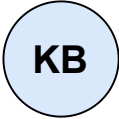


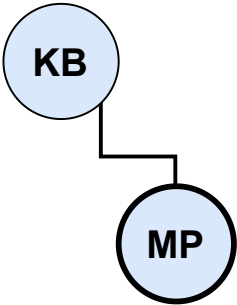
Questão 2

Inserir Elementos KB, MP, BT, SA, SJ, KA, BN, OJ, OH, CF e IF

Inserir Elemento KB

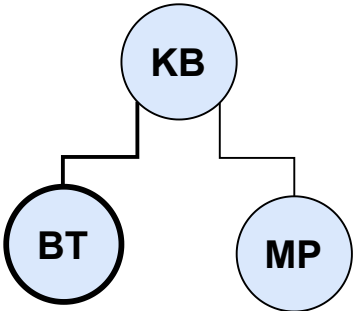


Inserir Elemento MP



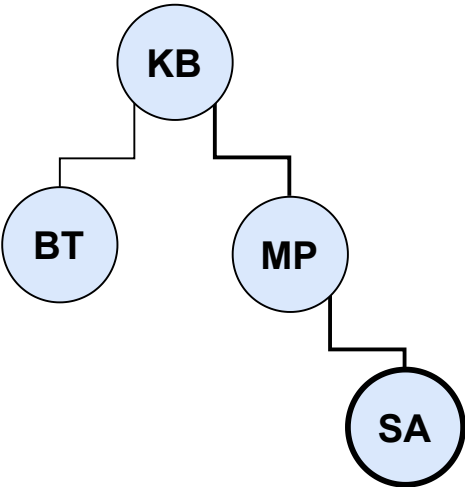
MP > KB
Então o elemento é inserido à direita da raiz

Inserir Elemento BT



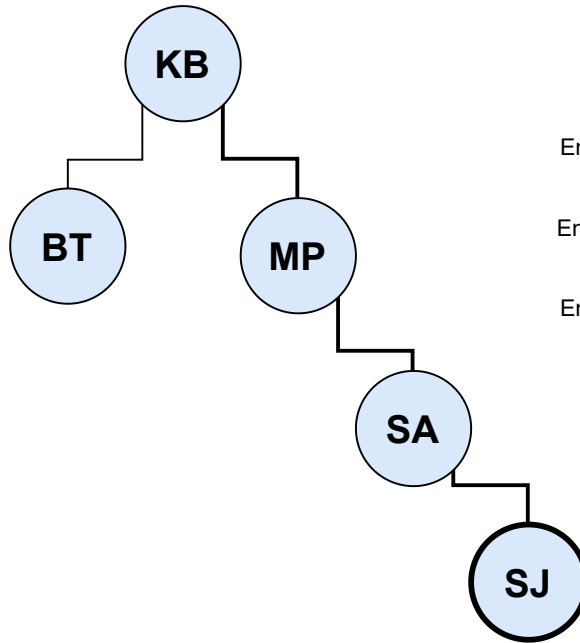
BT < KB
Então o elemento é inserido à esquerda da raiz

Inserir Elemento SA



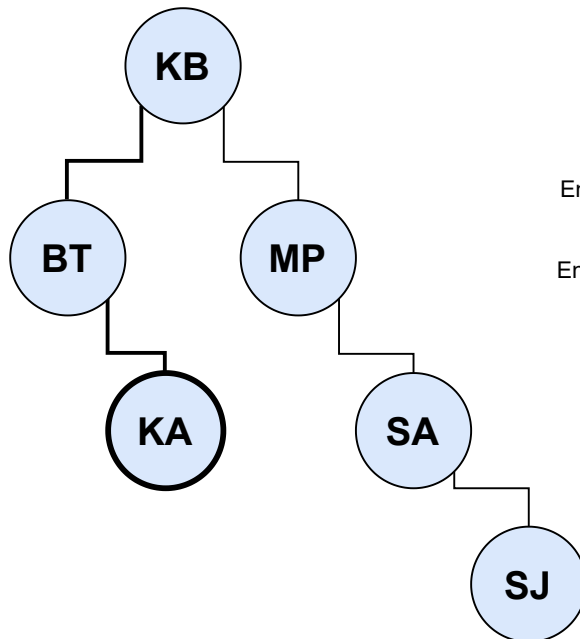
SA > KB
Então o elemento é inserido à direita da raiz
SA > MP
Então o elemento é inserido à direita de 'MP'

Inserir Elemento SJ



SJ > KB
Então o elemento é inserido
à direita da raiz
SJ > MP
Então o elemento é inserido
à direita de 'MP'
SJ > SA
Então o elemento é inserido
à direita de 'SA'

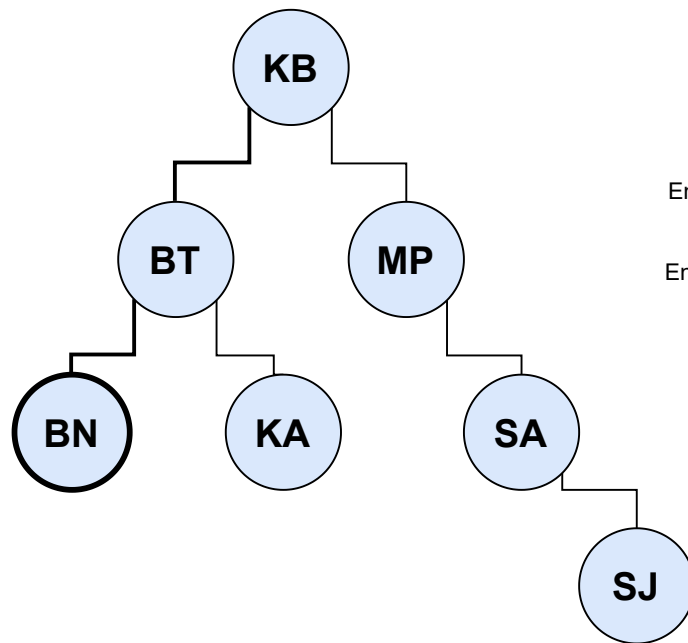
Inserir Elemento KA



KA < KB
Então o elemento é inserido
à esquerda da raiz
KA > BT
Então o elemento é inserido
à direita de 'BT'

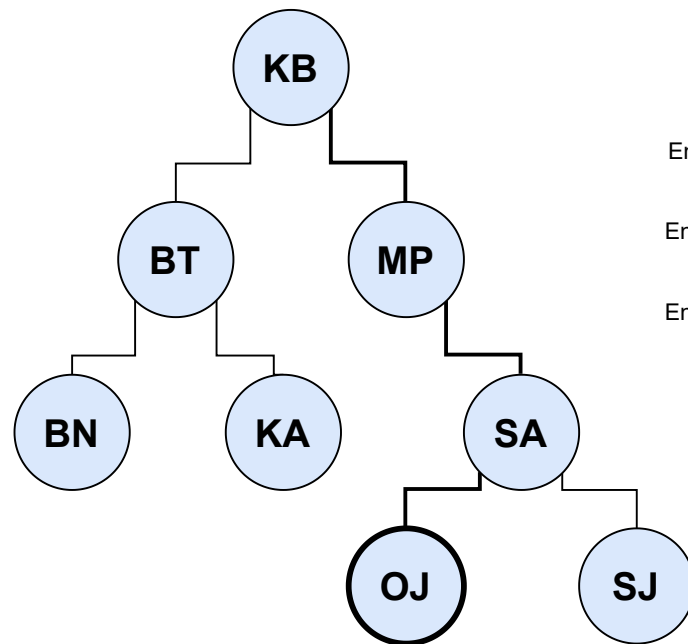
Espaço deixado para não quebrar o próximo desenho

Inserir Elemento BN



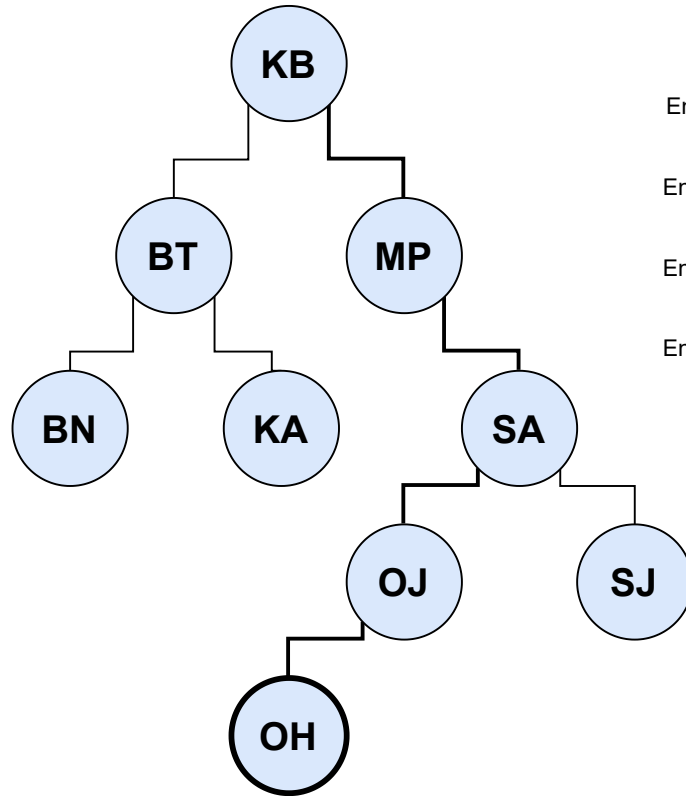
$BN < KB$
Então o elemento é inserido
à esquerda da raiz
 $BN < BT$
Então o elemento é inserido
à esquerda de 'BT'

Inserir Elemento OJ



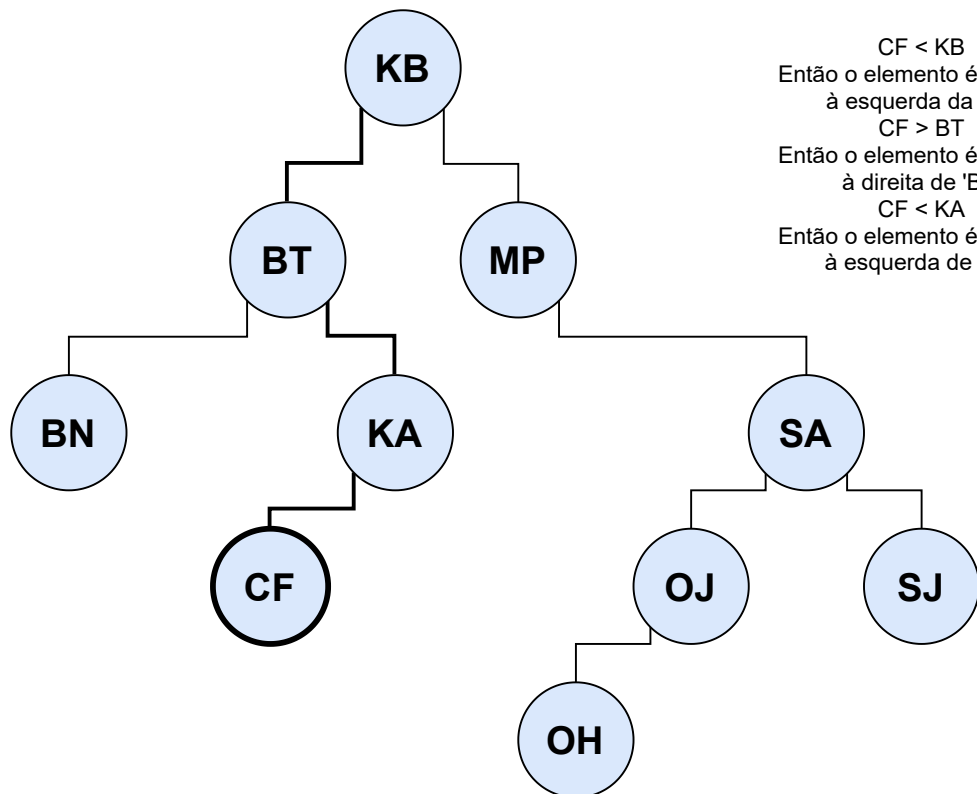
$OJ > KB$
Então o elemento é inserido
à direita da raiz
 $OJ > MP$
Então o elemento é inserido
à direita de 'MP'
 $OJ < SA$
Então o elemento é inserido
à esquerda de 'SA'

Inserir Elemento OH



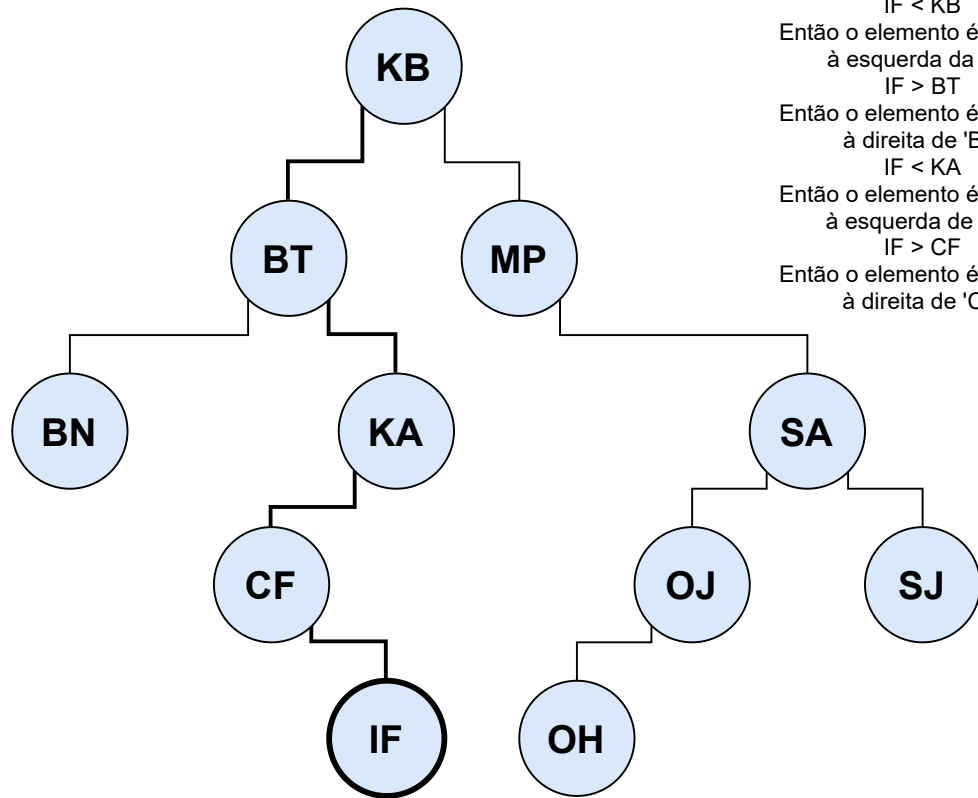
$OH > KB$
Então o elemento é inserido à direita da raiz
 $OH > MP$
Então o elemento é inserido à direita de 'MP'
 $OH < SA$
Então o elemento é inserido à esquerda de 'SA'
 $OH < OJ$
Então o elemento é inserido à esquerda de 'OH'

Inserir Elemento CF



$CF < KB$
Então o elemento é inserido à esquerda da raiz
 $CF > BT$
Então o elemento é inserido à direita de 'BT'
 $CF < KA$
Então o elemento é inserido à esquerda de 'KA'

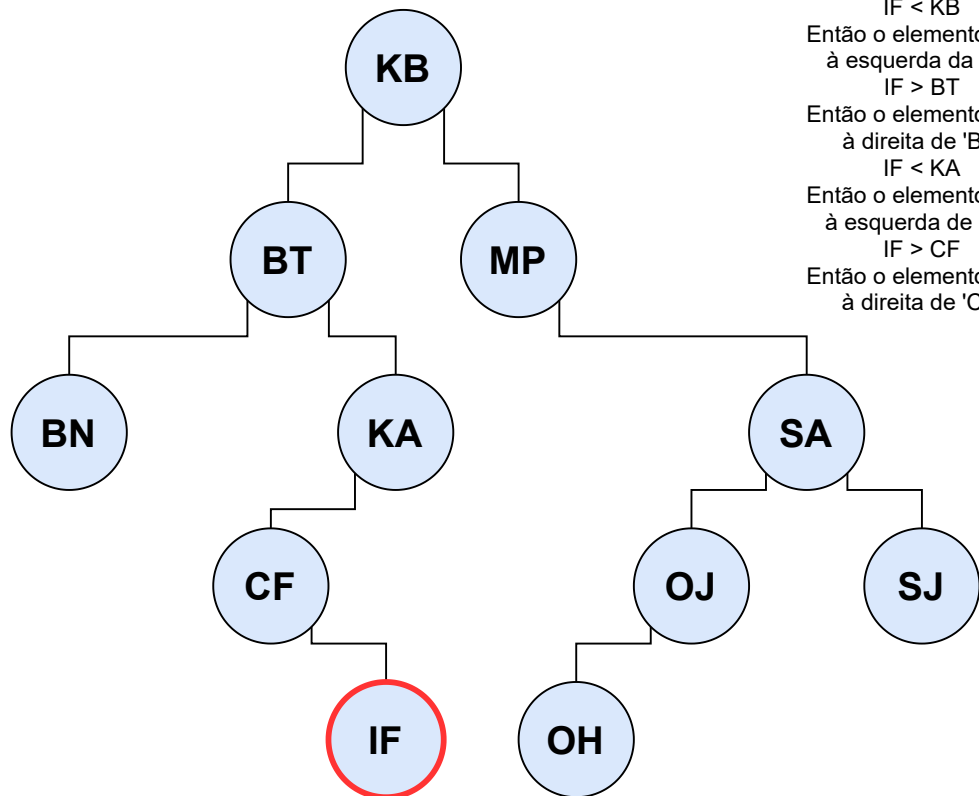
Inserir Elemento IF



IF < KB
Então o elemento é inserido
à esquerda da raiz
IF > BT
Então o elemento é inserido
à direita de 'BT'
IF < KA
Então o elemento é inserido
à esquerda de 'KA'
IF > CF
Então o elemento é inserido
à direita de 'CF'

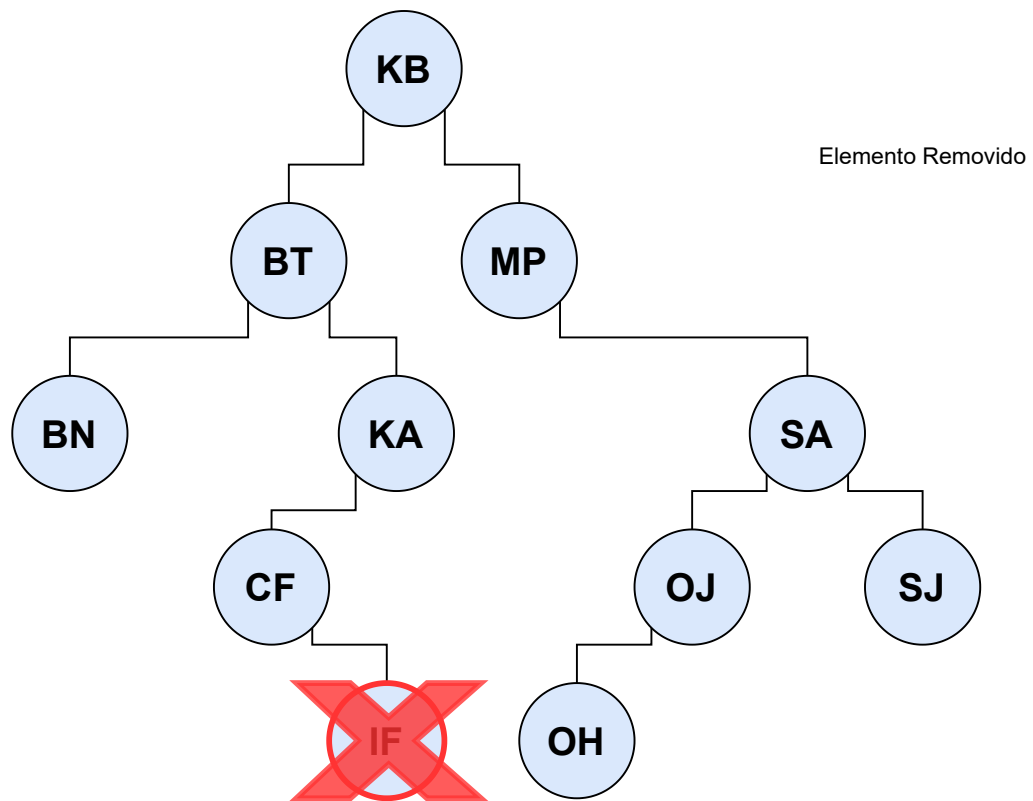
Remover Elementos IF, MP e KB

Remover Elemento IF (1/2)

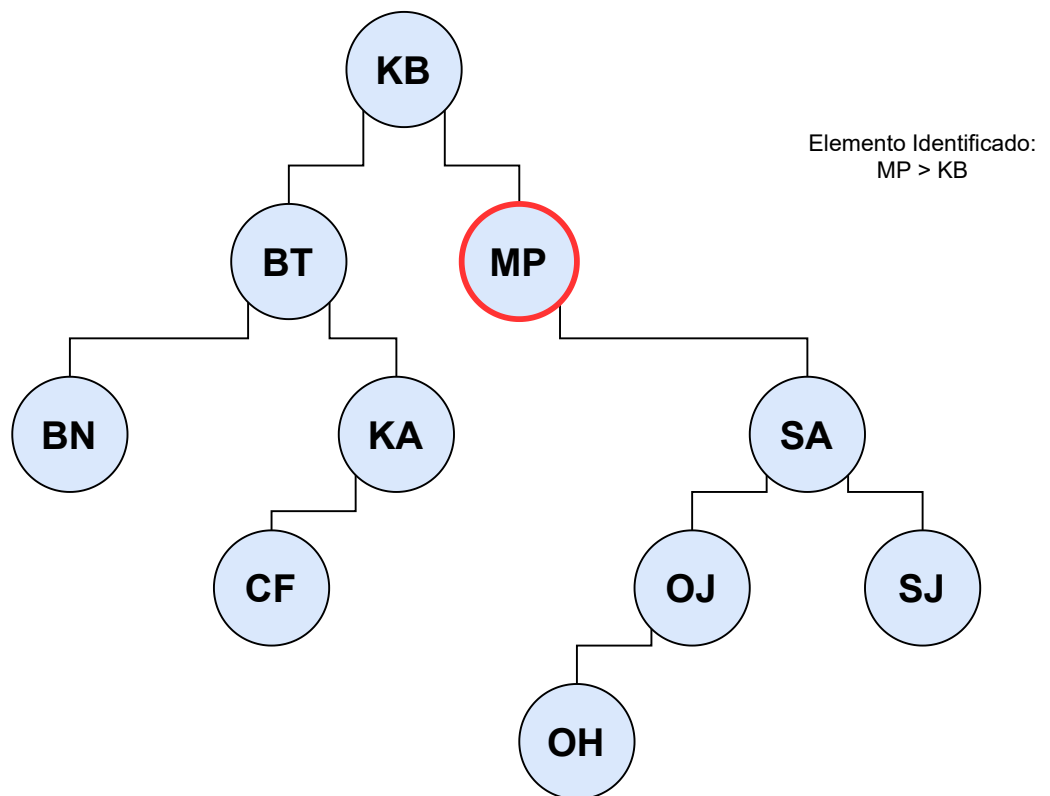


IF < KB
Então o elemento está
à esquerda da raiz
IF > BT
Então o elemento está
à direita de 'BT'
IF < KA
Então o elemento está
à esquerda de 'KA'
IF > CF
Então o elemento está
à direita de 'CF'

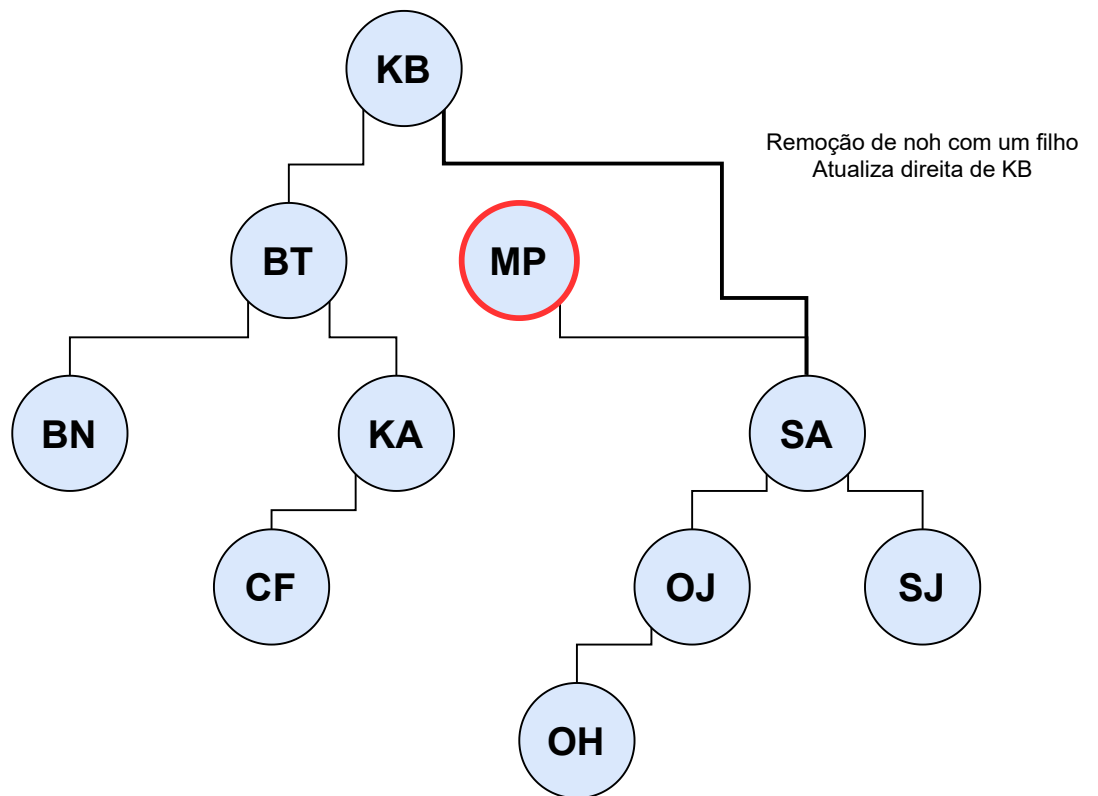
Remover Elemento IF (2/2)



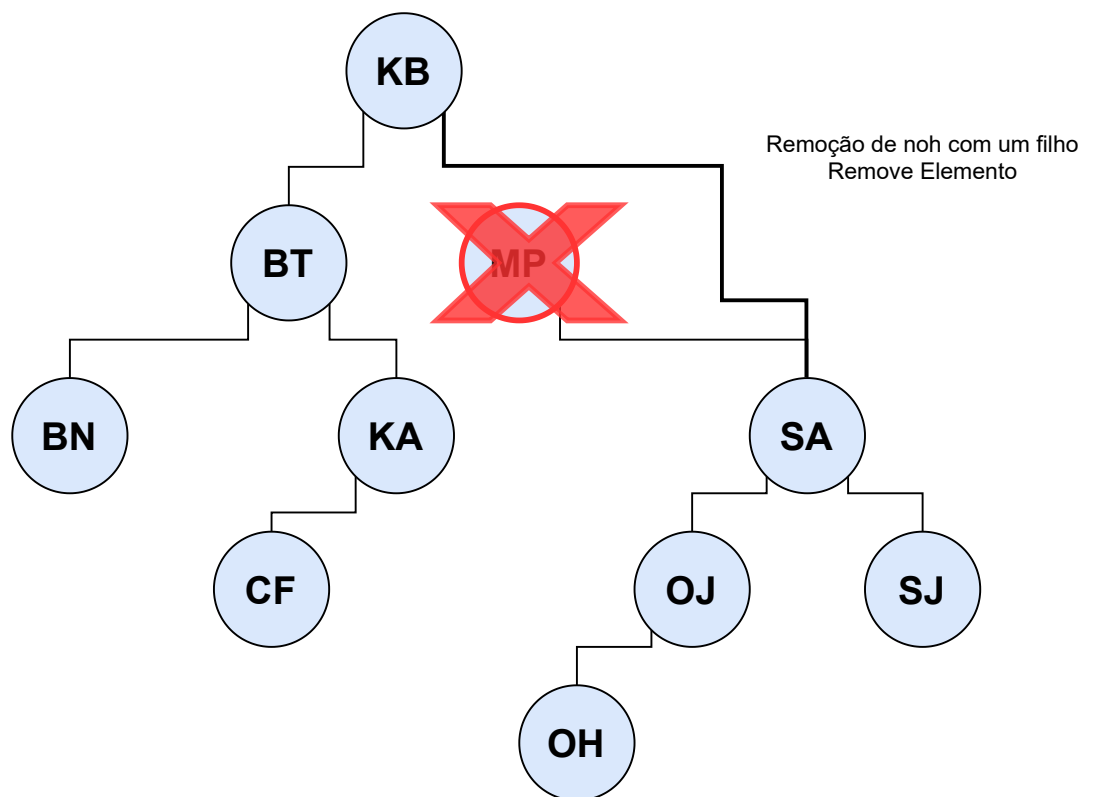
Remover Elemento MP (1/3)



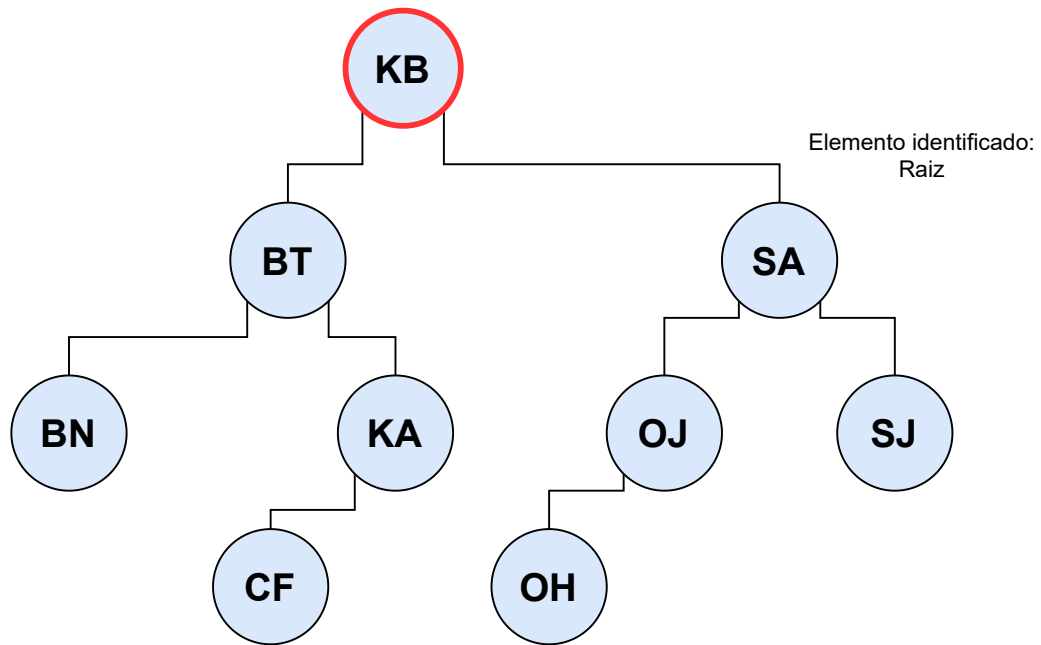
Remover Elemento MP (2\3)



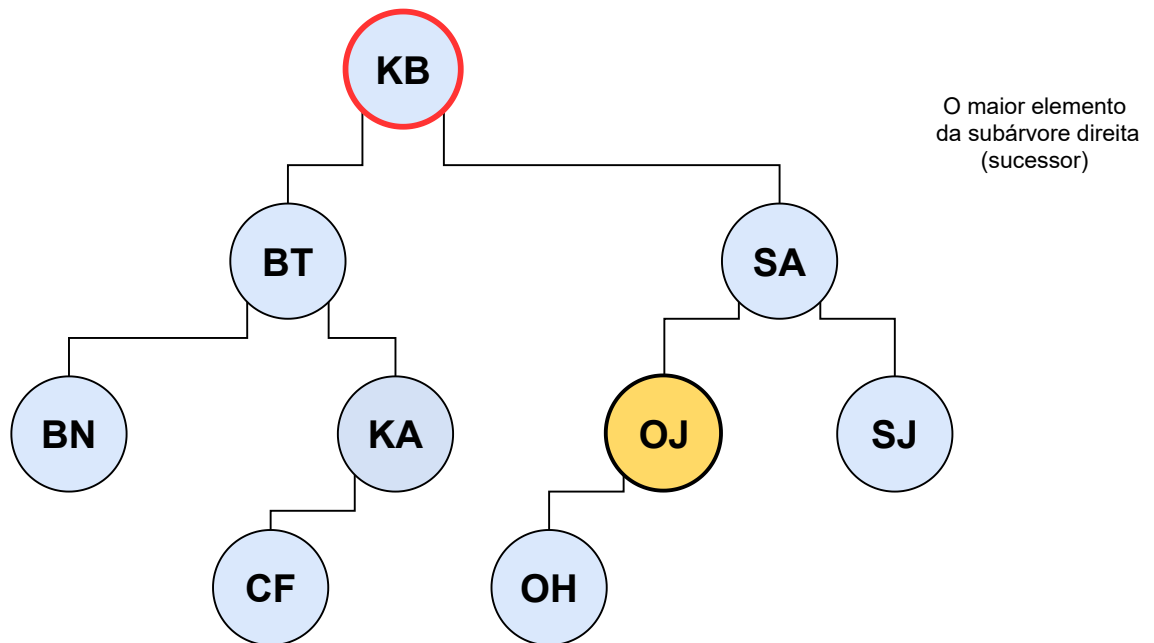
Remover Elemento MP (3\3)



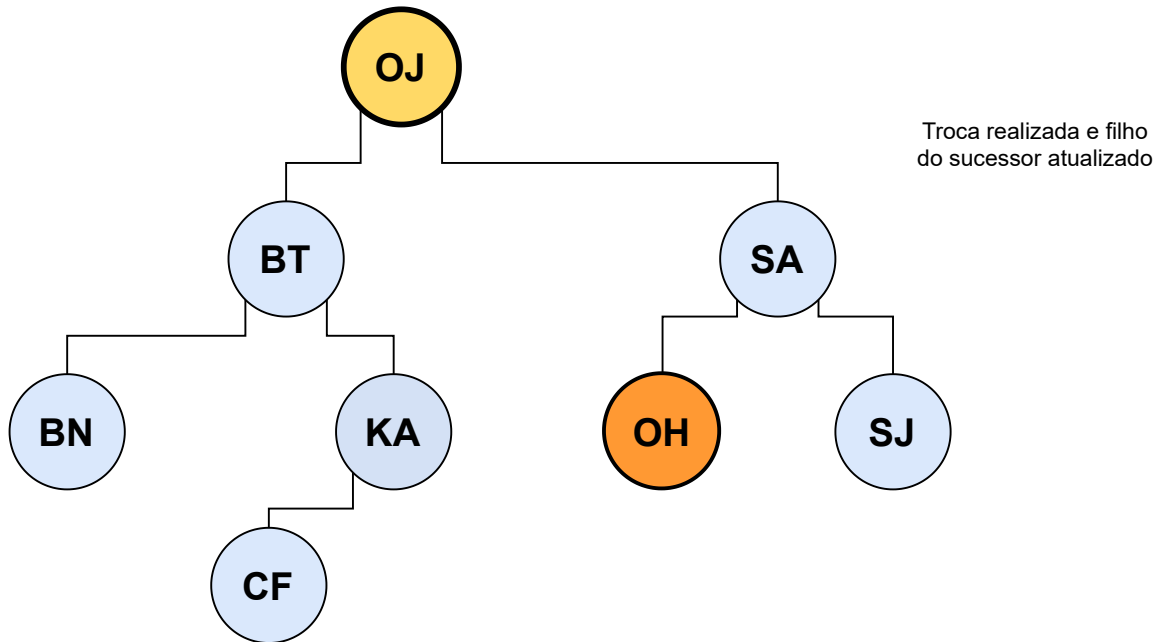
Remover Elemento KB (1\3)



Remover Elemento KB (2\3)

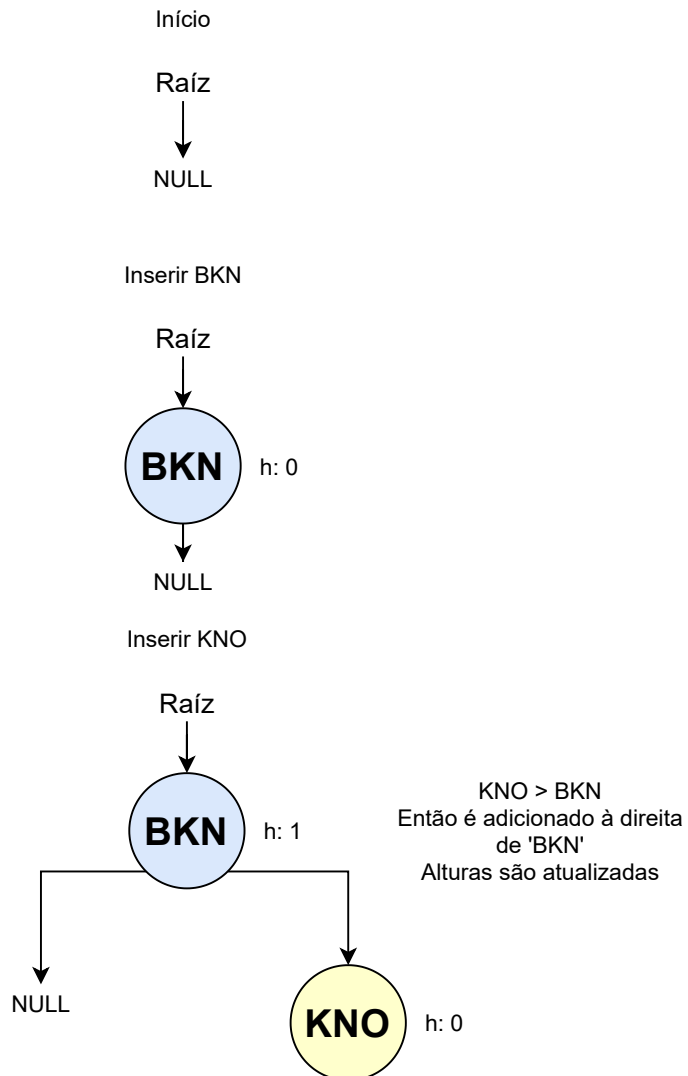


Remover Elemento KB (3\3)

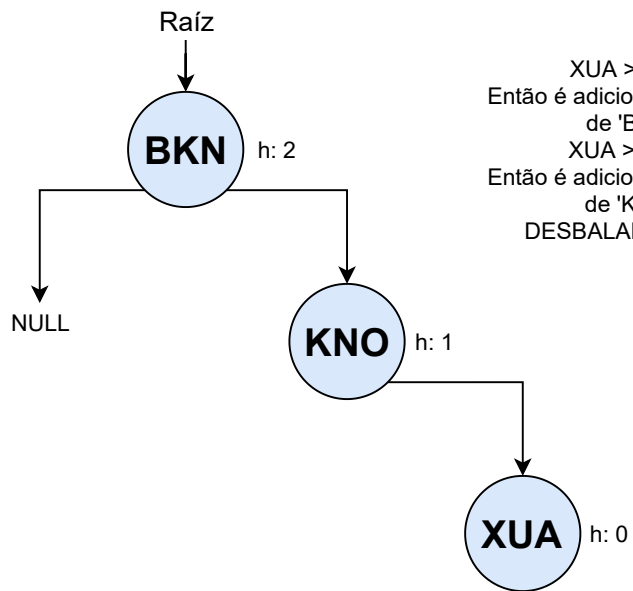


Questão 4

Inserir BKN, KNO, XUA, IOA, CNO, PDO, NAB, RAB, URC

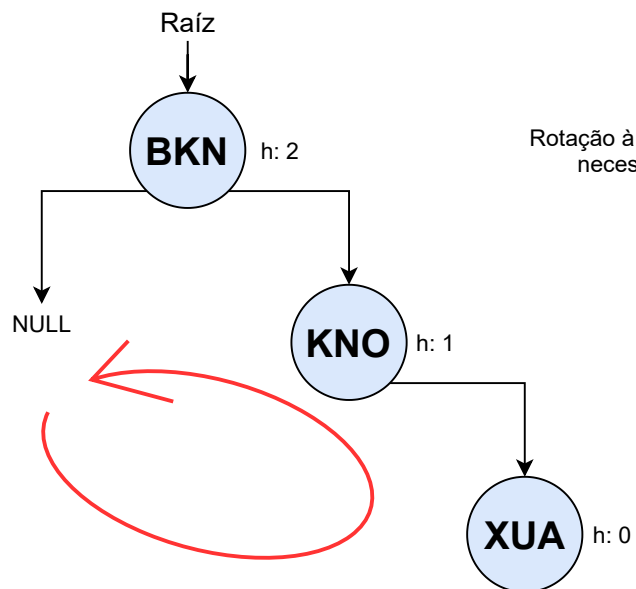


Inserir XUA (1/3)



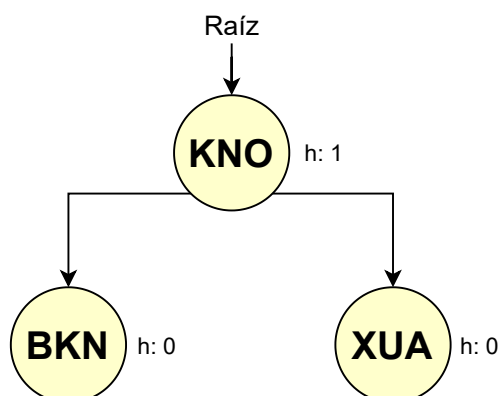
XUA > BKN
Então é adicionado à direita
de 'BKN'
XUA > KNO
Então é adicionado à direita
de 'KNO'
DESBALANCEADO!

Inserir XUA (2/3)



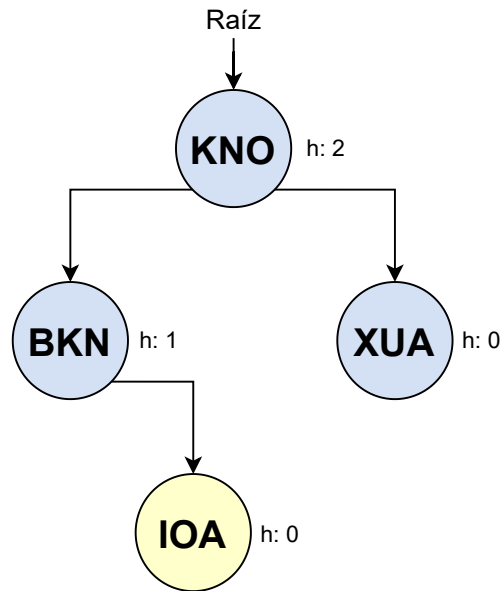
Rotação à esquerda
necessária

Inserir XUA (3/3)



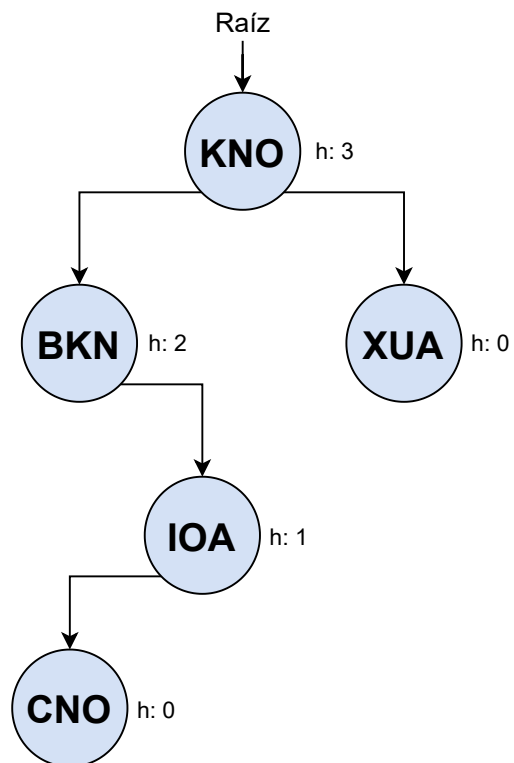
Operação Realizada

Inserir IOA



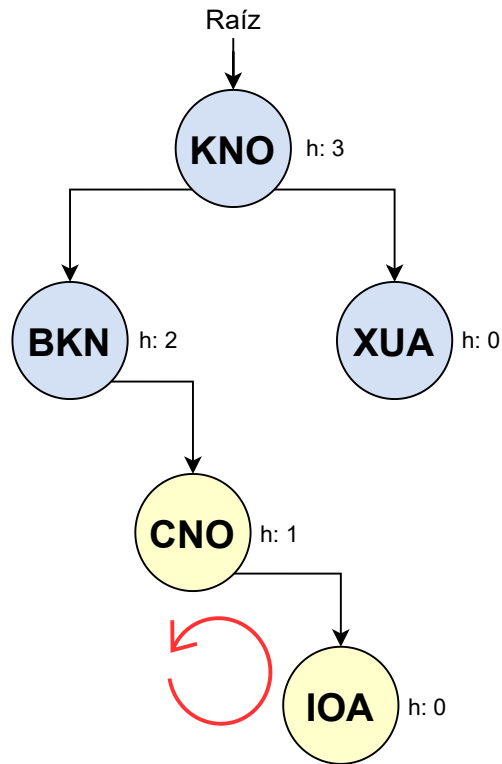
IOA < KNO
Então é adicionado
à esquerda de 'KNO'
IOA > BKN
Então é adicionado
à direita de 'BKN'

Inserir CNO (1/3)



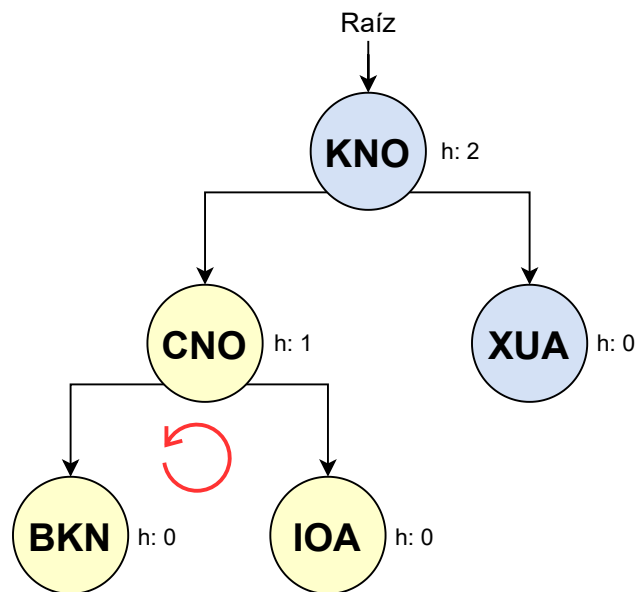
CNO < KNO
Então é adicionado
à esquerda de 'KNO'
CNO > BKN
Então é adicionado
à direita de 'BKN'
CNO < IOA
Então é adicionado
à esquerda de 'IOA'
DESBALANCEADO!

Inserir CNO (2/3)



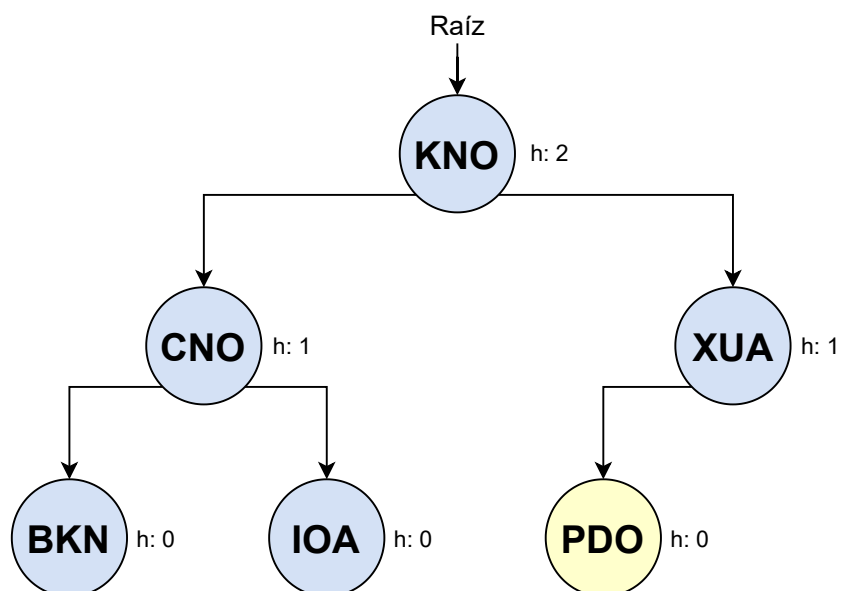
Rotação dupla
direita esquerda
necessária

Inserir CNO (3/3)



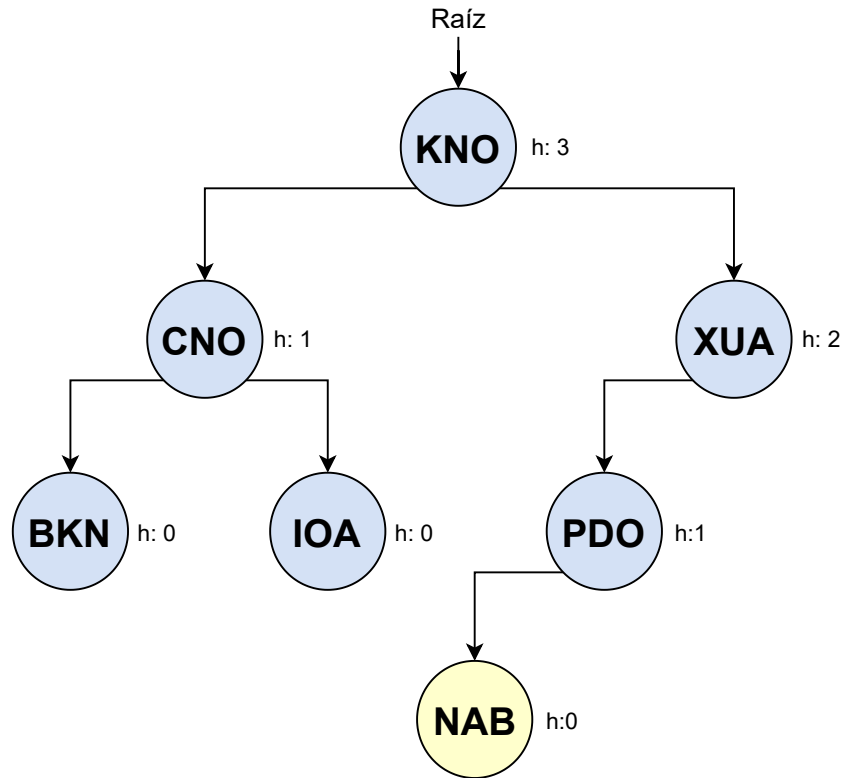
Operação realizada

Inserir PDO



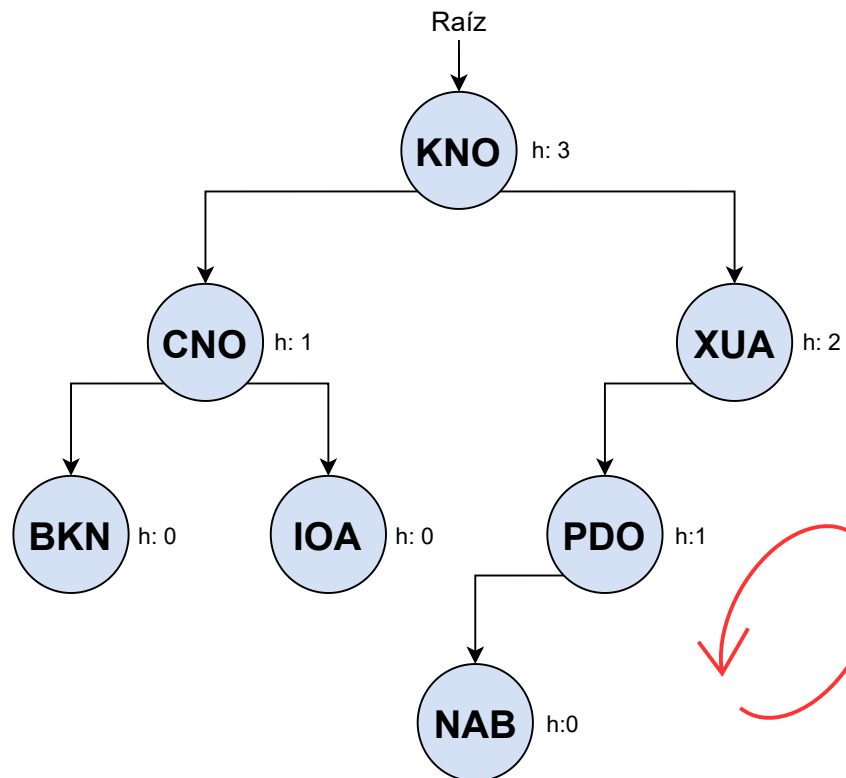
PDO > KNO
Então é adicionado
à direita
PDO < XUA
Então é adicionado
à esquerda

Inserir NAB (1/3)



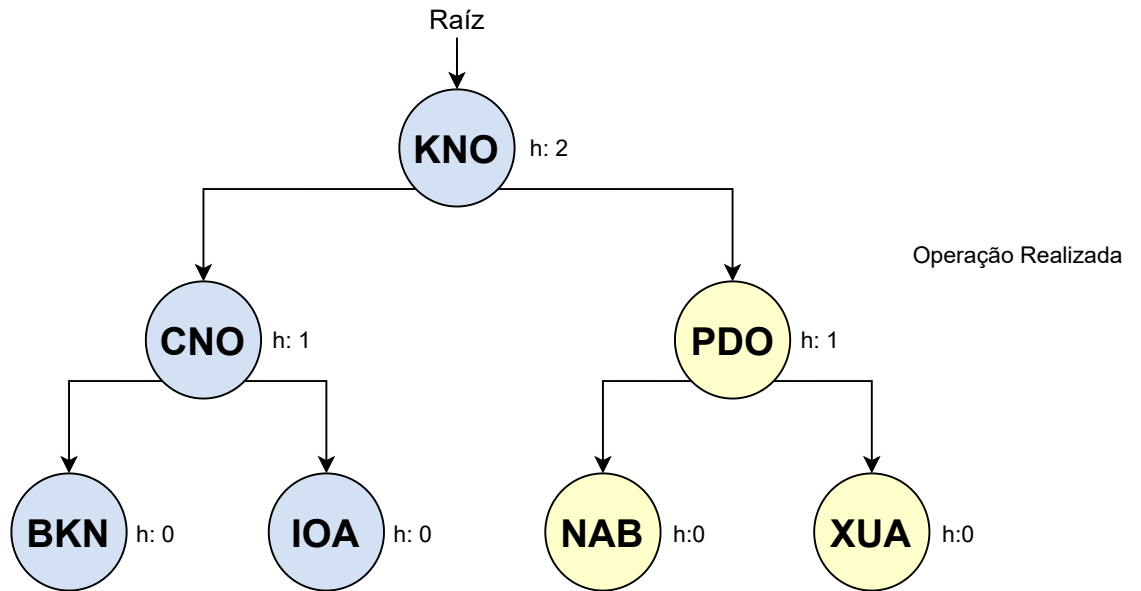
NAB > KNO
Então é adicionado
à direita
NAB < XUA
Então é adicionado
à esquerda
NAB < PDO
Então é adicionado
à esquerda
DESBALANCEADO!

Inserir NAB (2/3)

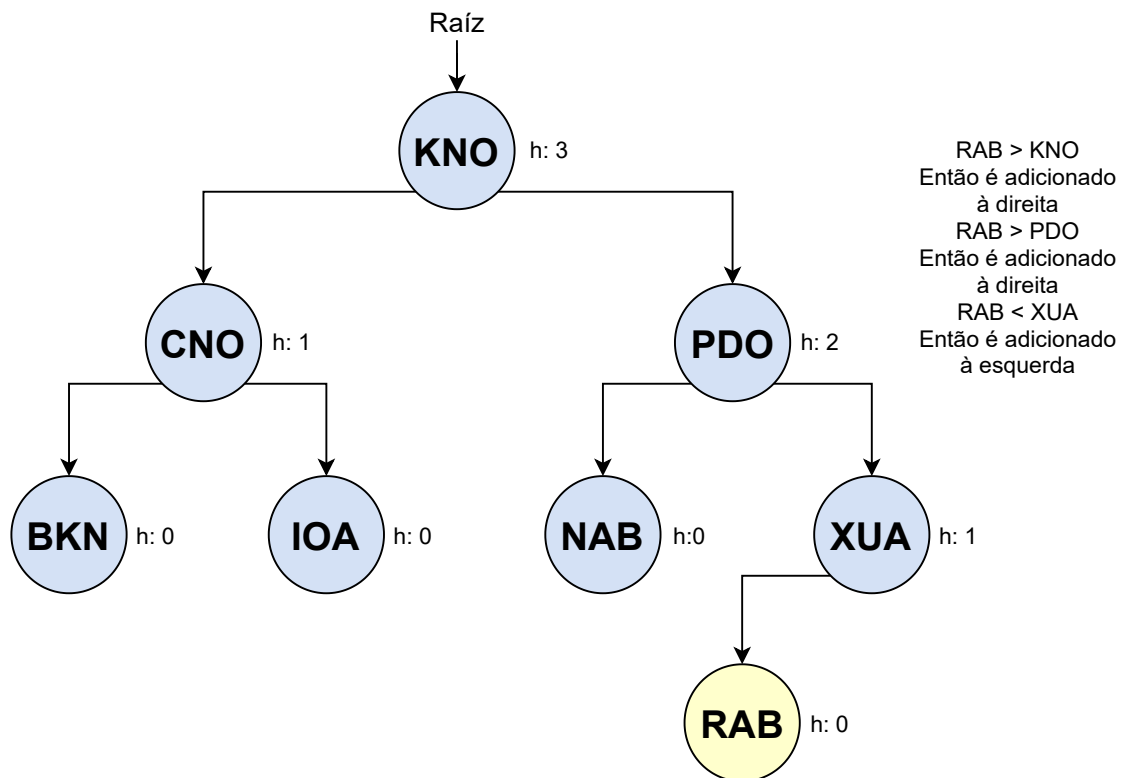


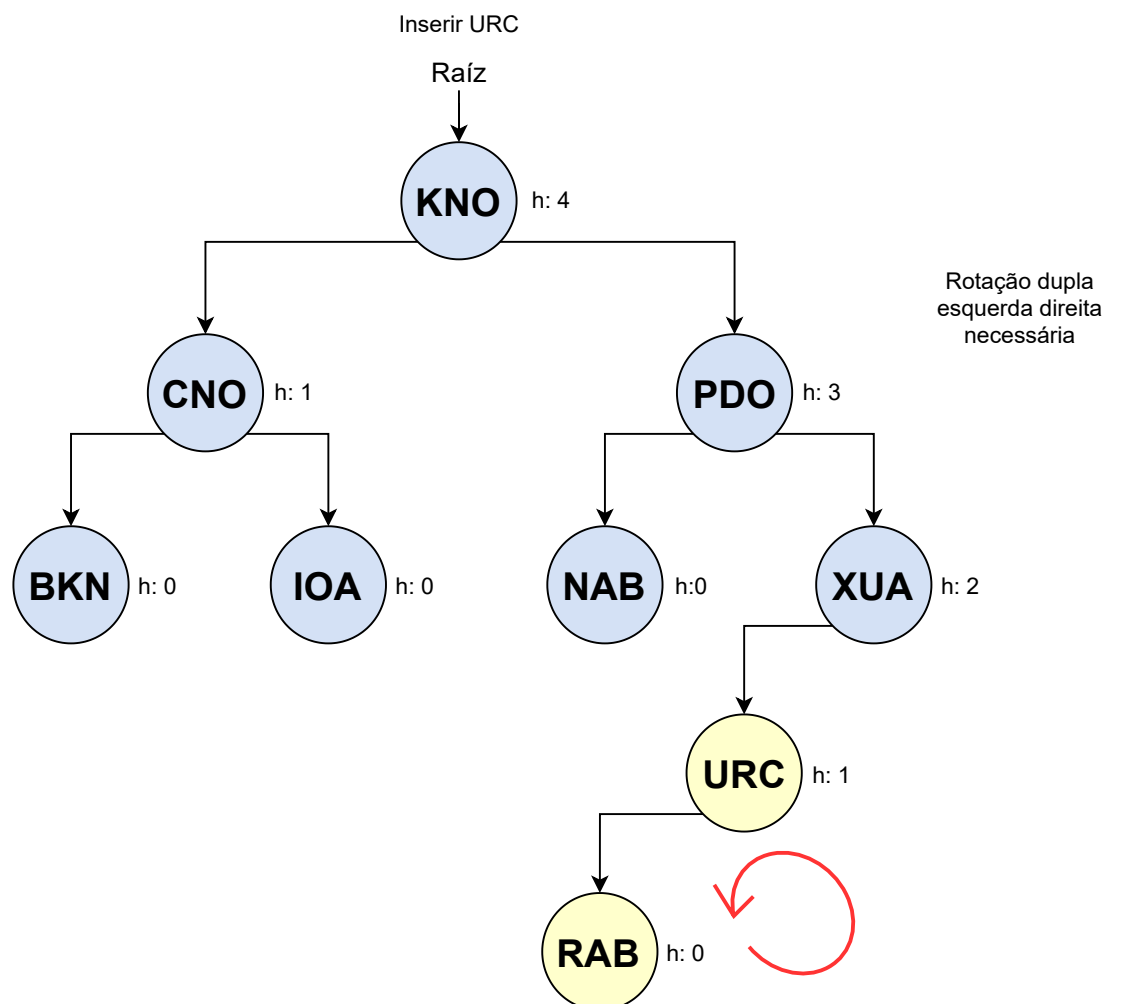
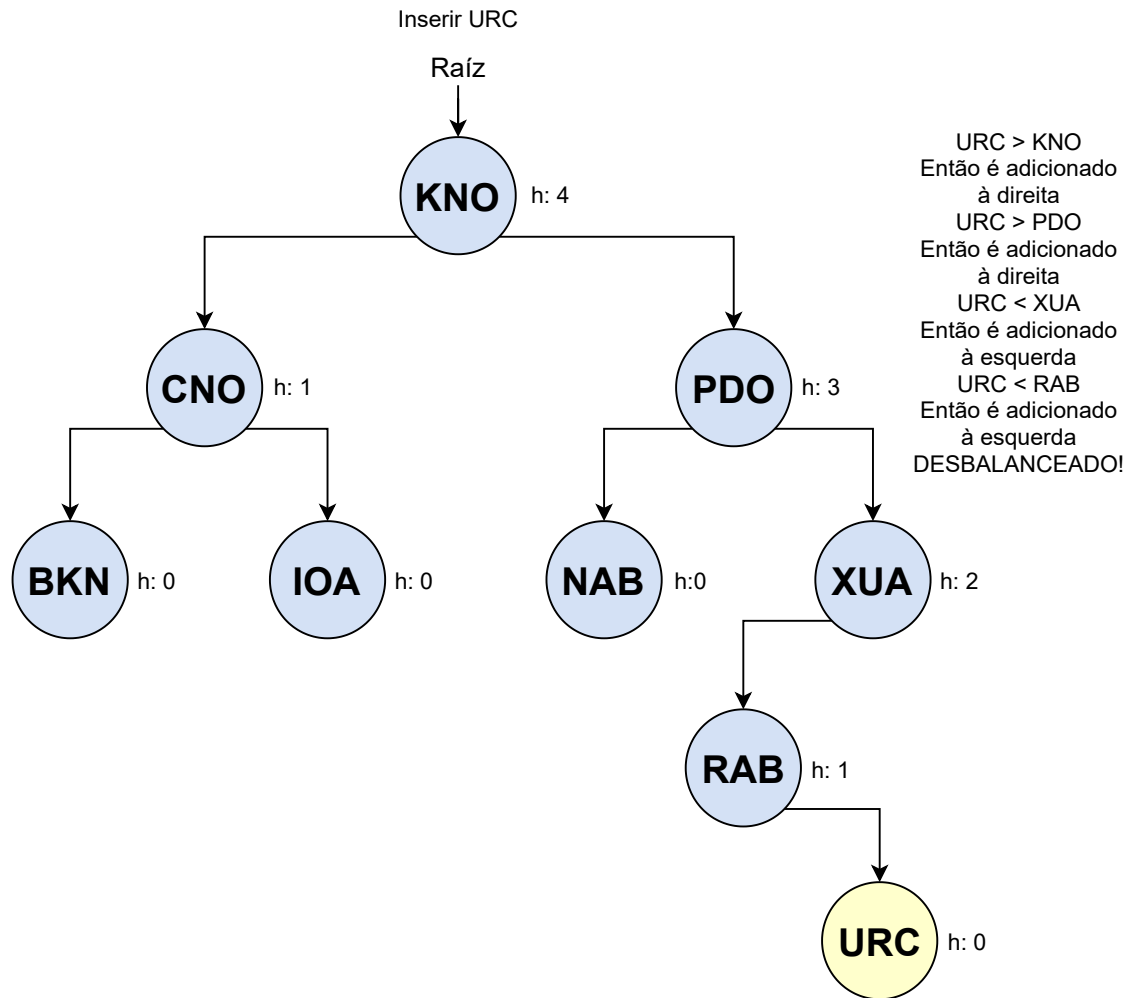
Rotação à direita
necessária

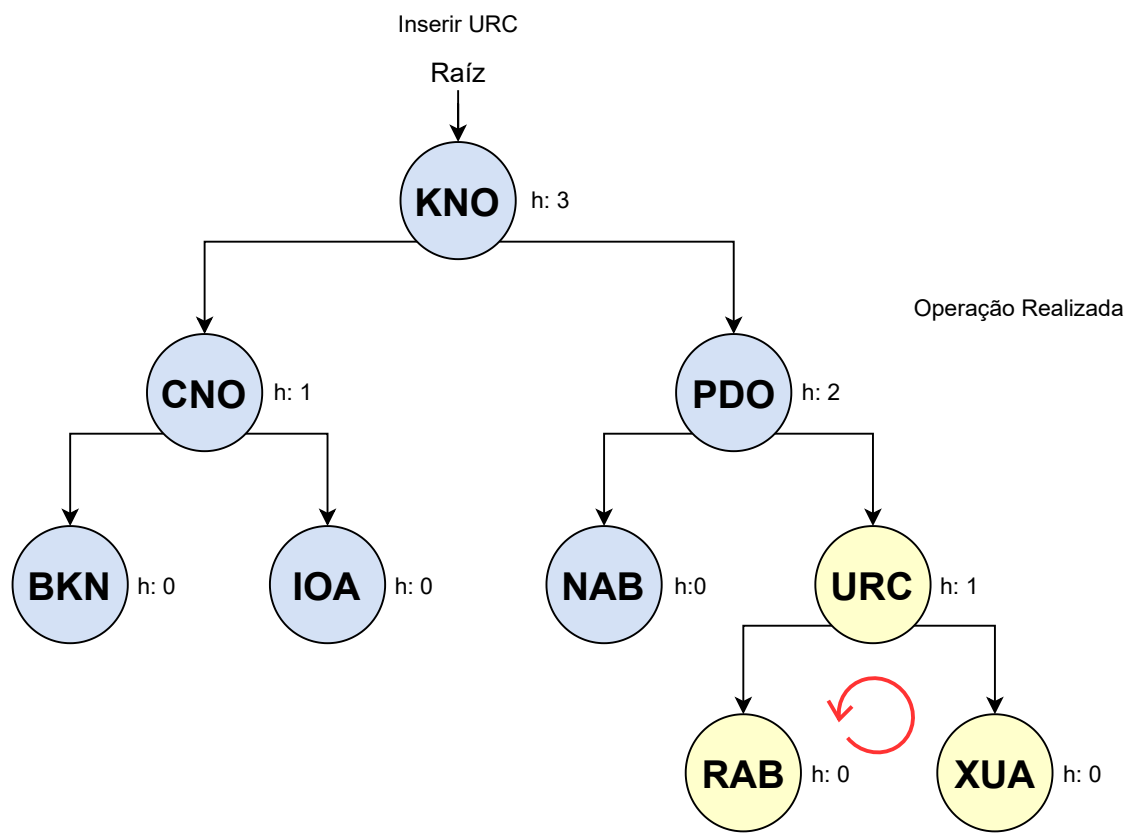
Inserir NAB (3/3)



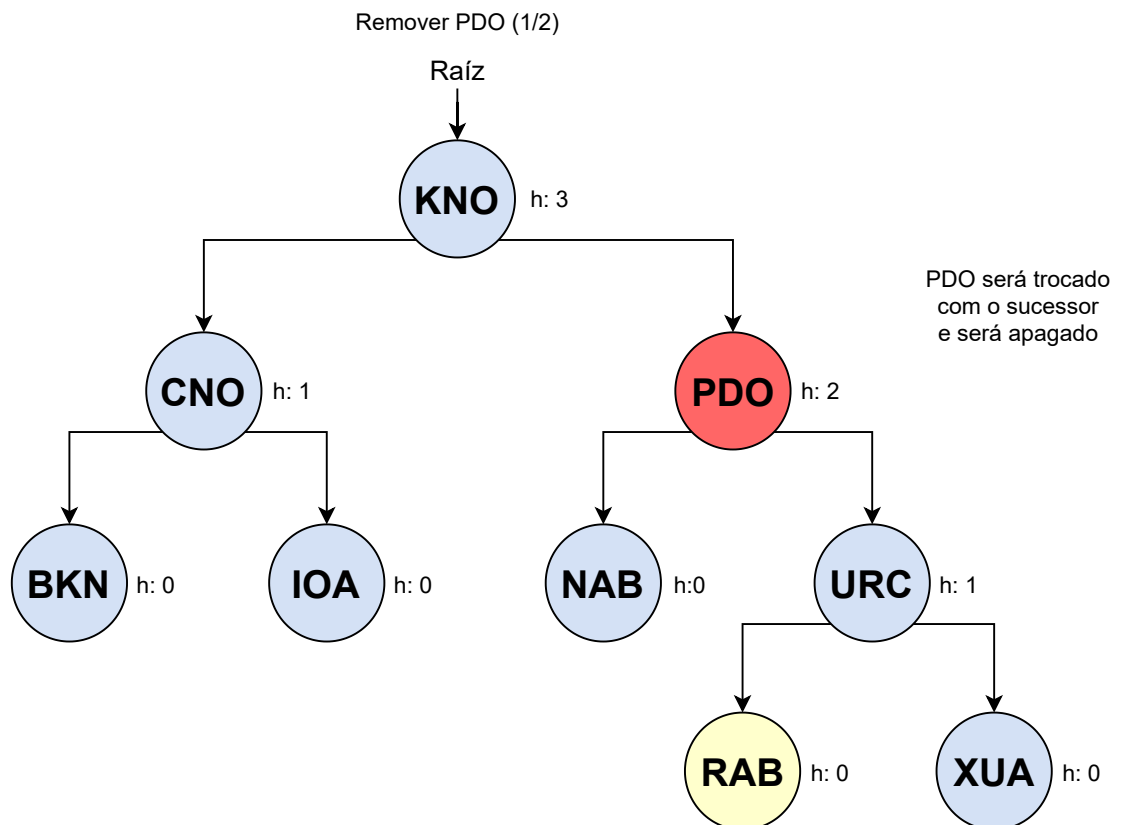
Inserir RAB



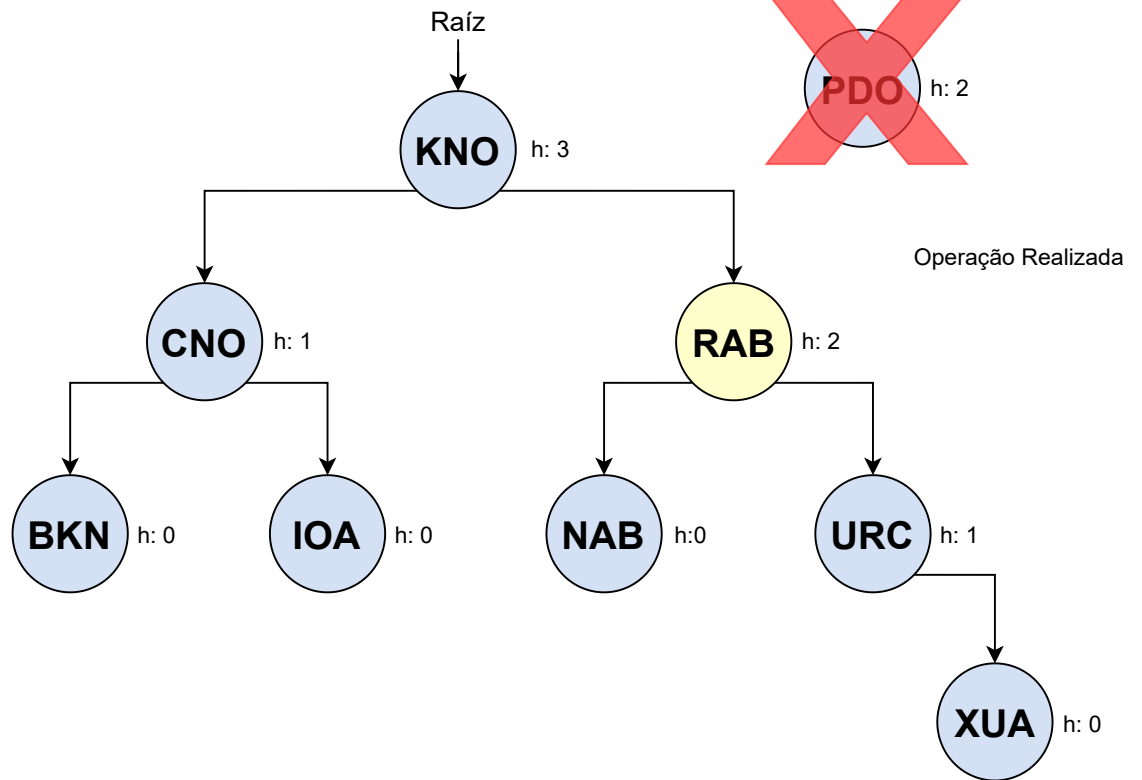




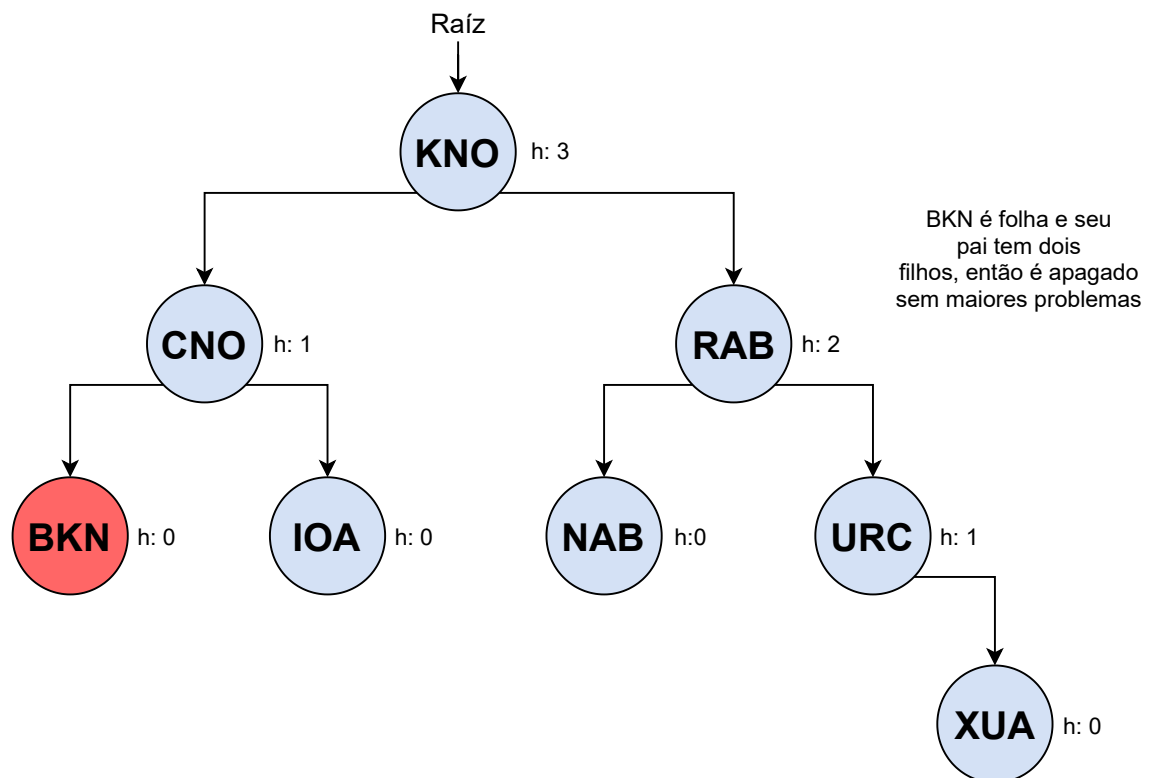
Remover PDO, BKN e KNO

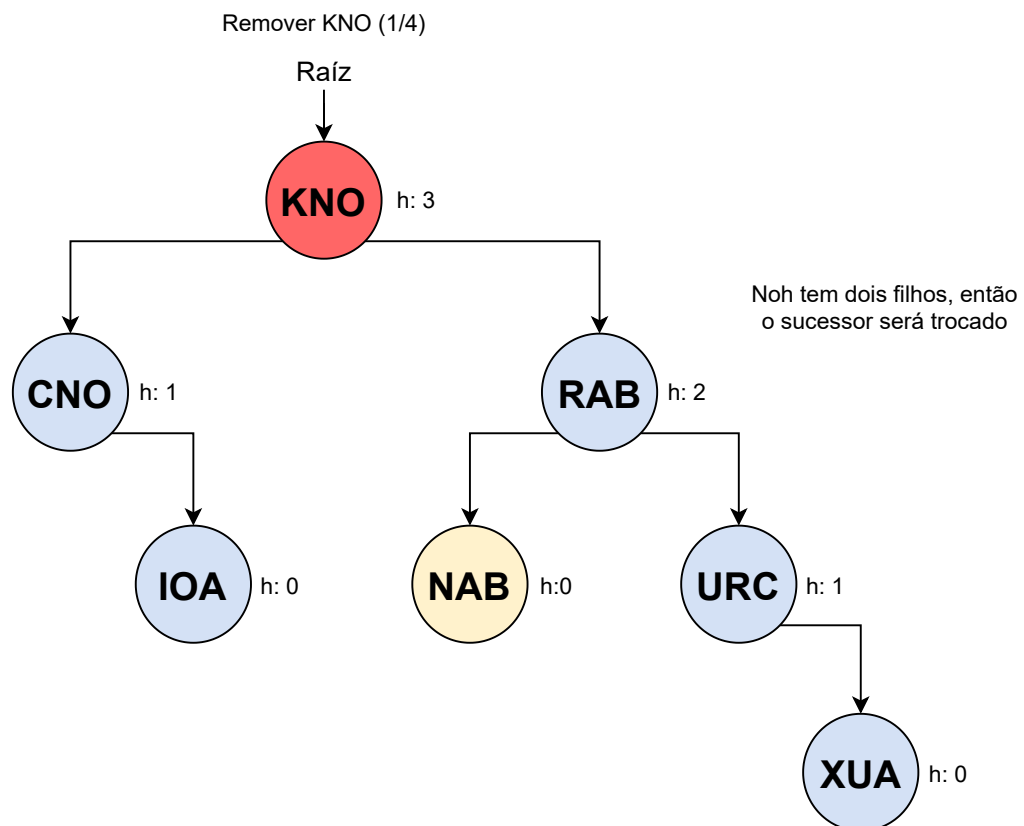
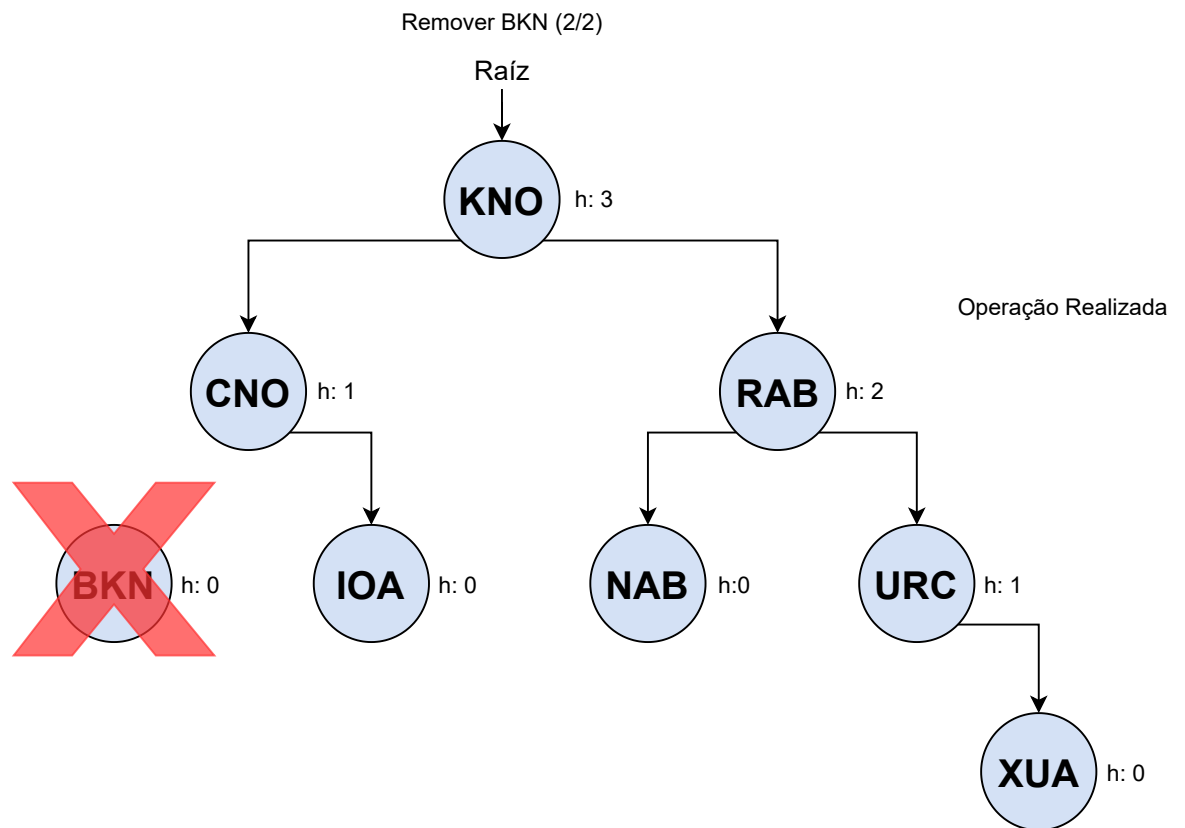


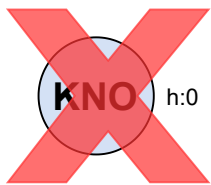
Remover PDO (2/2)



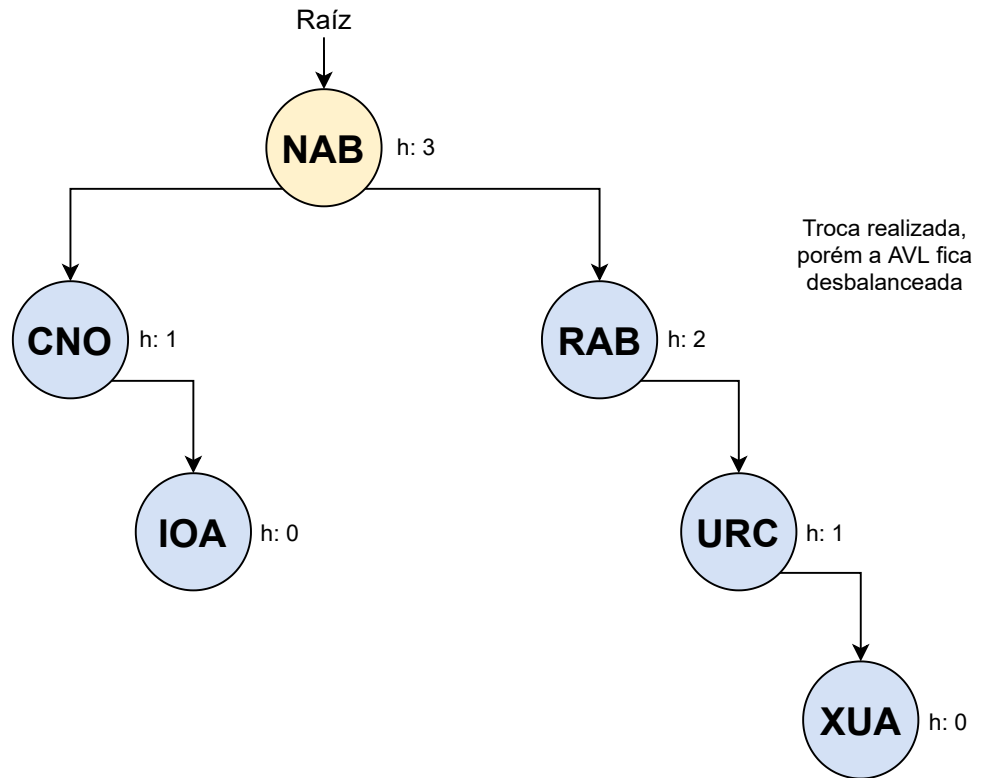
Remover BKN (1/2)



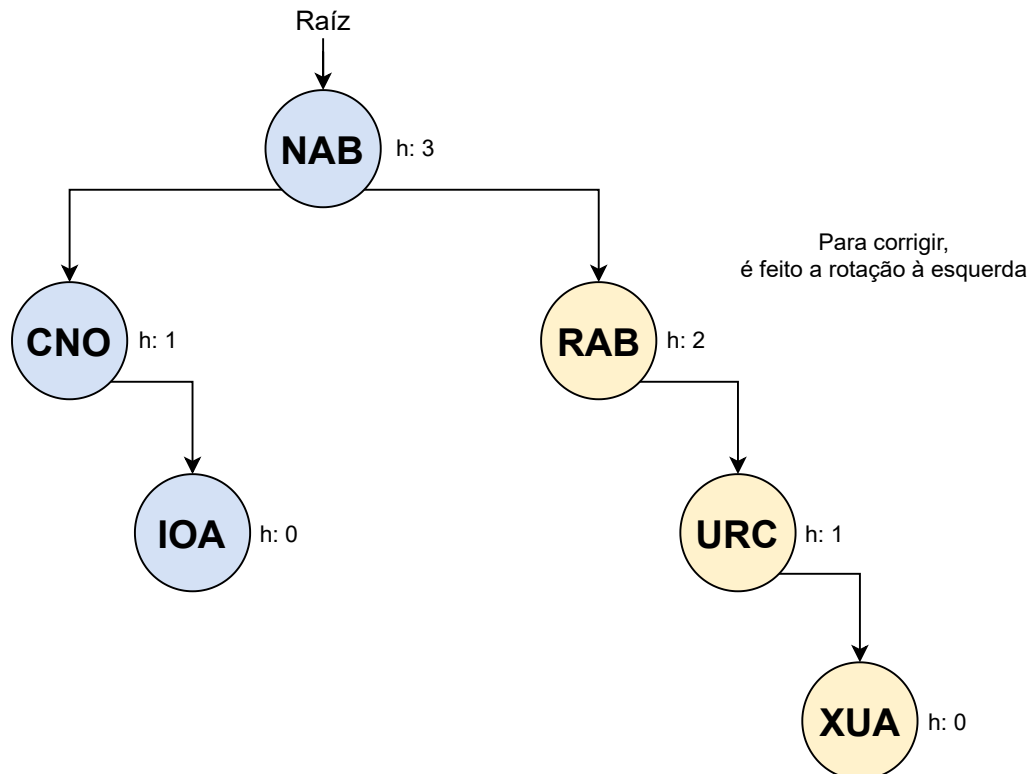




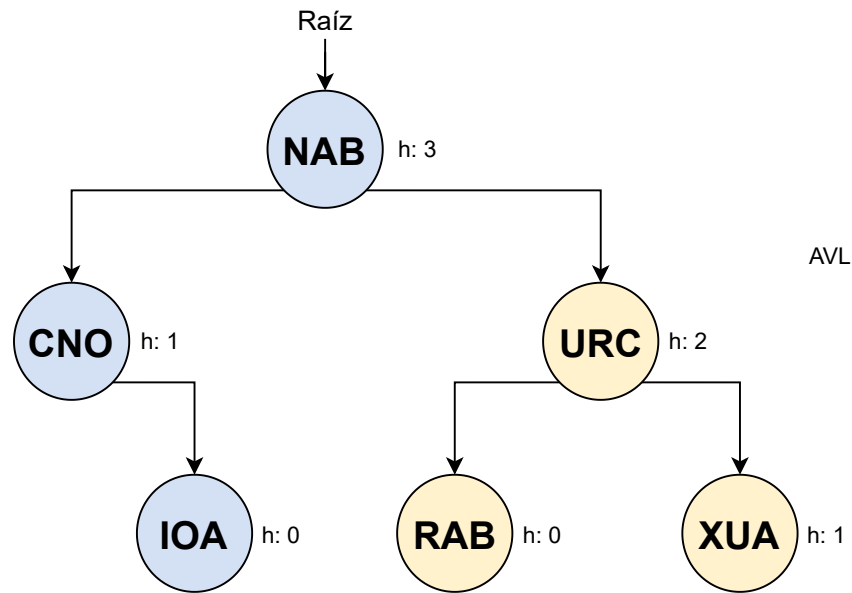
Remover KNO (2/4)



Remover KNO (3/4)



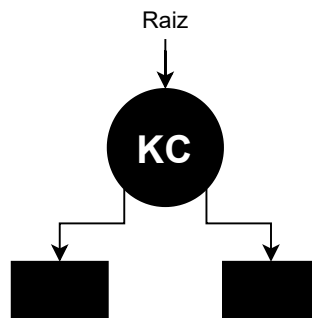
Remover KNO (4/4)



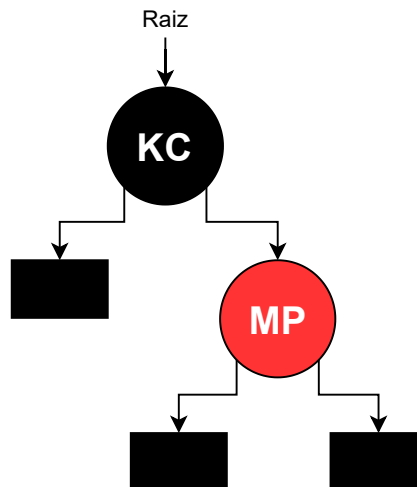
Questão 7

Inserir KC, MP, KA, RB, RK, BT, BN, PI, PG, CF e JF

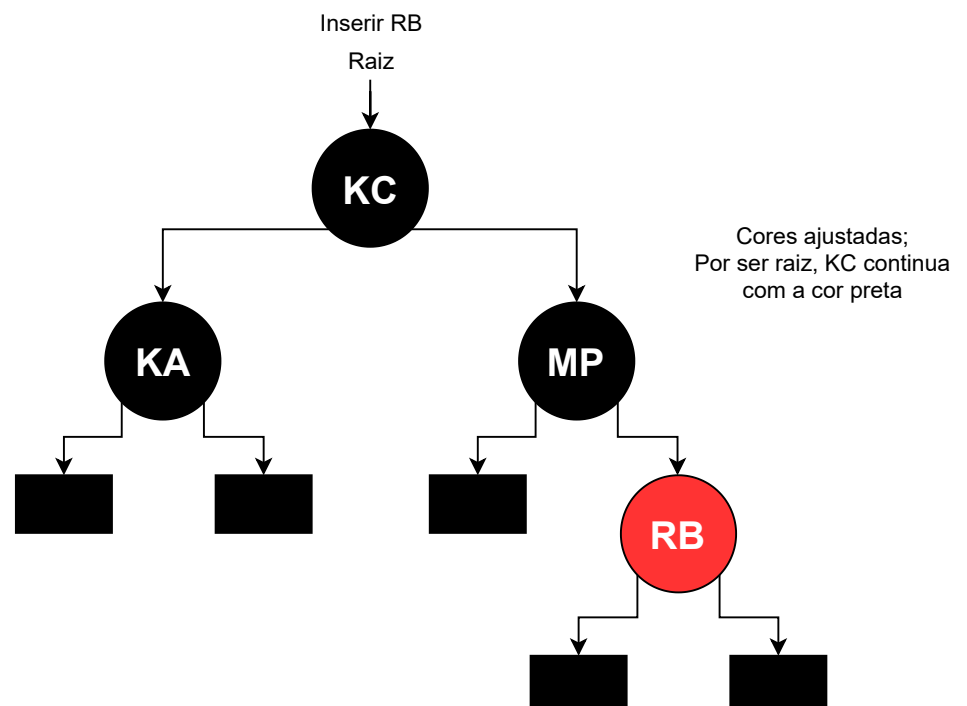
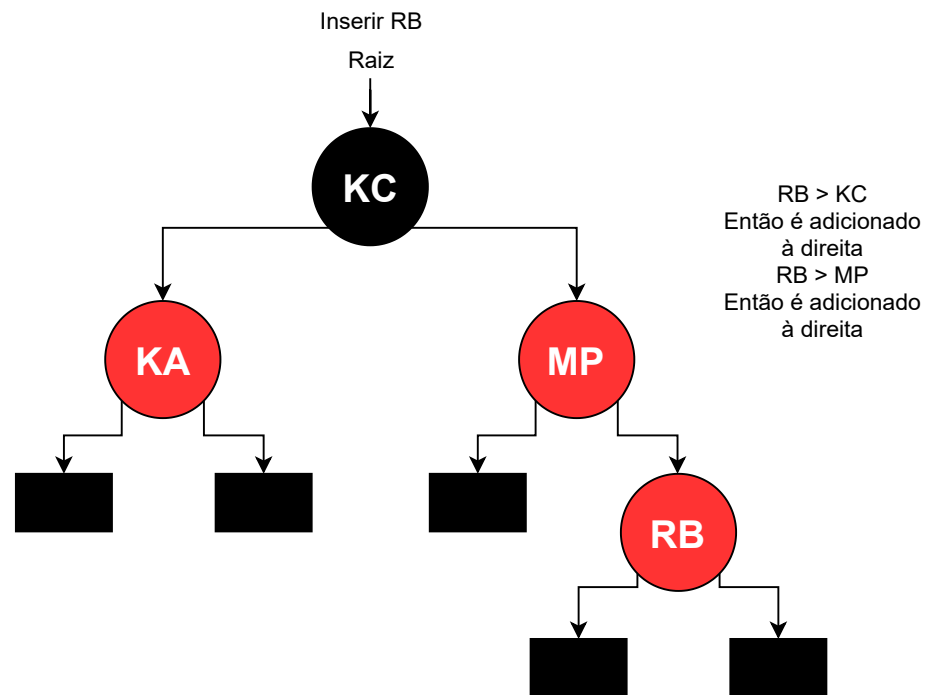
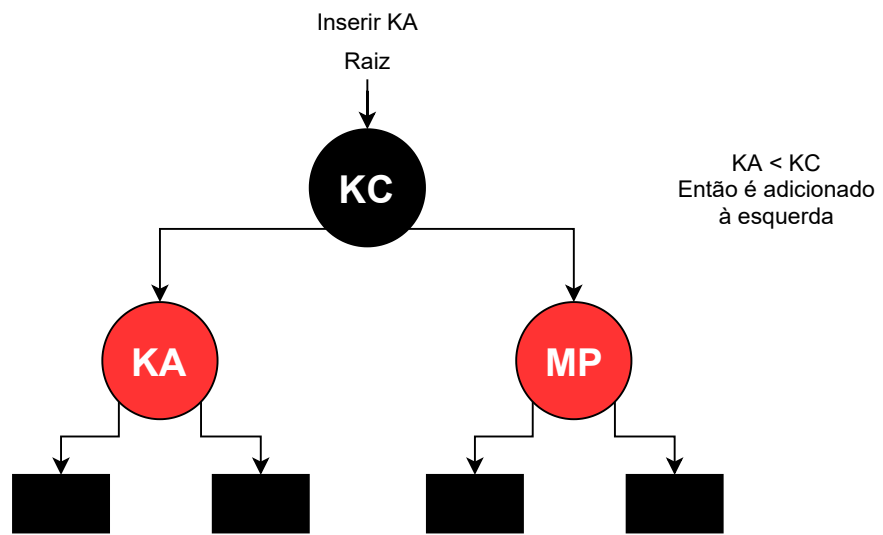
Inserir KC

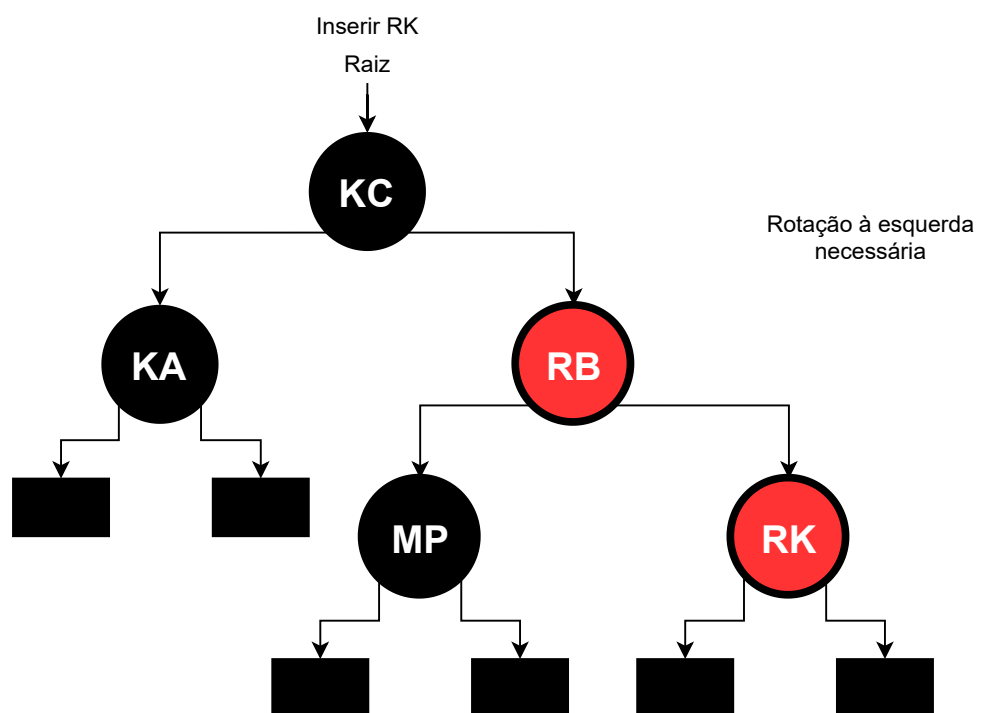
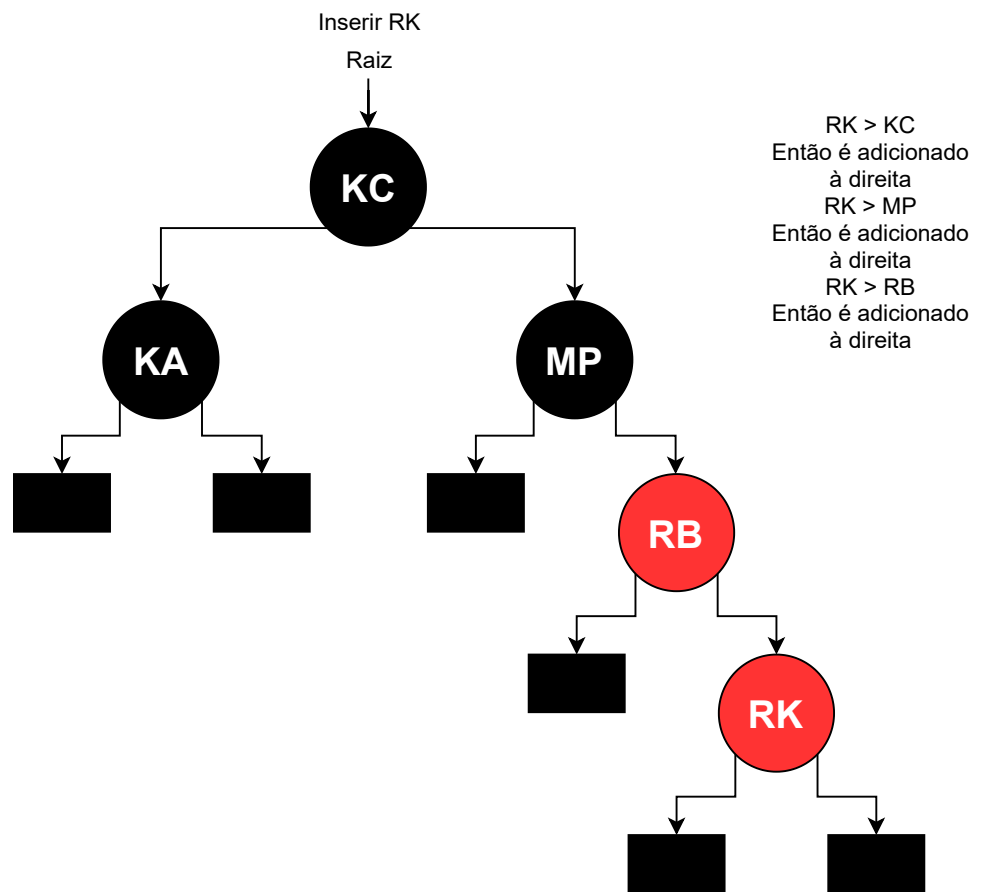


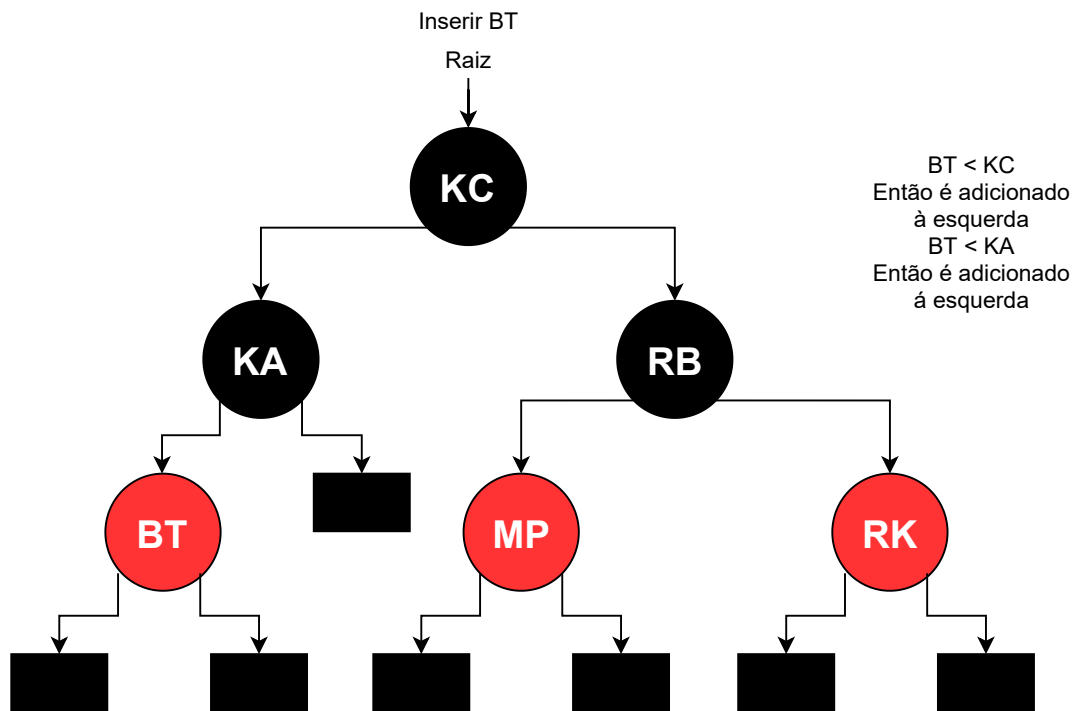
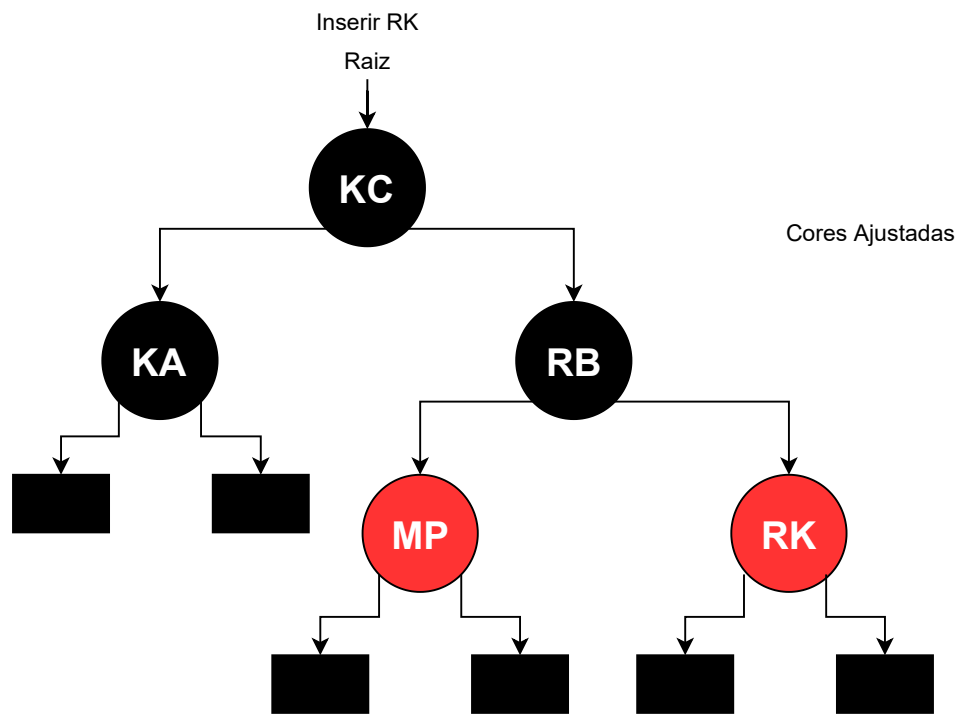
Inserir MP

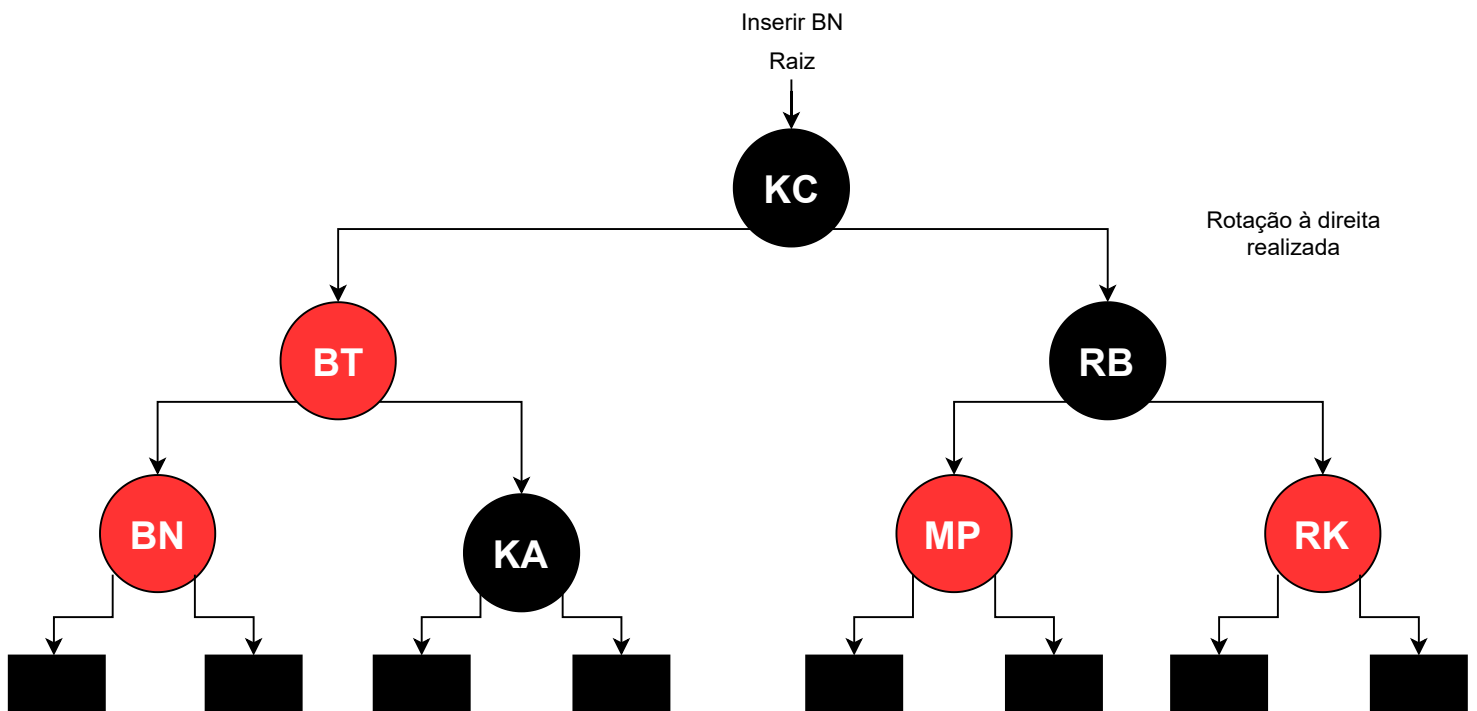
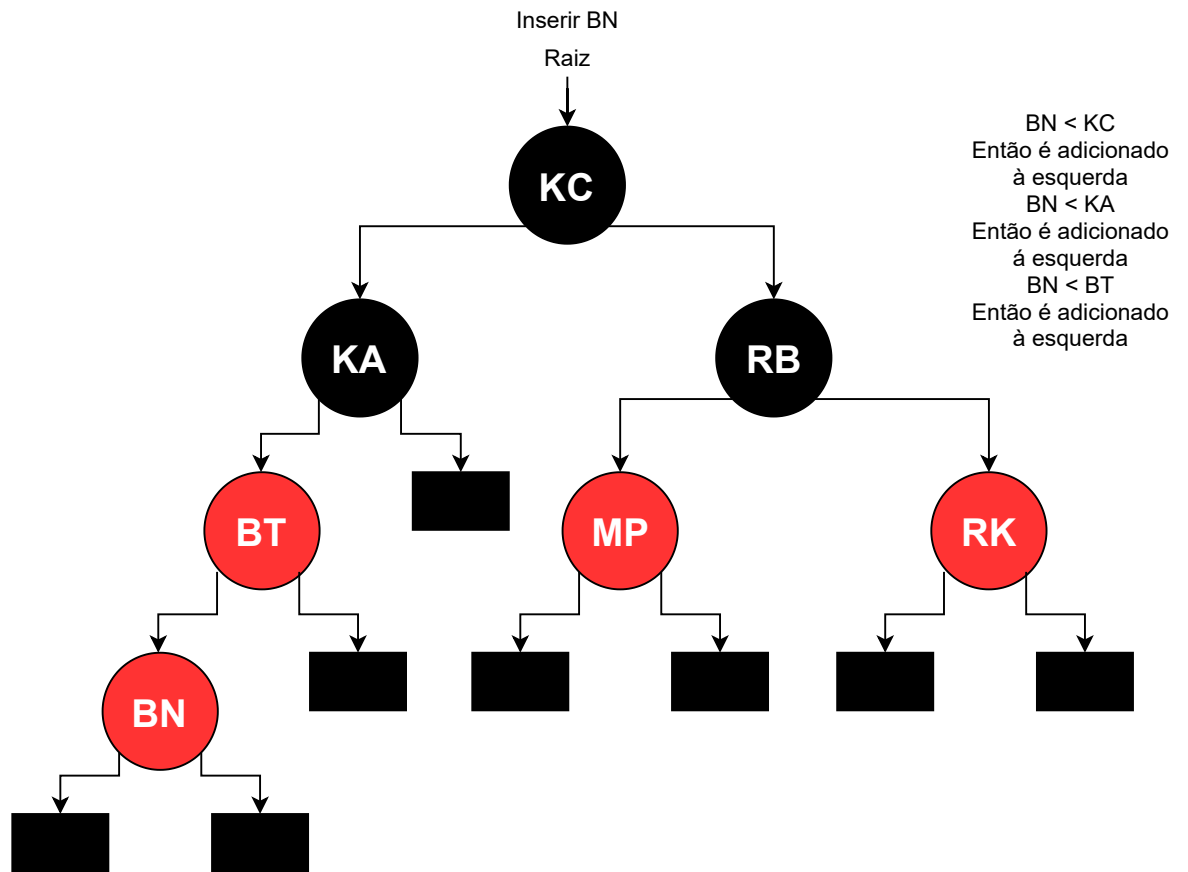


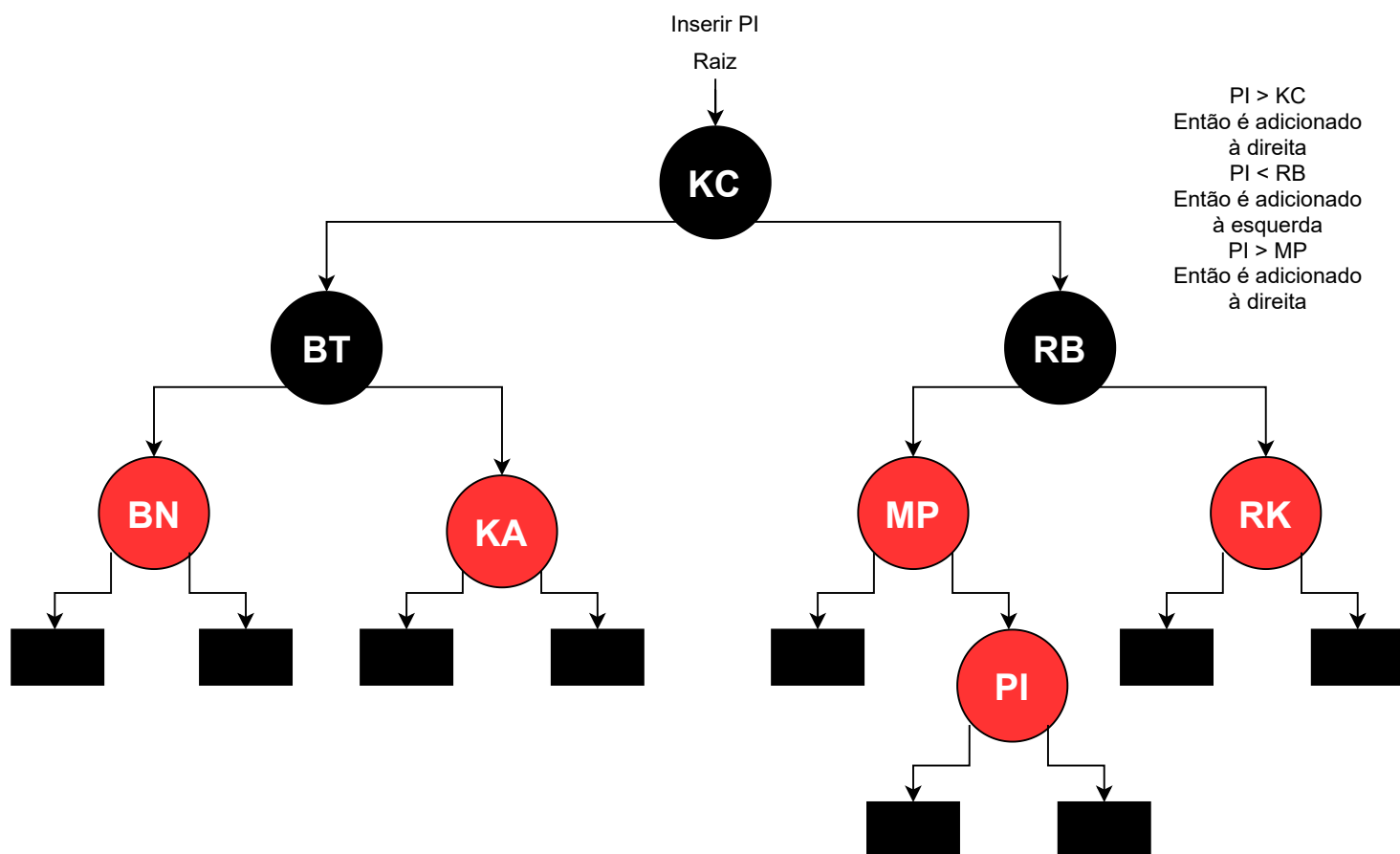
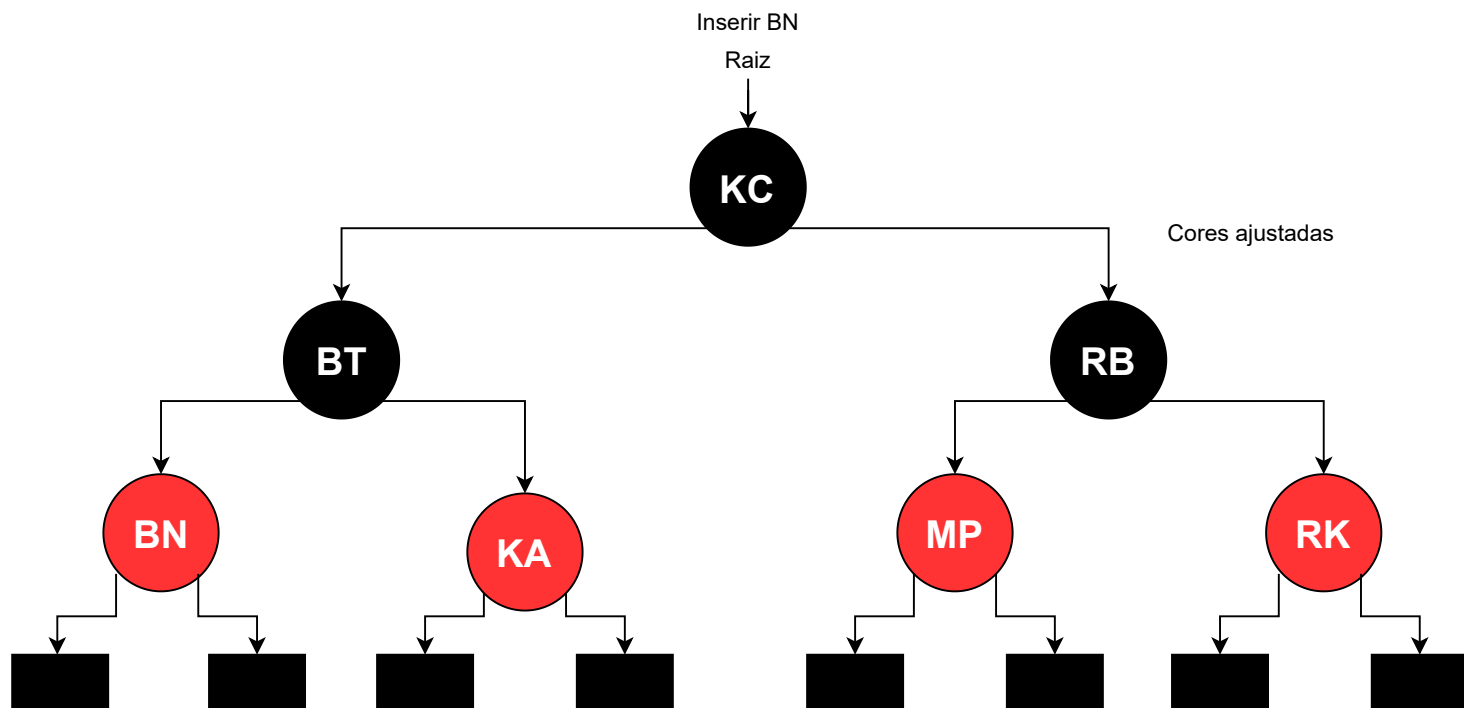
MP > KC
Então é adicionado
à direita

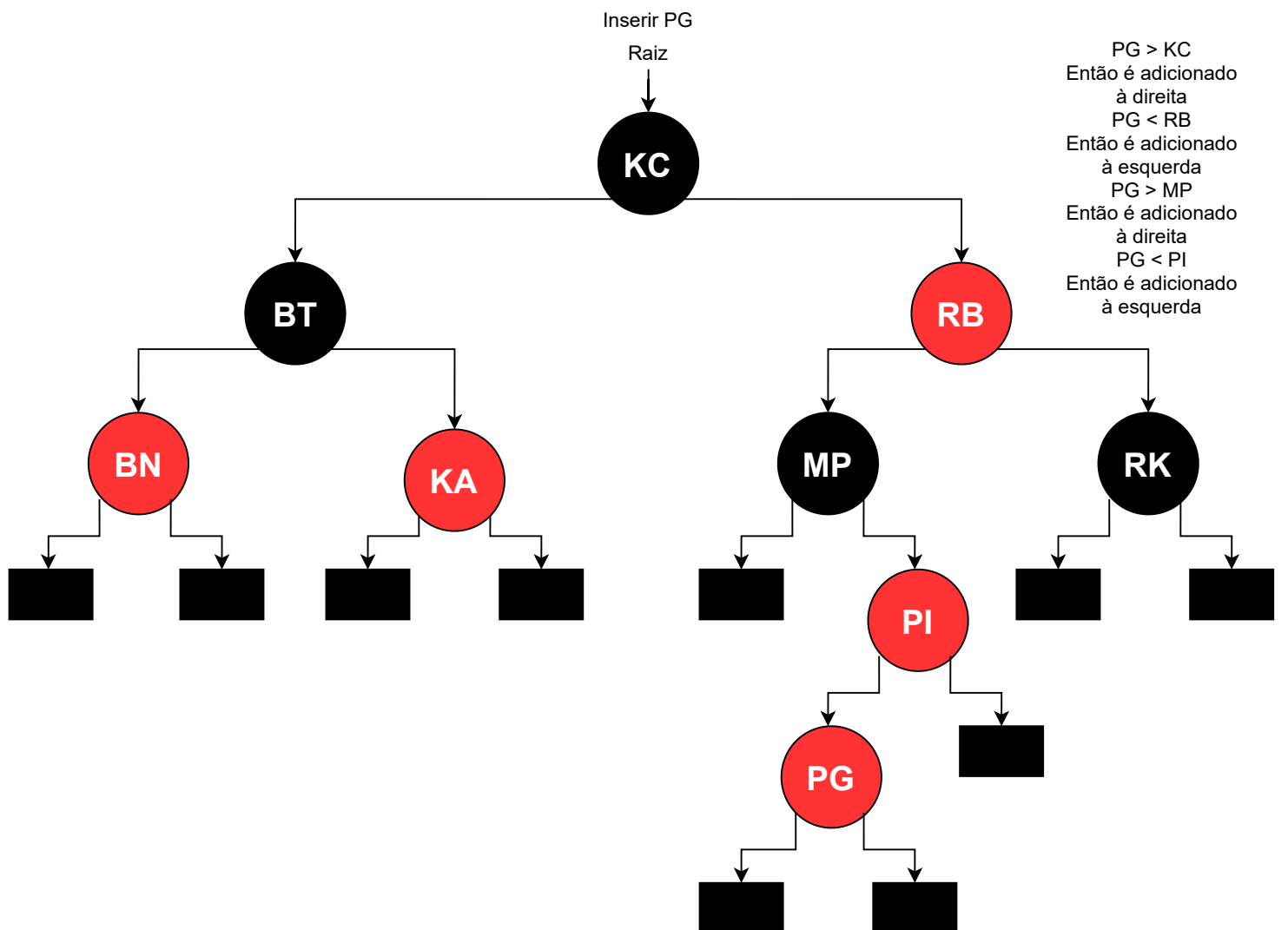
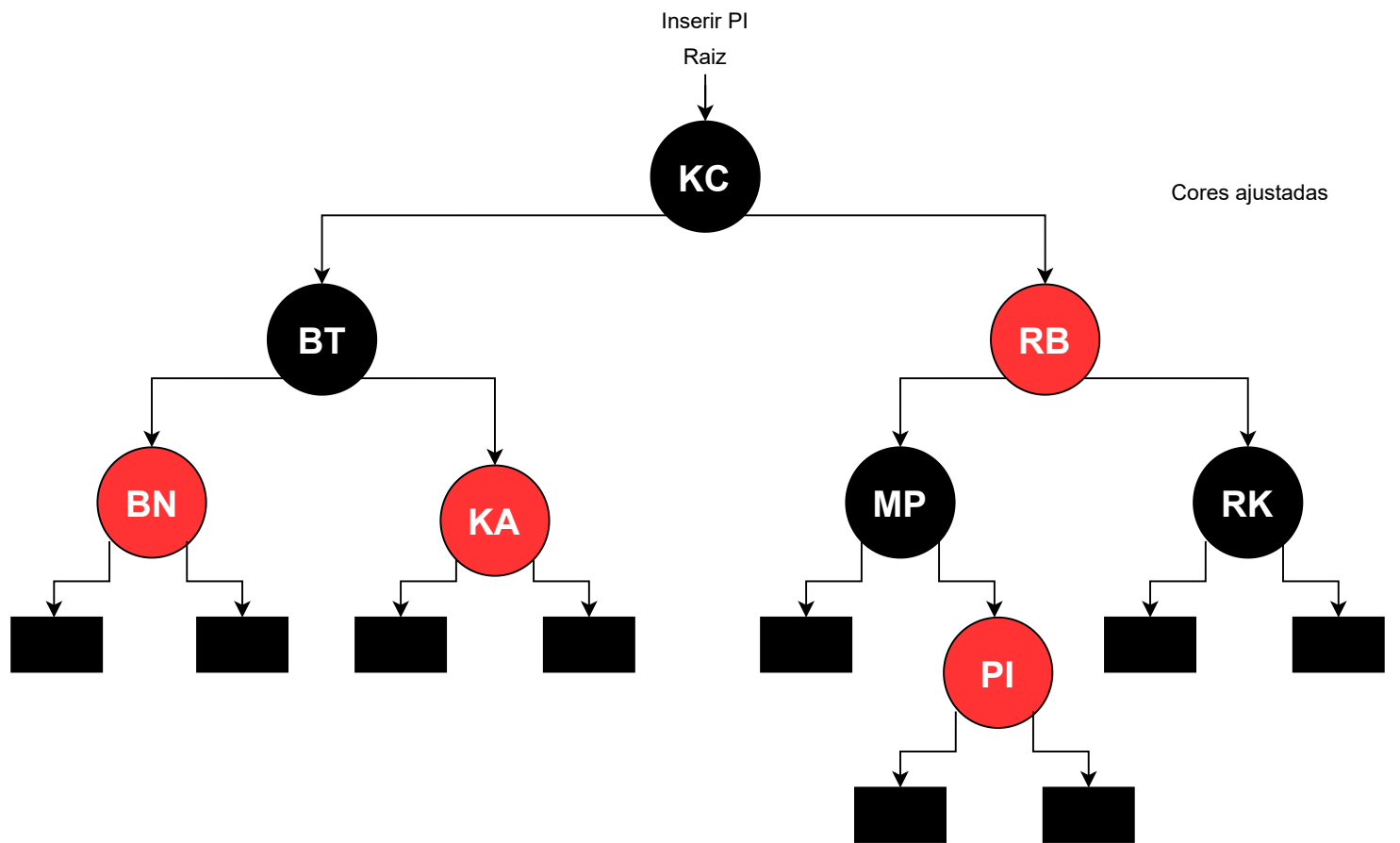


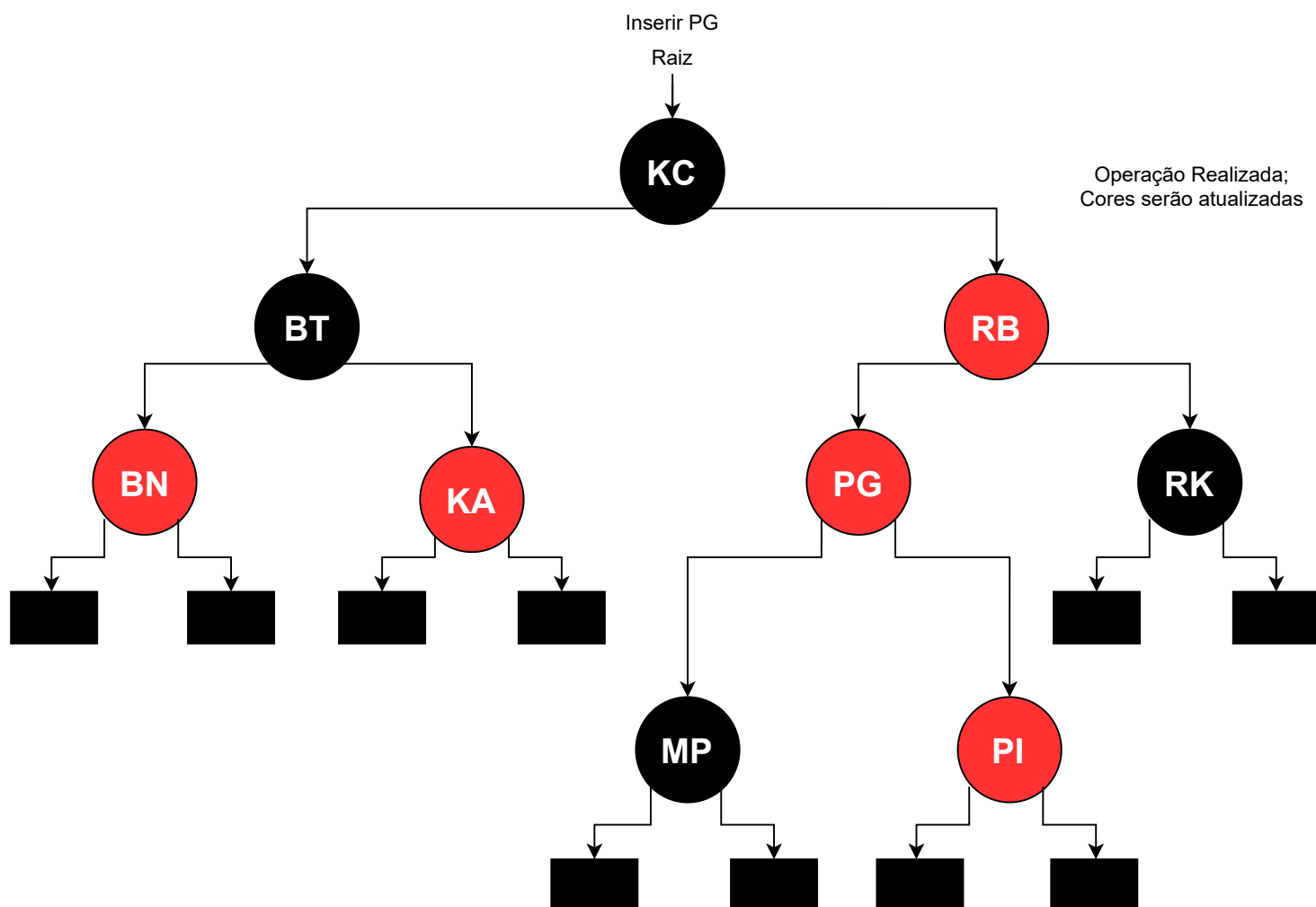
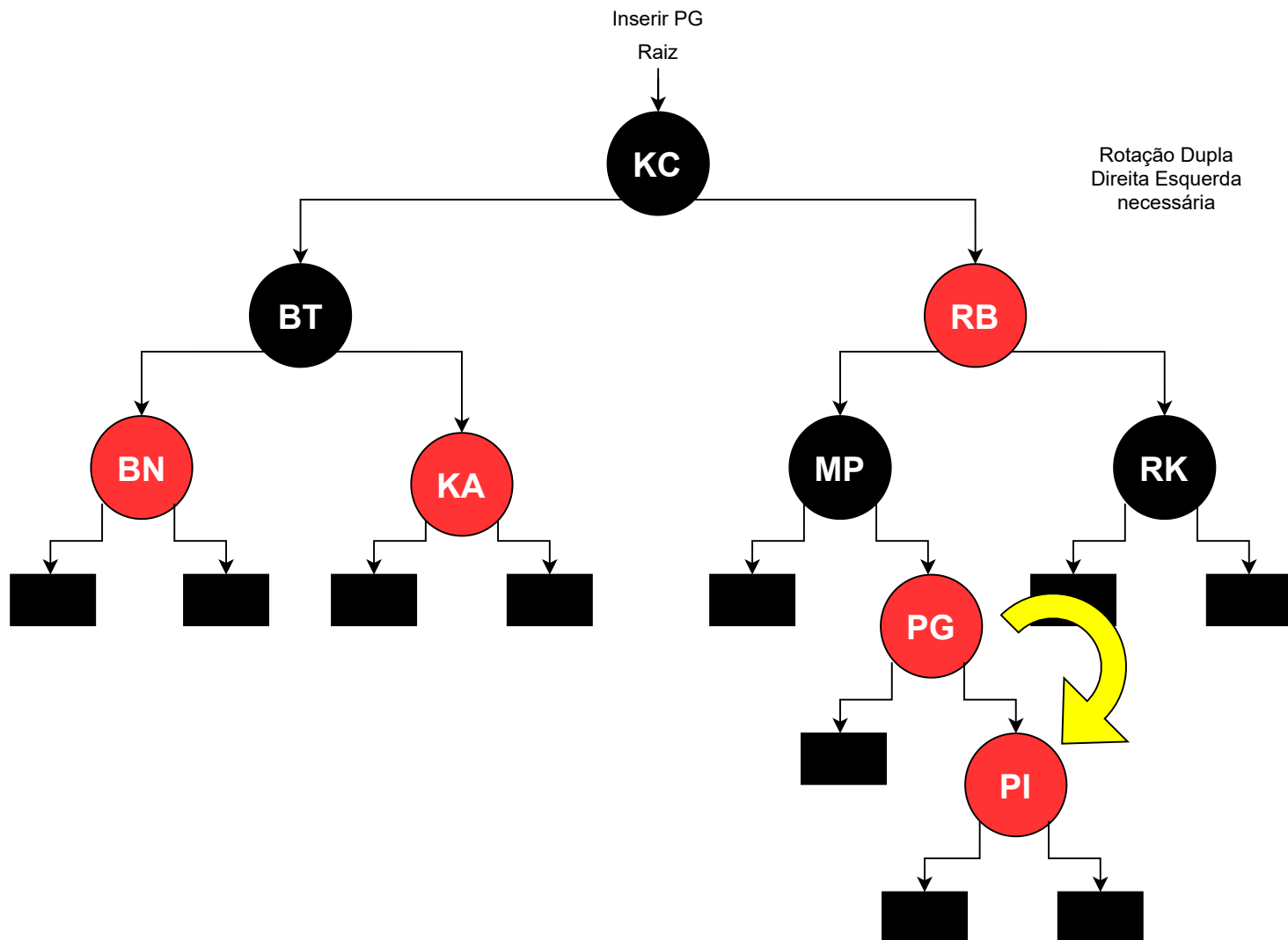


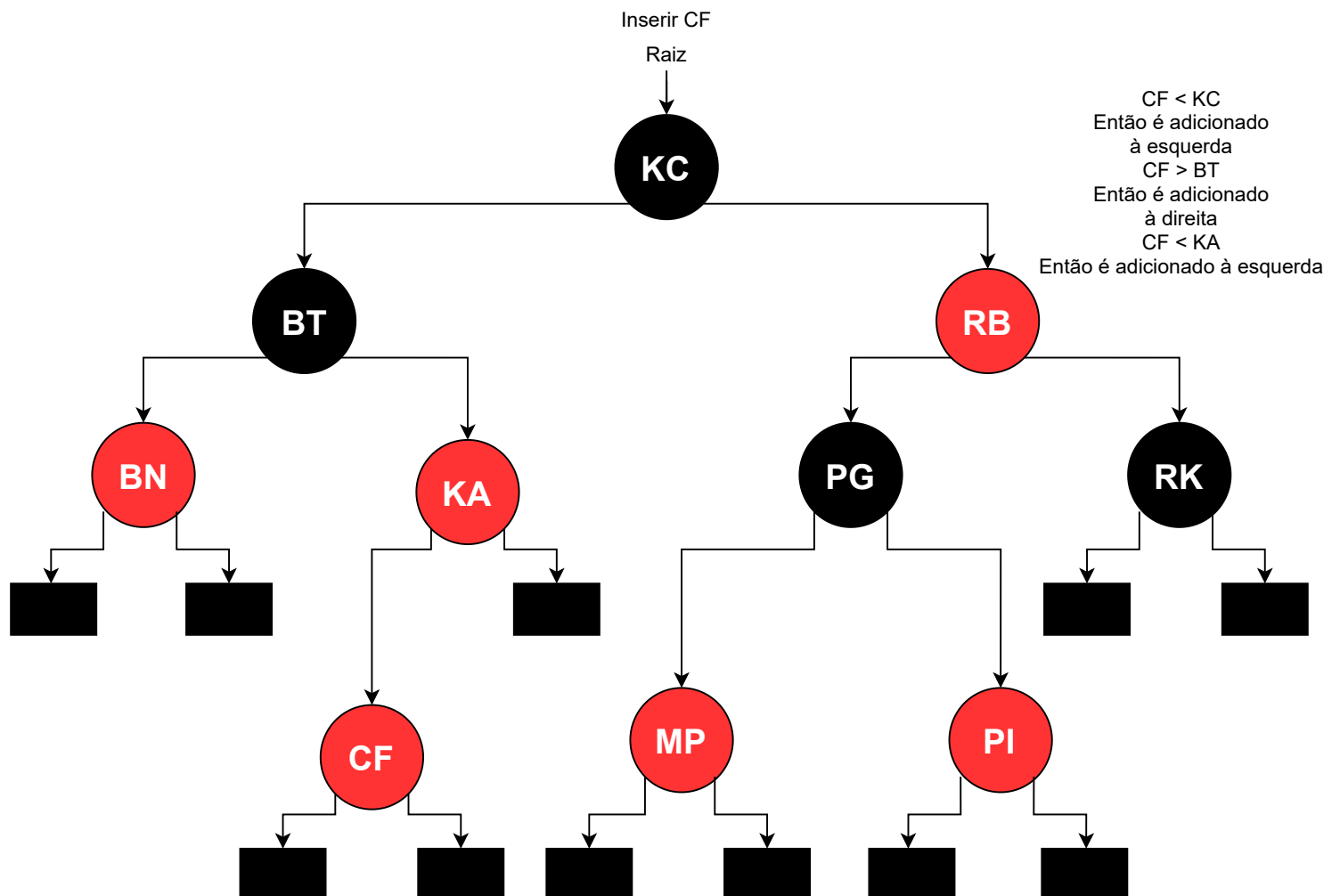
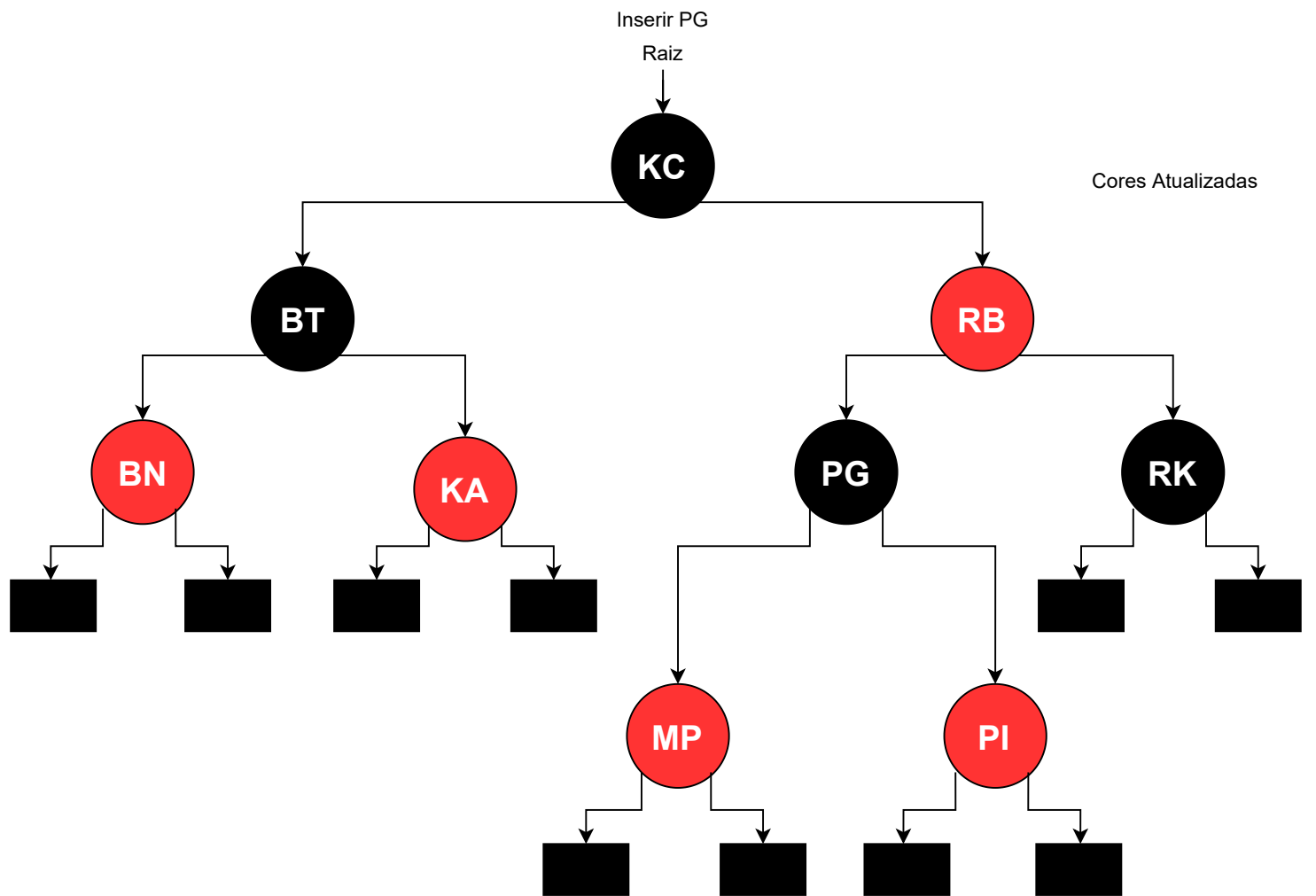


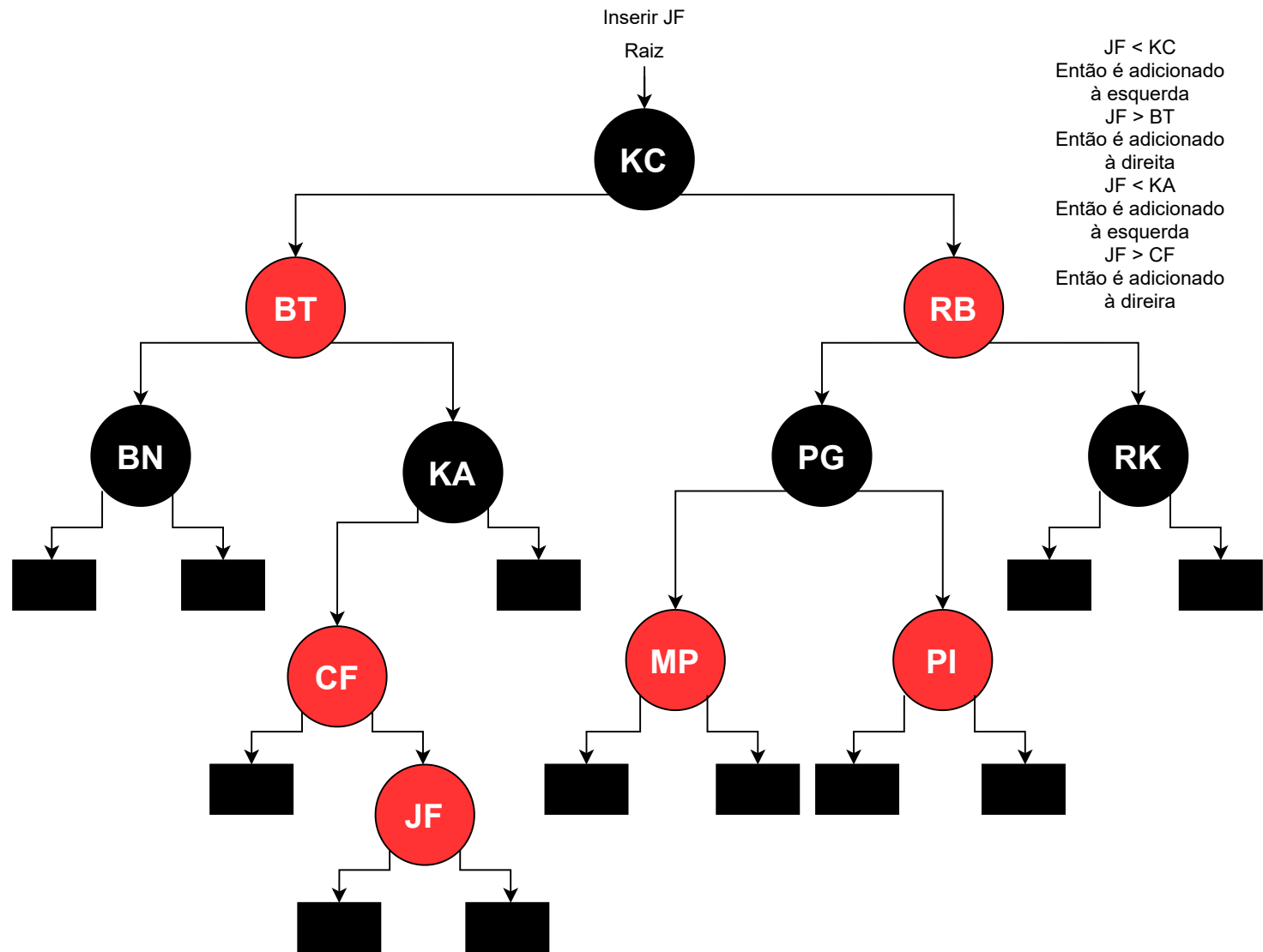
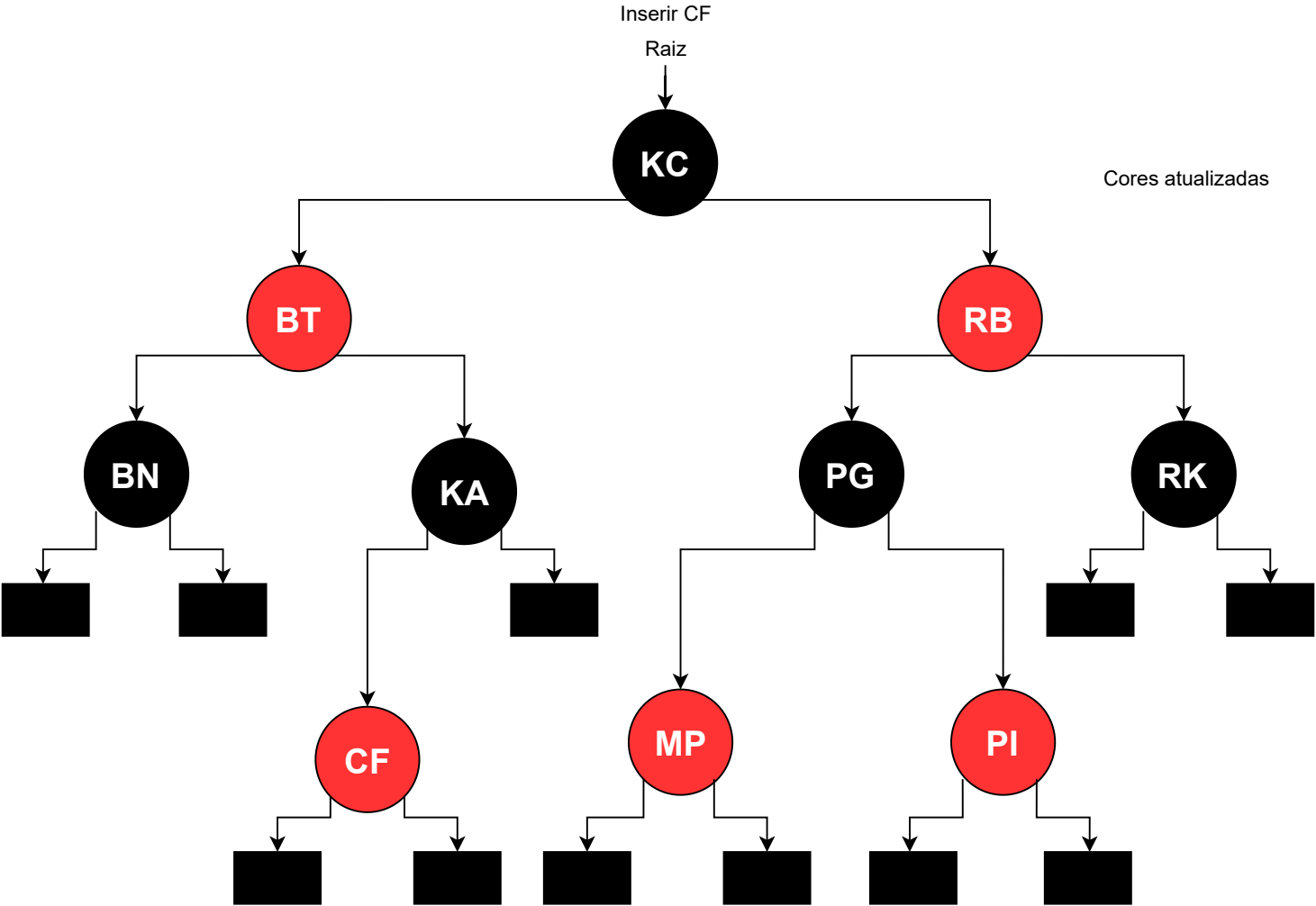


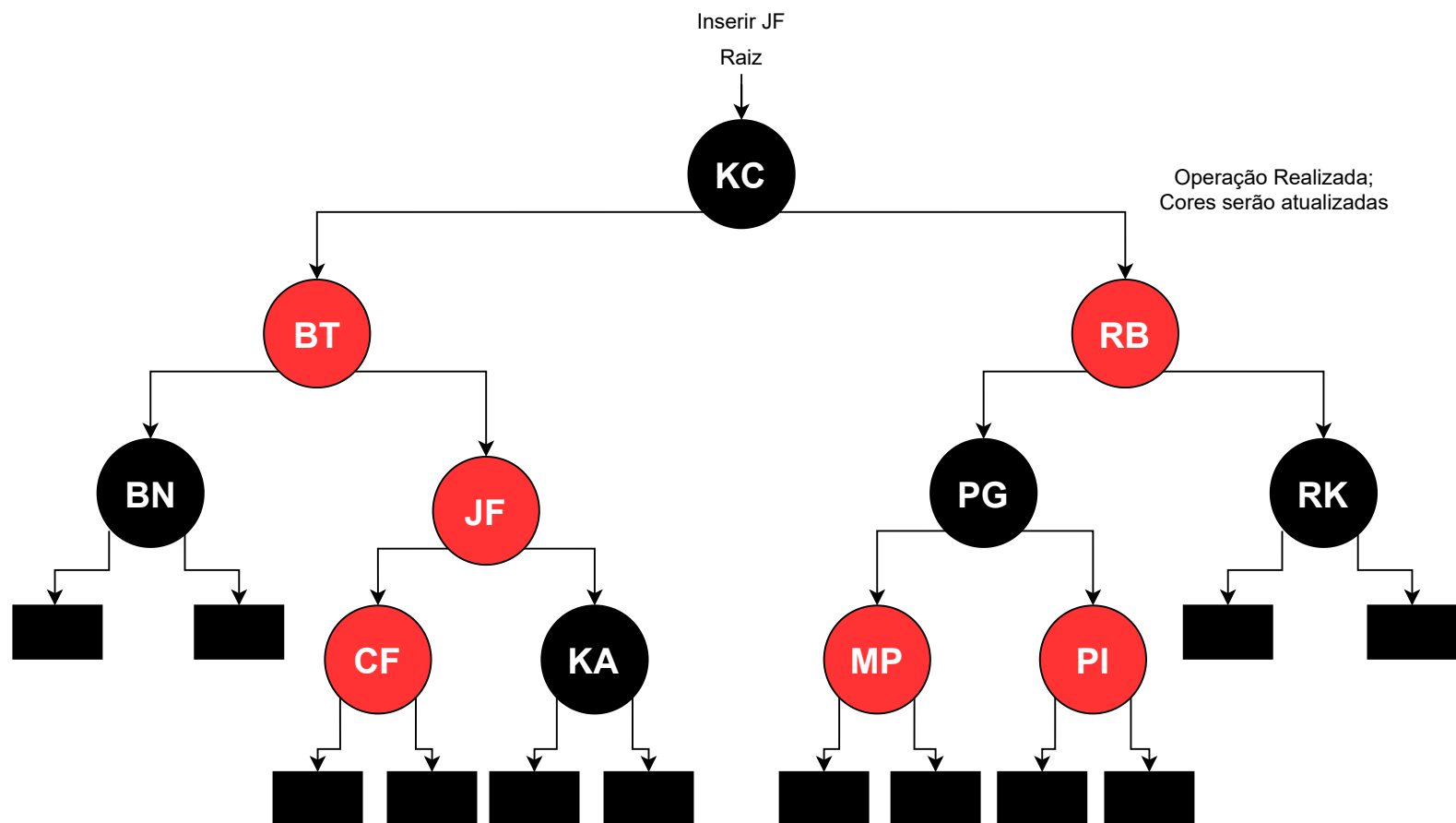
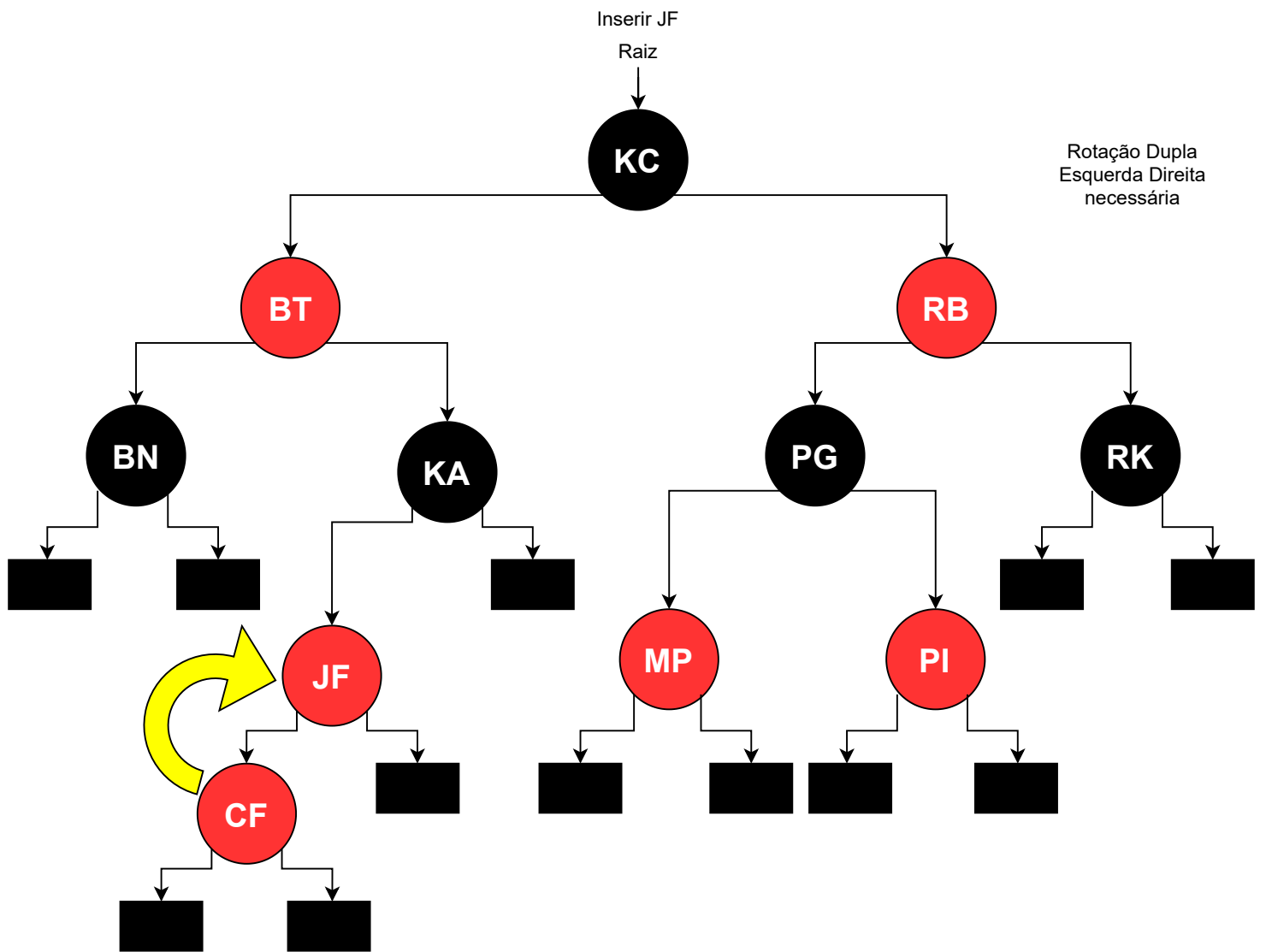












Inserir JF

Raiz

Cores Atualizadas;

Árvore Finalizada

