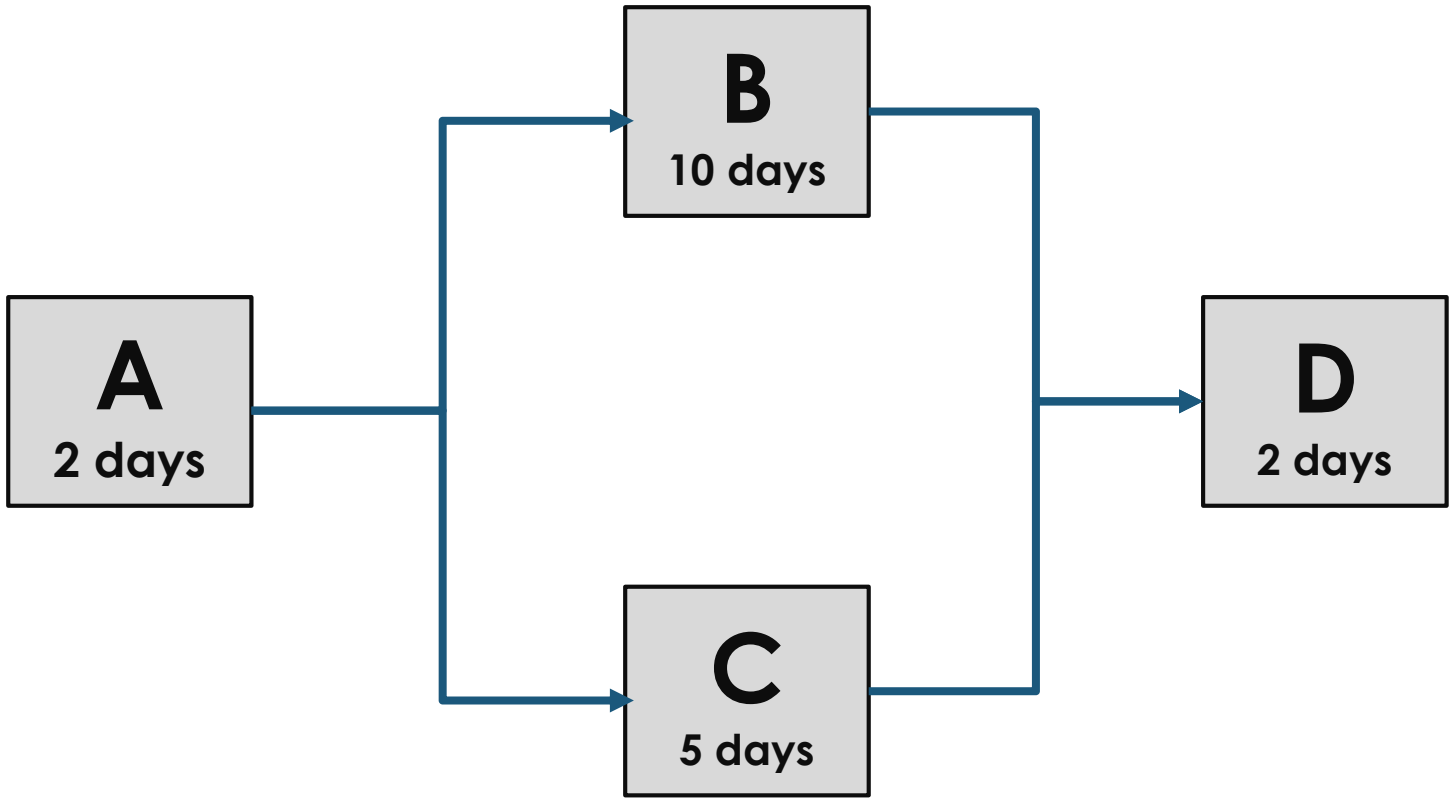
# What is the Critical path?




2 possible paths

✓ ABD = 2+10+2=14

Ø ACD = 2+5+2 = 9

**Critical Path = Longest path**

# Zero Day Method

**Forward Pass**
ES = Early Start
EF = Early finish = ES + Duration

1 Add ES to the top left of every block

2 Add EF to the top right of every block

3 Write 0 under the $ES_A$

4 Calculate $EF_A$ by using the formula $EF_A = ES_A + Duration$
$= 0 + 2 = 2$ and write it under $EF_A$

5 $ES_B = EF_A$ so you can just copy the value over

6 Repeat steps 4 and 5 for all others
(note: $ES_D$ =largest between $EF_B$ and $EF_C$ due to convergence)

**Backward Pass**
LF = Late finish
EF = Early Finish = LF-Duration

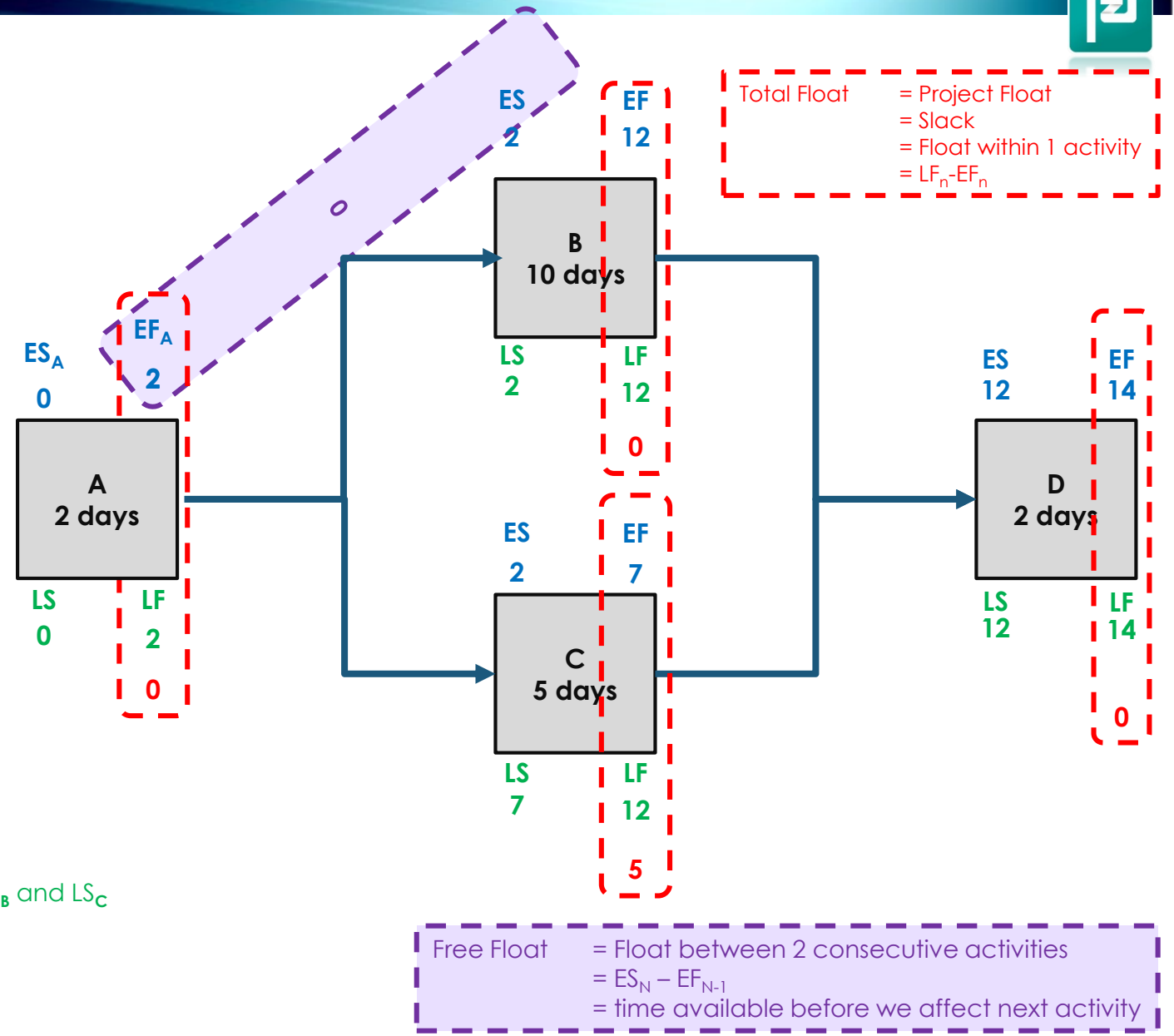
7 ADD LS and LF at the bottom left and right of each activity

8 Note **$LF_D = EF_D$**

9 Calculate ESD and write it

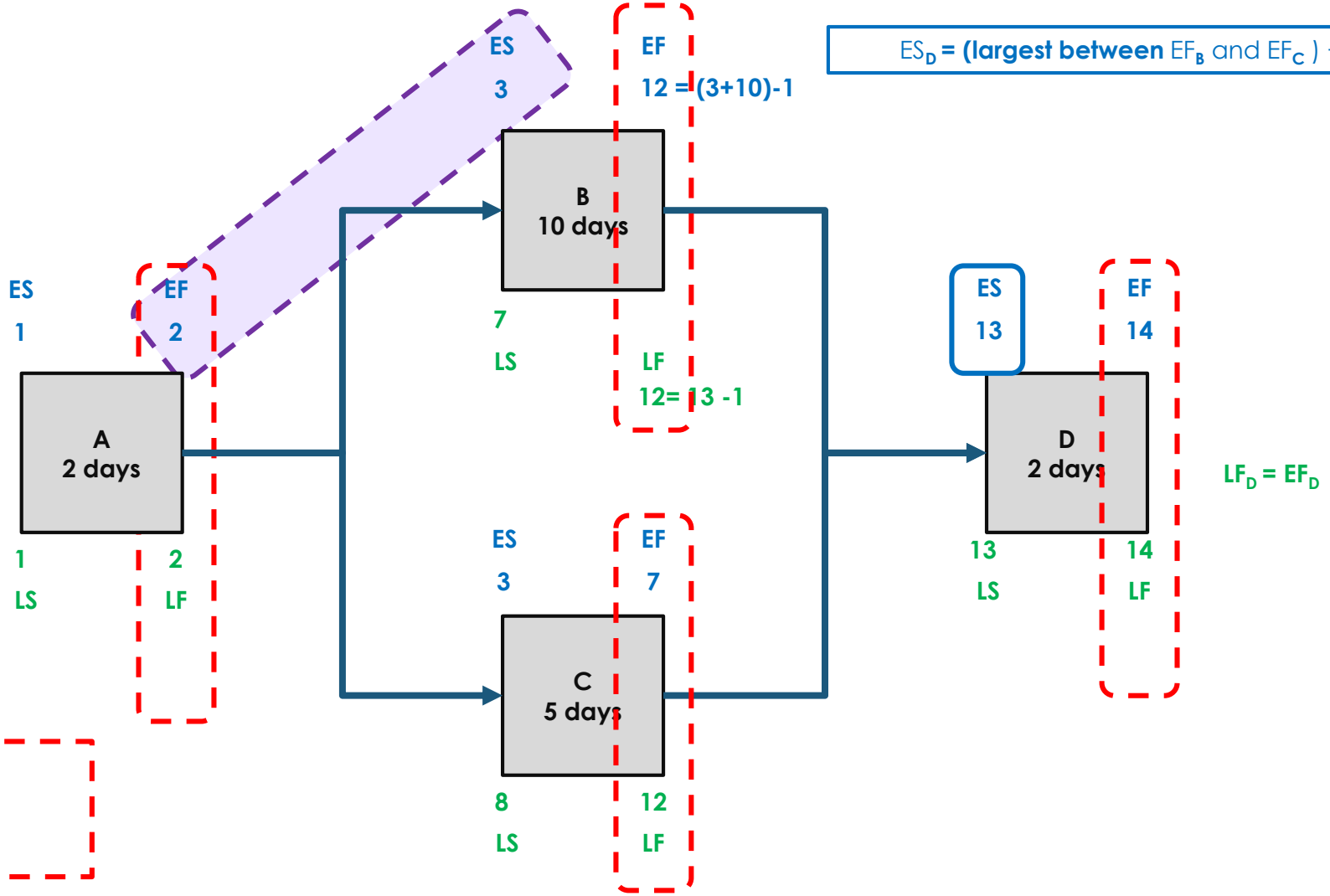
10 $LS_D = LF_B$ and $LF_C$

11 Use formula to repeat for other activities (note $LF_A$ **=smallest between** $LS_B$ and $LS_C$



# One day Method

**Forward Pass**
ES=Early Start
EF=Early finish=ES + Duration - 1




$ES_D$ = **(largest between** $EF_B$ and $EF_C$ ) +1

$LF_D = EF_D$

$LF_A$ =**smallest between** $LS_B$ and $LS_C$

Total Float = Project Float
= Slack
= Float within 1 activity
= $LF_n$-$EF_n$

Free Float = Float between 2 consecutive activities
= $ES_N$ – $EF_{N-1}$
= time available before we affect next activity

**Backward Pass**
LF = Late finish
EF = LF-Duration