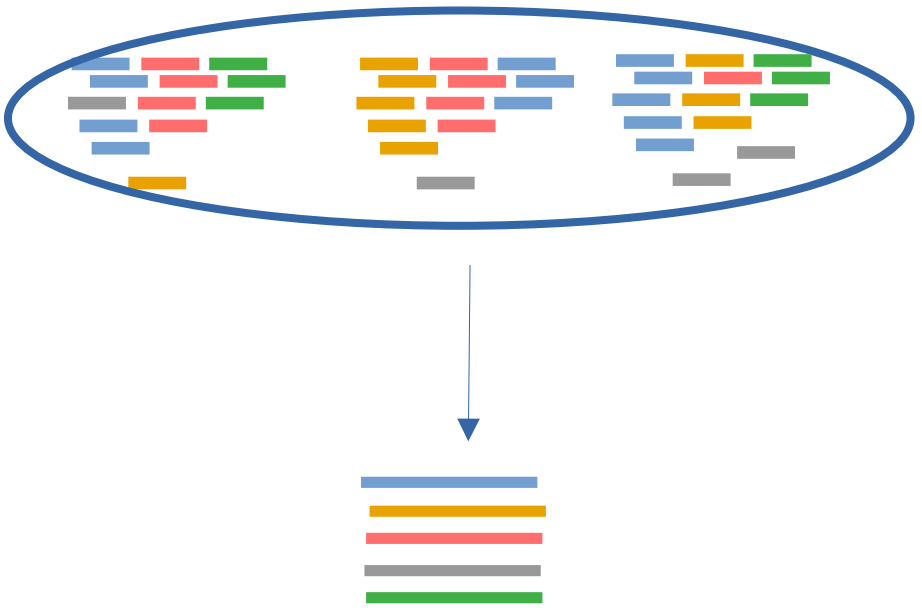


Strain diversity increase complexity → smaller contigs

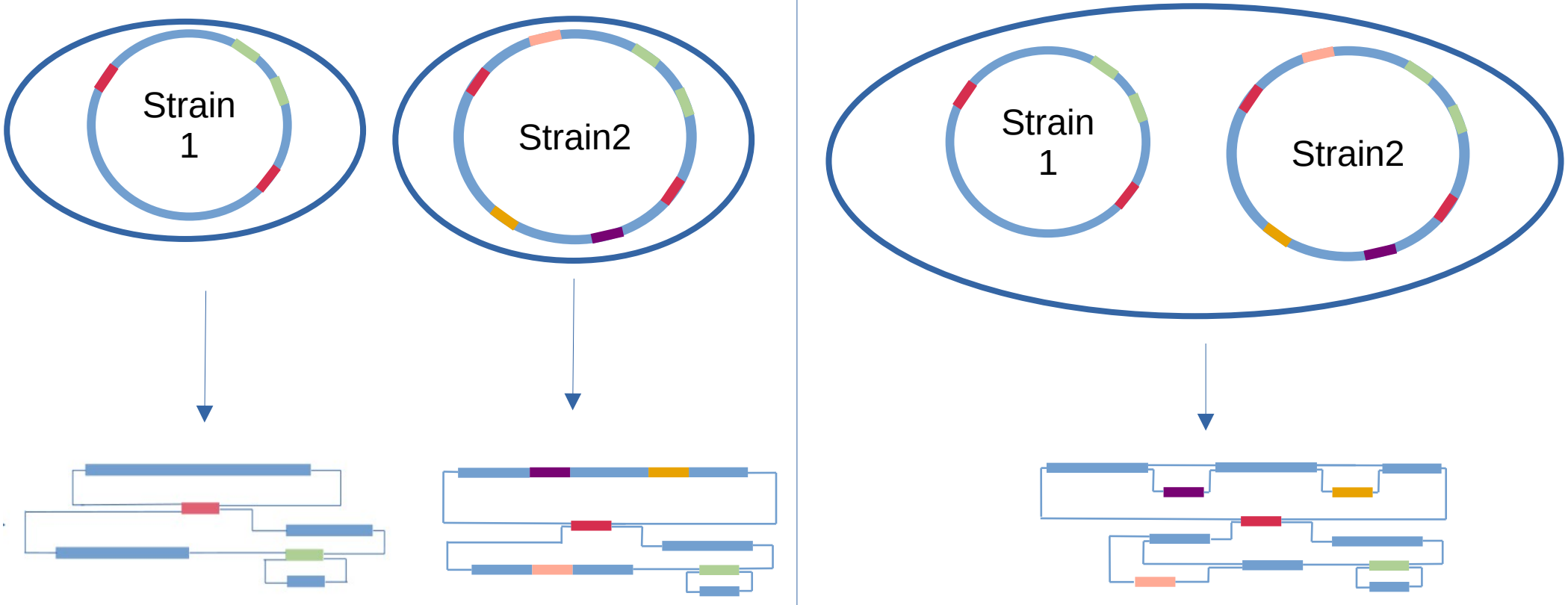


Assembly does not conserve strain level informations

Single Sample Assembly VS Assembly



Single Sample Assembly VS Assembly

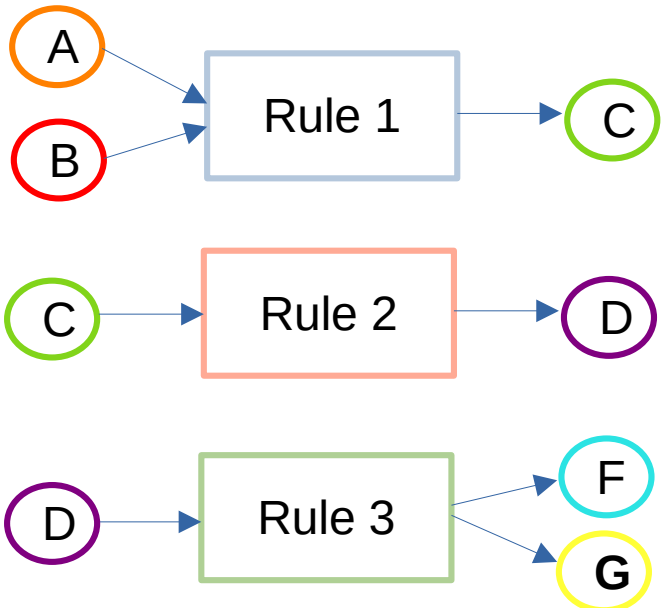


Median = 40
N50 ~ 80

Total length = 340
Half = 170

.smk file

Input **Output**



Request : generate G

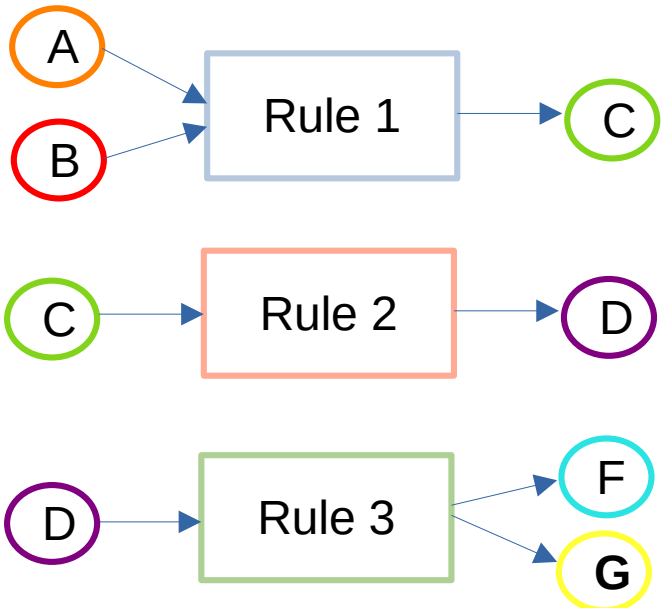
→ G exists ?

No

Schedule :

.smk file

Input **Output**



Request : generate G

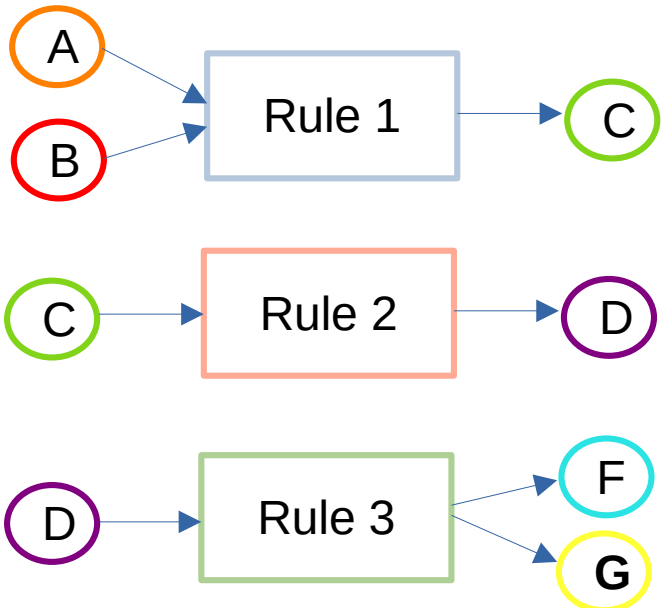
→ G exists ? Can it be generated ?
No, Rule3 can

Schedule :

Rule 1

.smk file

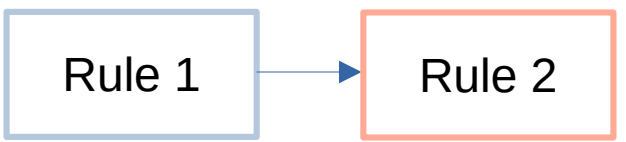
Input **Output**



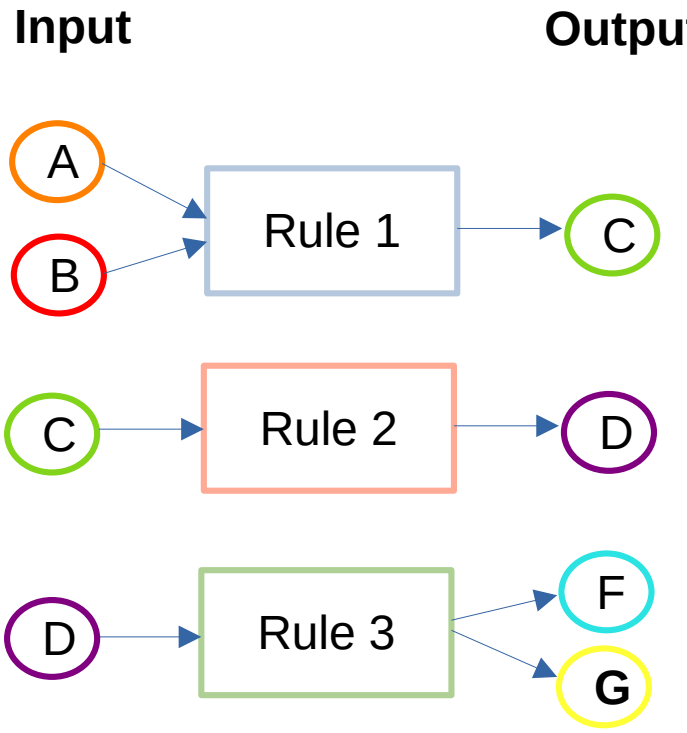
Request : generate G

→ G exists ? Can it be generated ?
No, Rule3 can
→ Rule 3 needs D, exists, generated ?
Doesn't exist, Rule 2 can

Schedule :



.smk file

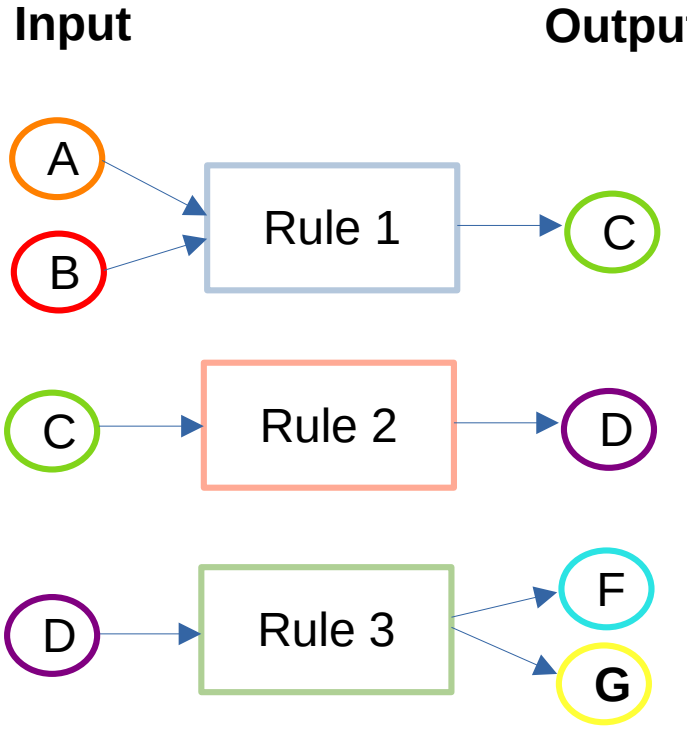


Request : generate G

→ G exists ? Can it be generated ?
No, Rule3 can
→ Rule 3 needs D, exists, generated ?
Doesn't exist, Rule 2 can
→ Rule 2 needs C, exists, generated ?
Doesn't exist, Rule 1 can

Schedule :

.smk file



Request : generate G

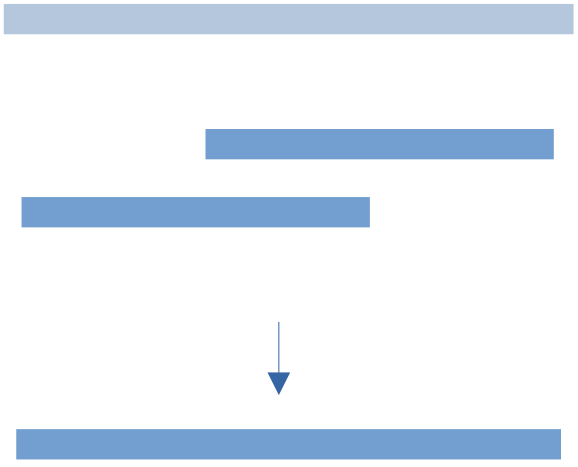
→ G exists ? Can it be generated ?
No, Rule3 can
→ Rule 3 needs D, exists, generated ?
Doesn't exist, Rule 2 can
→ Rule 2 needs C, exists, generated ?
Doesn't exist, Rule 1 can
→ Rule 1 needs A,B, exist, generated ?
YES !

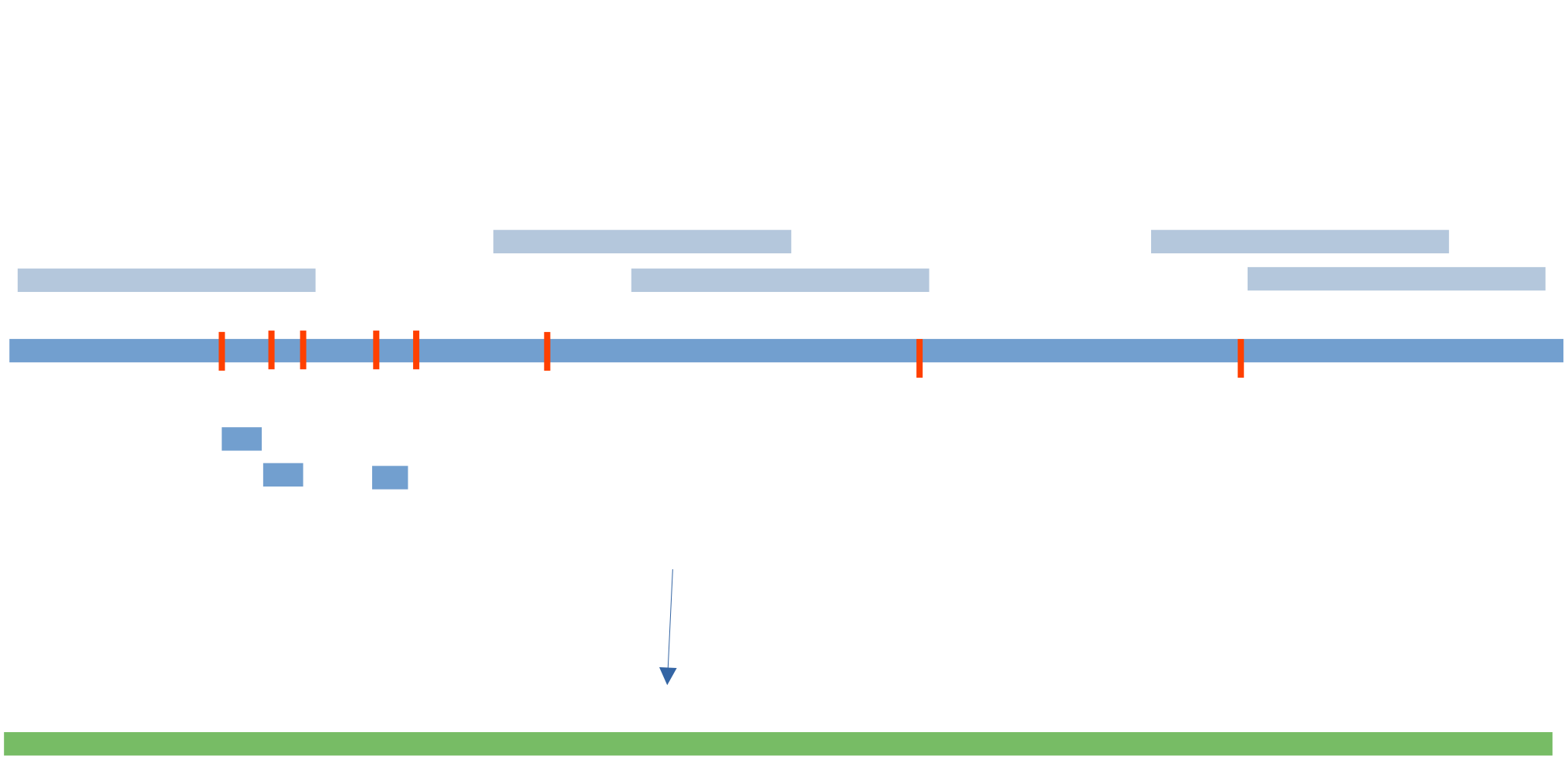
Schedule :

```
rule Hello_world:
    input: "/home/ubuntu/requirement.txt"
    output: "{path}/snakemake.txt"
    shell: "echo HELLO WORLD > {output}"
```

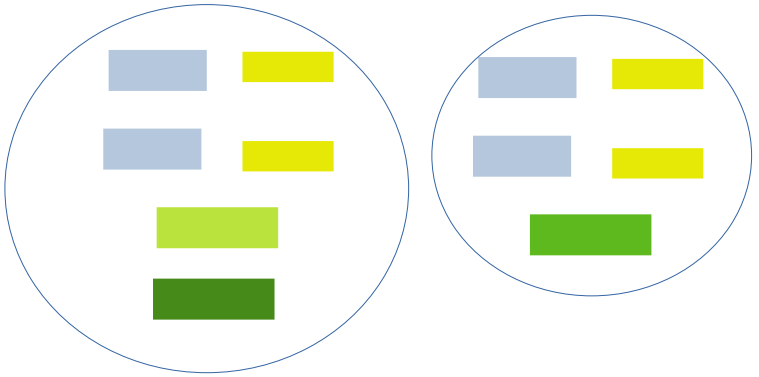
```
rule Hello_world:
    input: "{path}/requirement.txt"
    output: "{path}/snakemake.txt"
    shell: "echo HELLO WORLD > {output}"
```

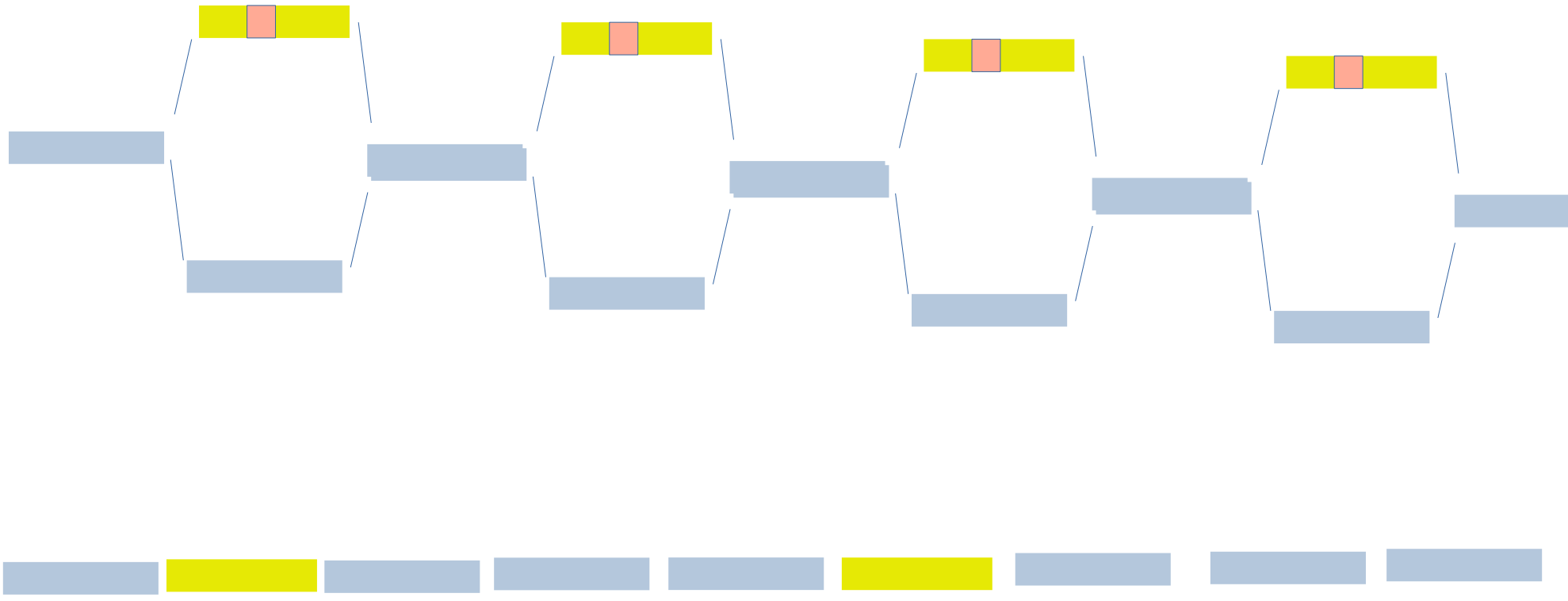
```
rule Hello_world:
    input: "/home/ubuntu/requirement.txt"
    output: "{macha_green_tea}/snakemake.txt"
    shell: "echo HELLO WORLD > {output}"
```

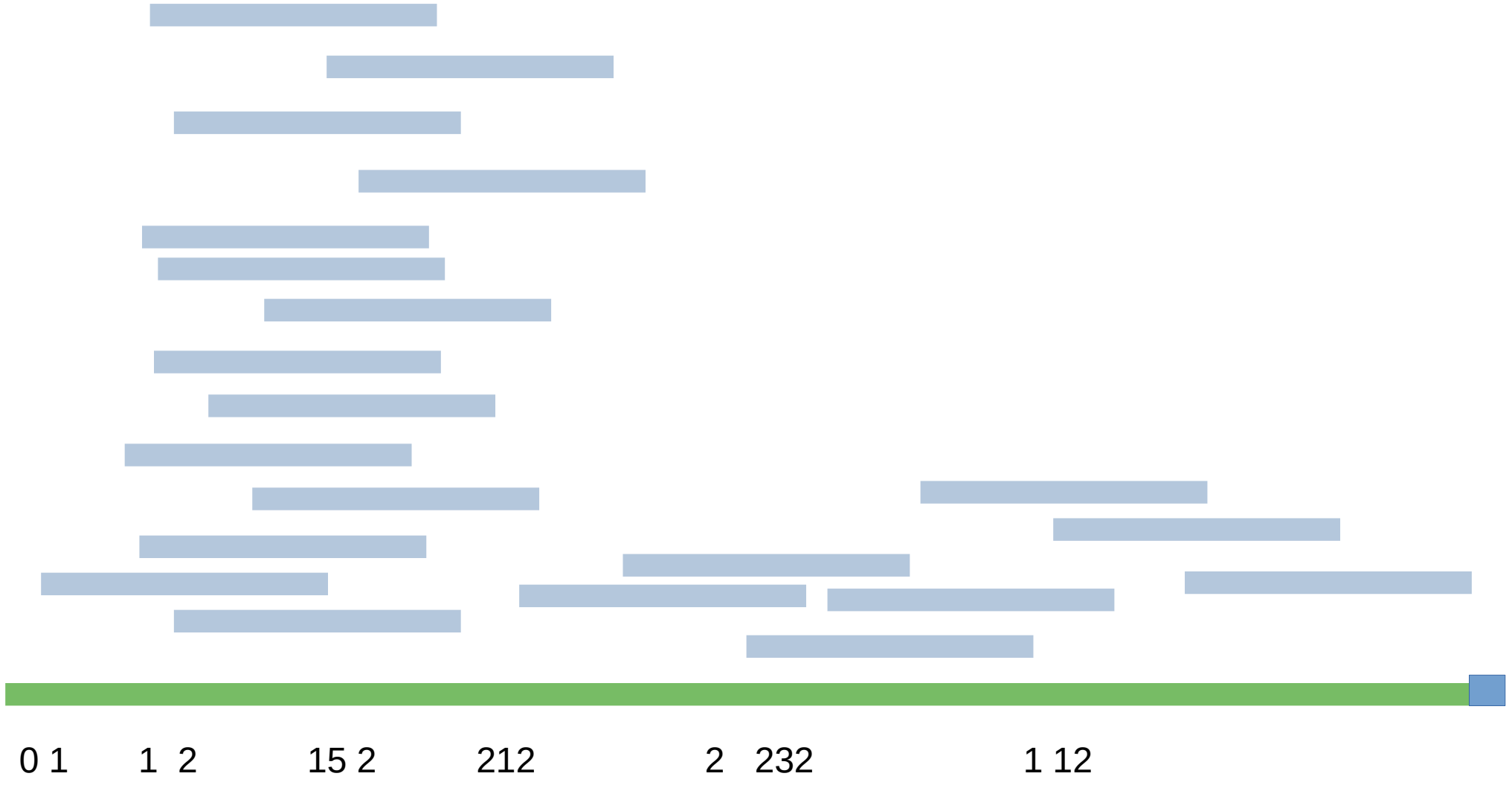




Sample A	Sample B
Assembly A	Assembly B
20	5
5	20






0 1
1 2
15 2
212
2 232
1 12