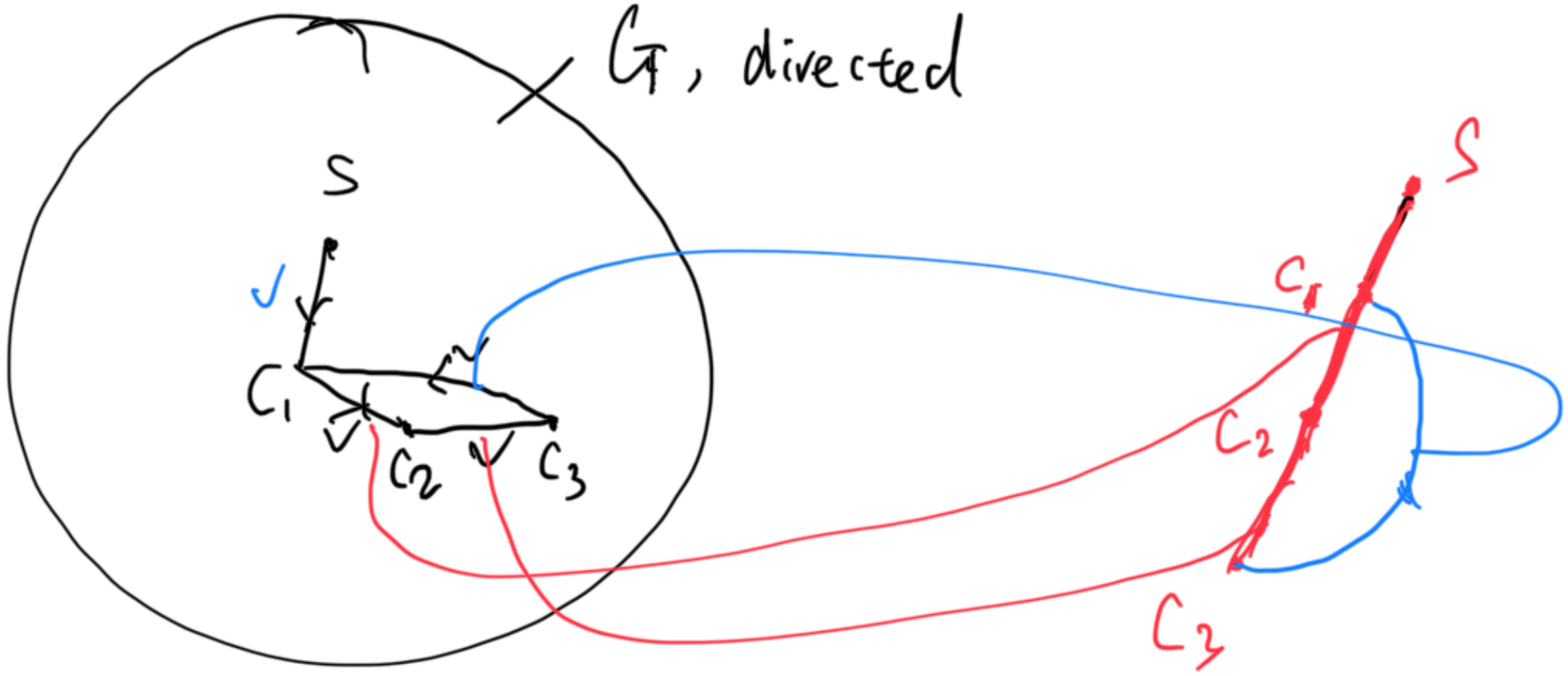
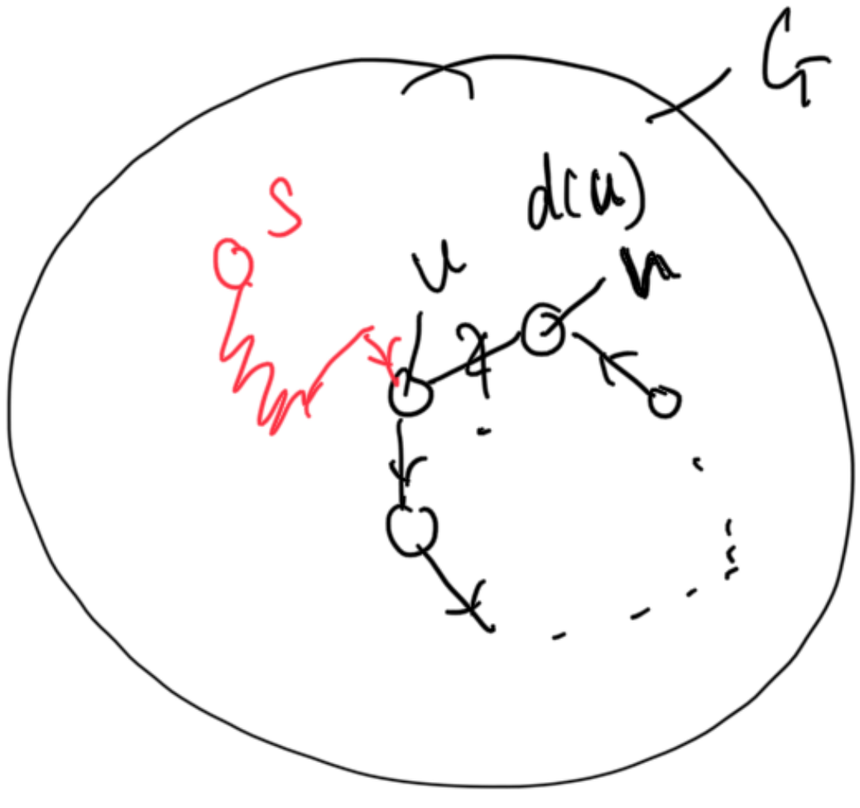
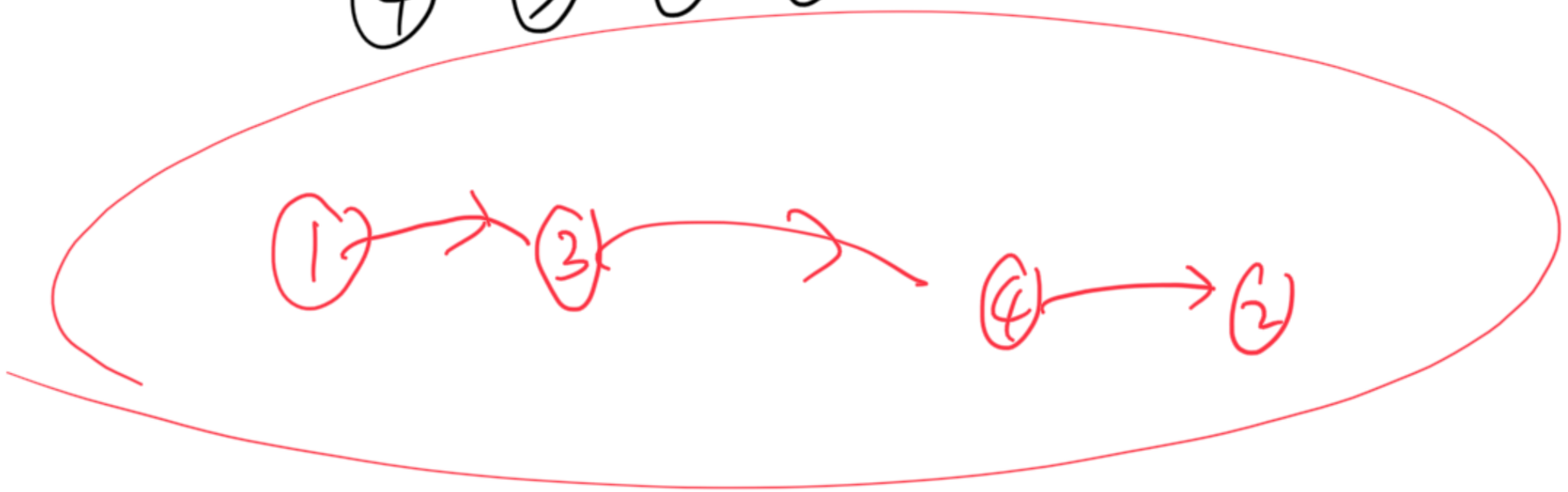
Lecture 9, Fall 2023





white path theorem

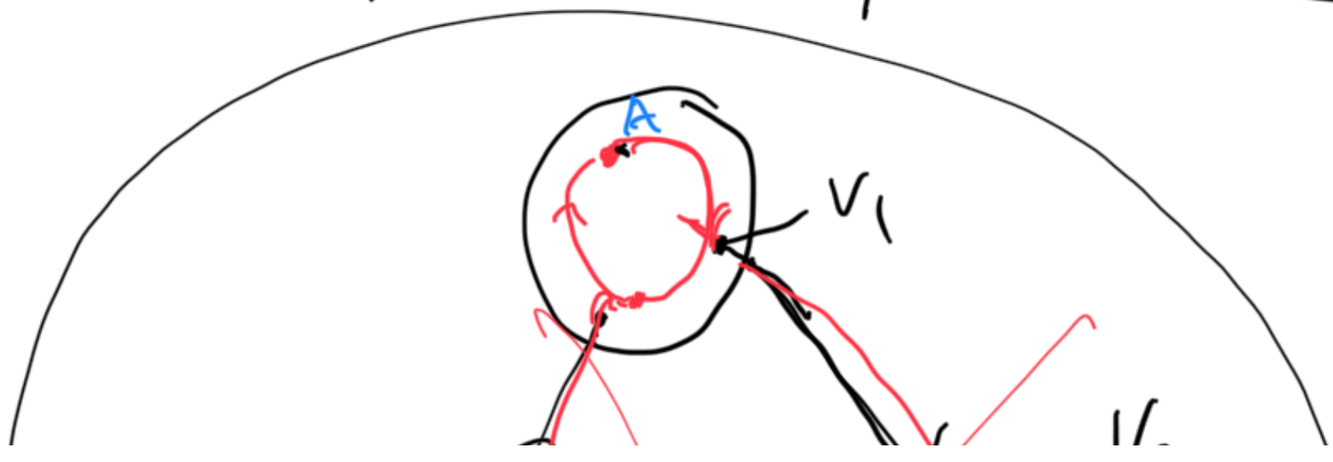
4 3 2 1

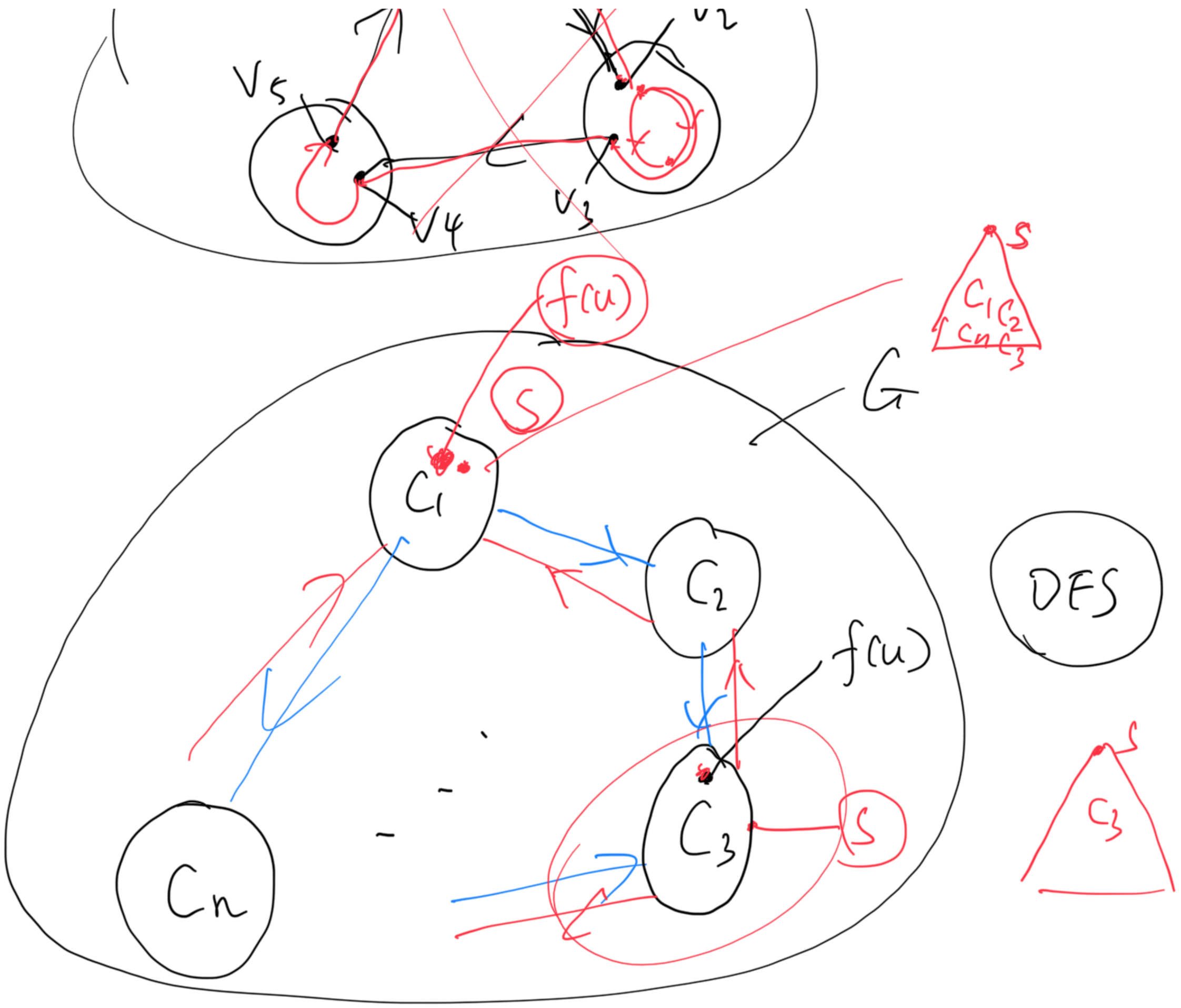


2 4 3 1

2 3 4 1

Component Graph : DAG



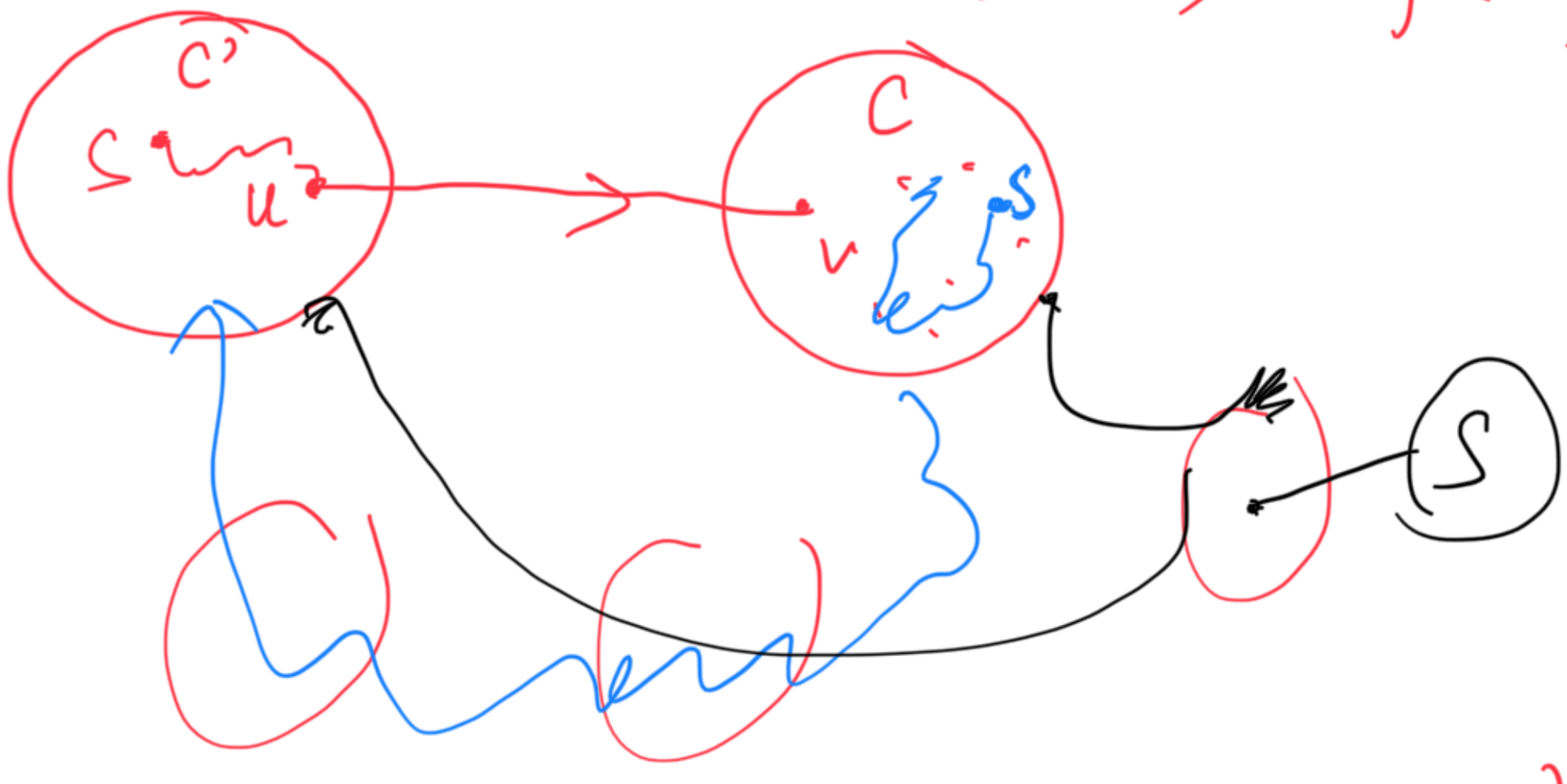

V5
V4
V3
V2
f(u)
S
C1
C2
C3
Cn
G
S
C1 C2
Cn C3
DFS
f(u)
S
C3

DAG

$f(u) > f(v)$

Component DAG

$f(c') > f(c)$

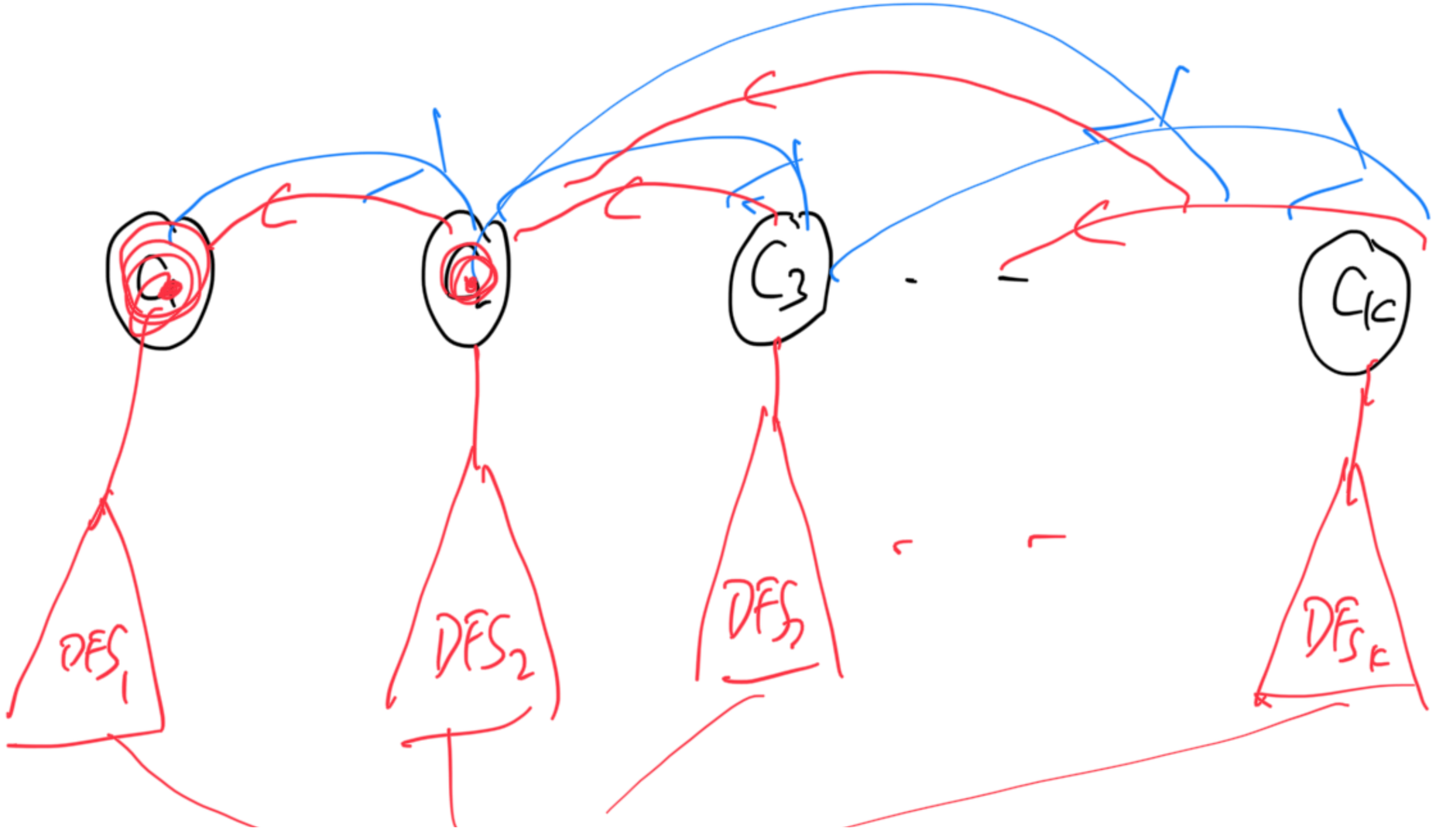


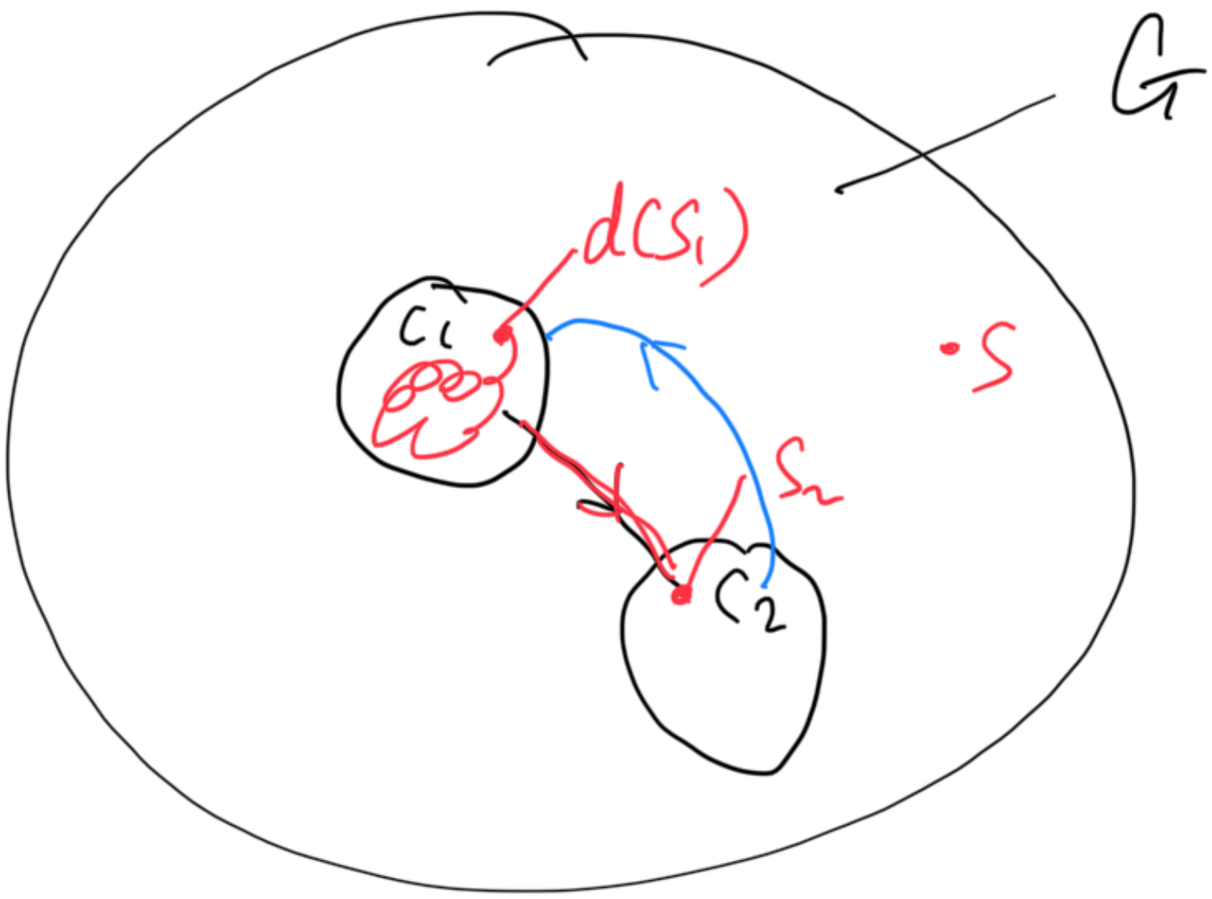
case 1) DFS starts from some node in C'

$$f(C') = f(s) > f(C)$$

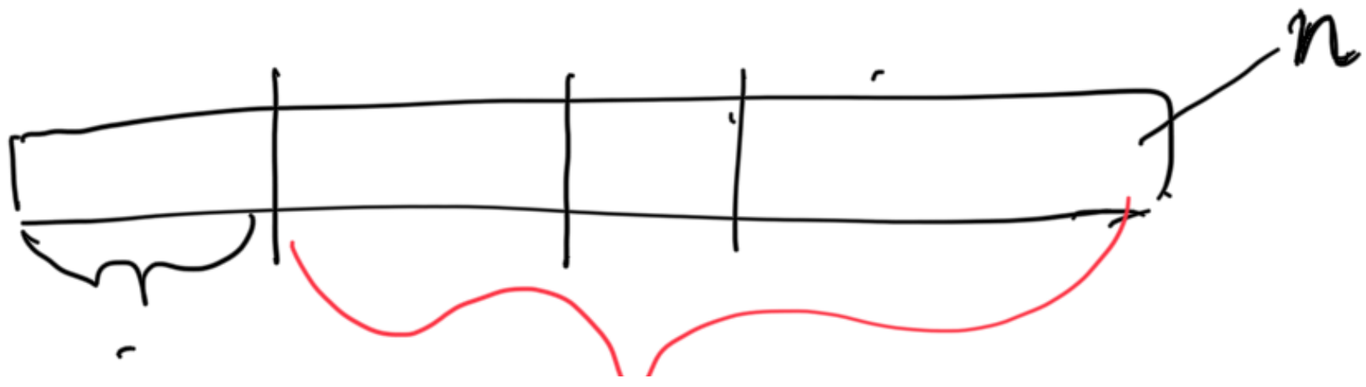
2) DFS starts from some node in C

$$f(C) = f(s) < d(u) < f(C')$$




G
d(S1)
C1
S
S2
C2

S1
C1
S2
C2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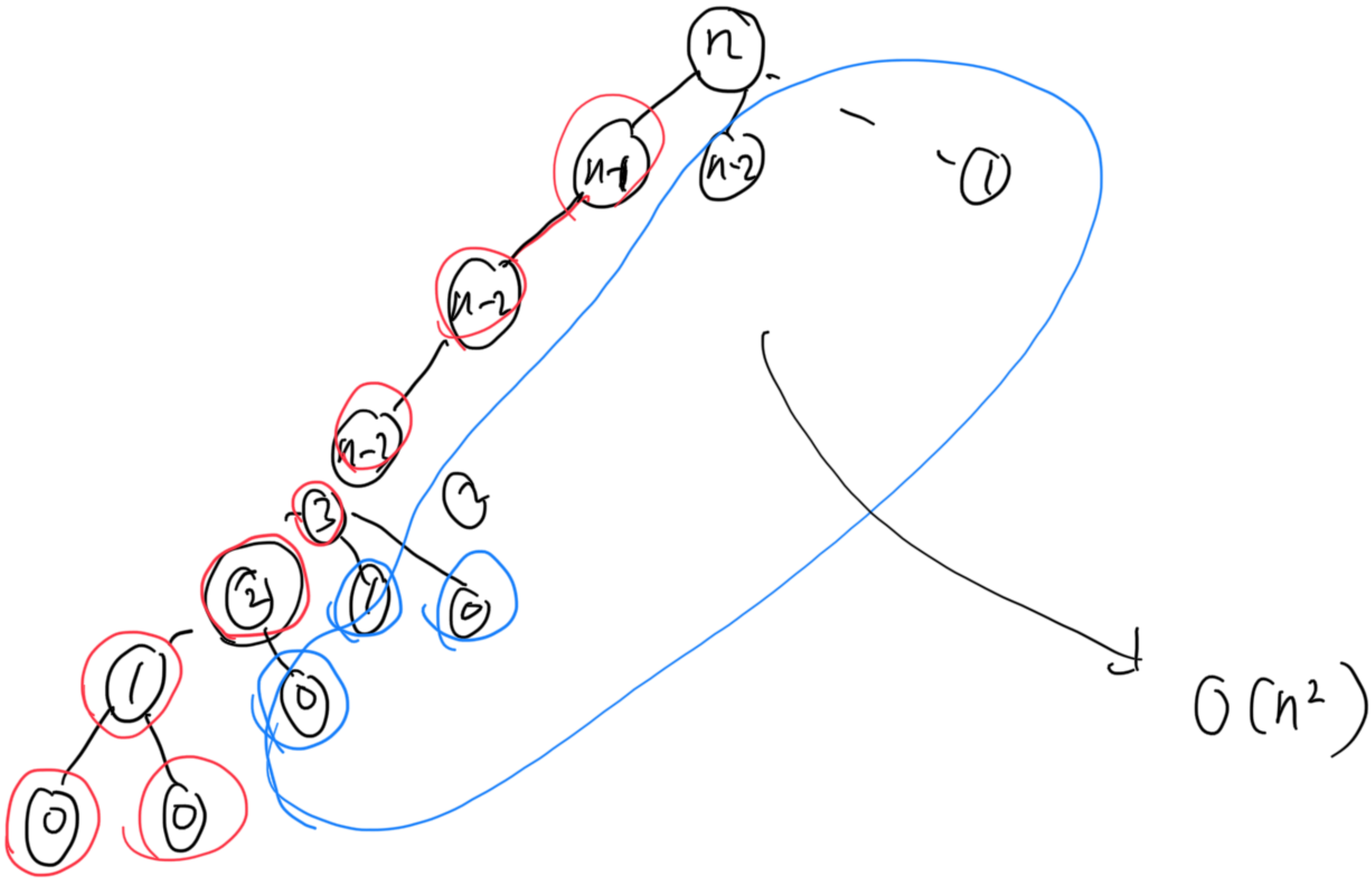
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