

$$\begin{aligned} X &= Y + Z; \quad \text{--- ①} \\ P &= X + Q; \\ X &= a + b; \quad \text{--- ②} \end{aligned}$$

$$\begin{aligned} X_1 &= Y + Z; \\ P &= X_1 + Q; \\ X_2 &= a + b; \end{aligned}$$

Rate monotonic Scheduling

Sufficient condition

$$U = \sum_{i=1}^n \frac{C_i}{D_i} \leq n \cdot (2^{1/n} - 1)$$

EXECUTION
OR
CPU

PROCESSOR
UTILIZATION

Deadline
Period

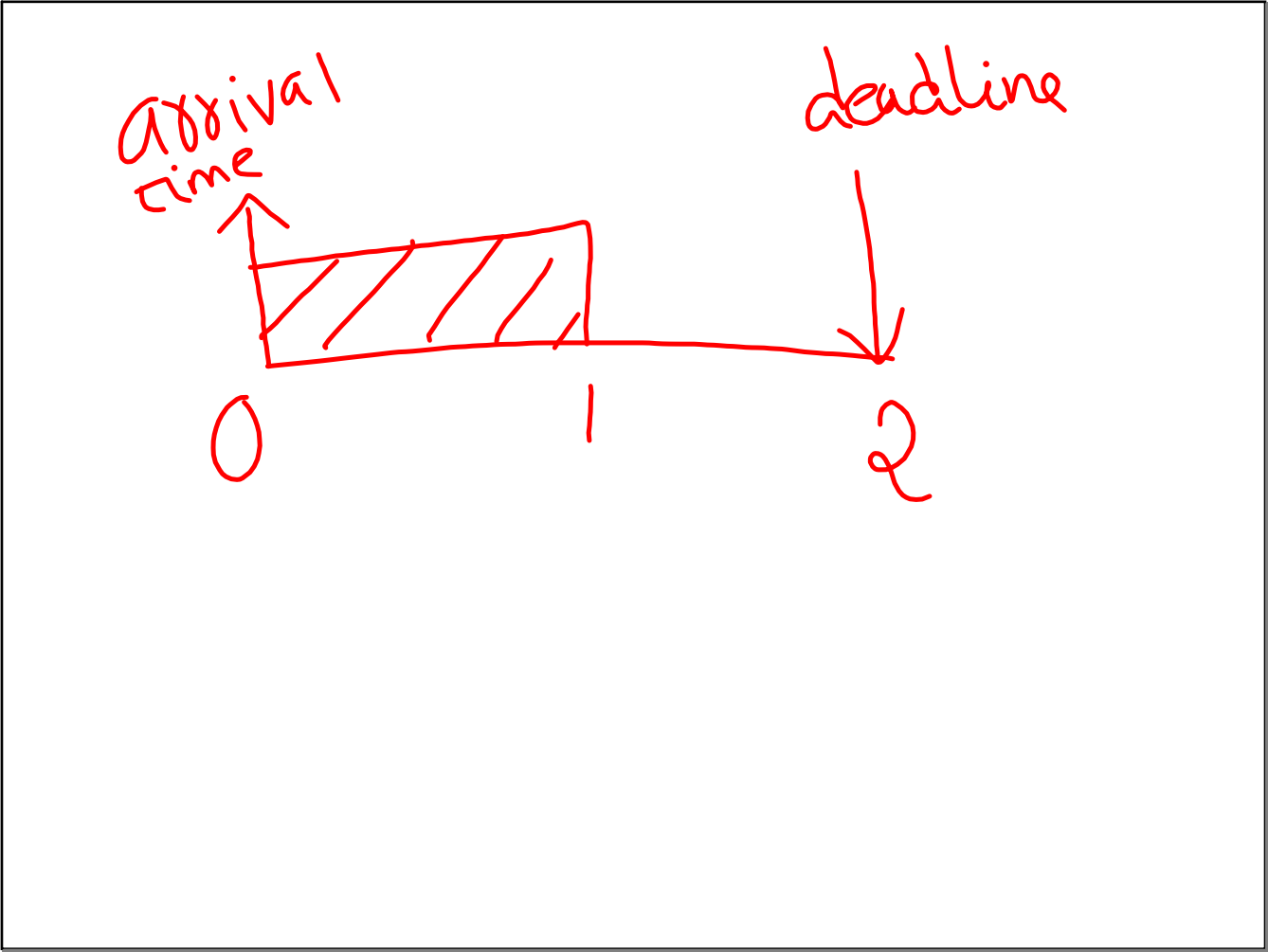
no. of tasks

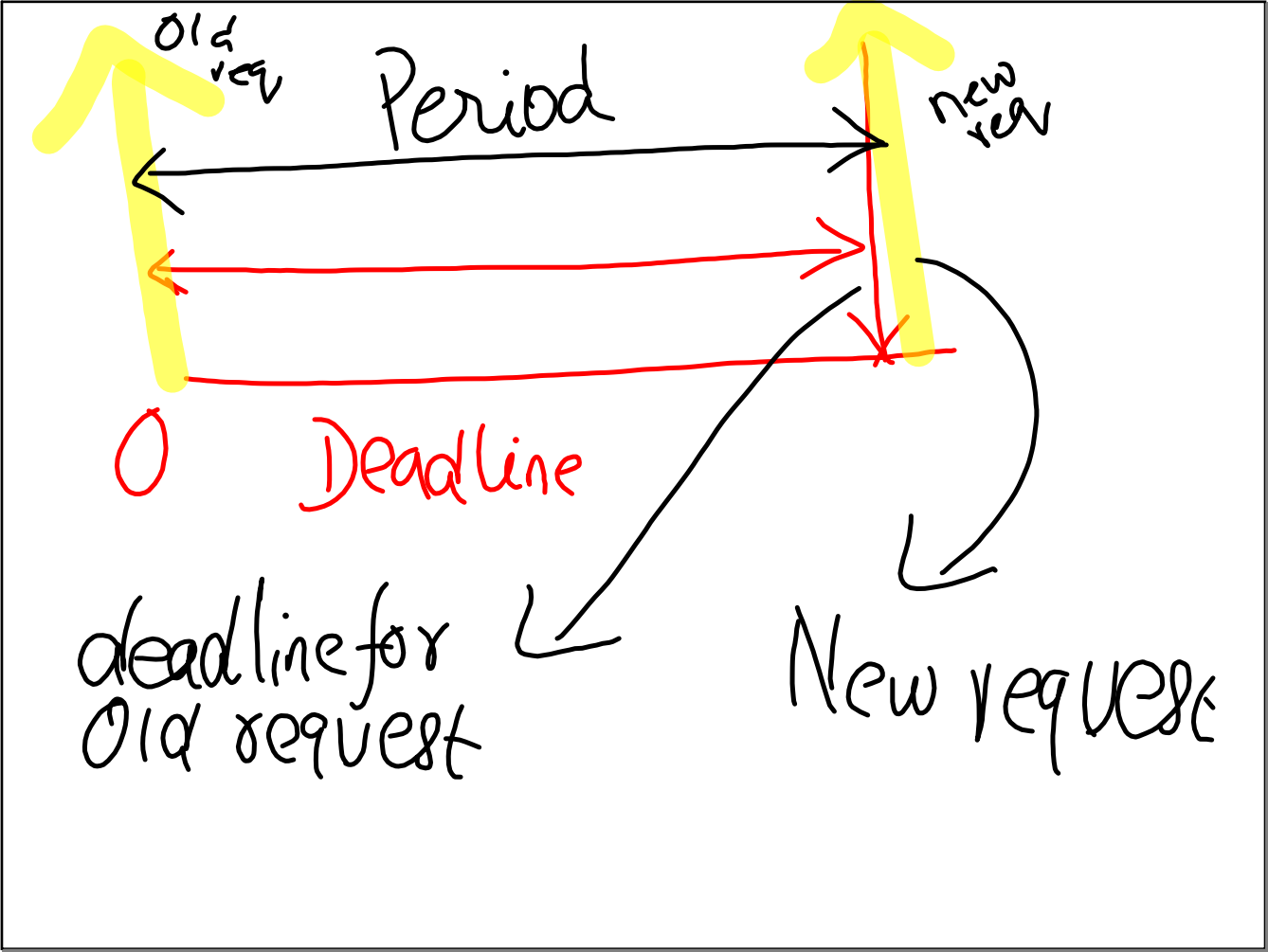
$$U < 0.69$$

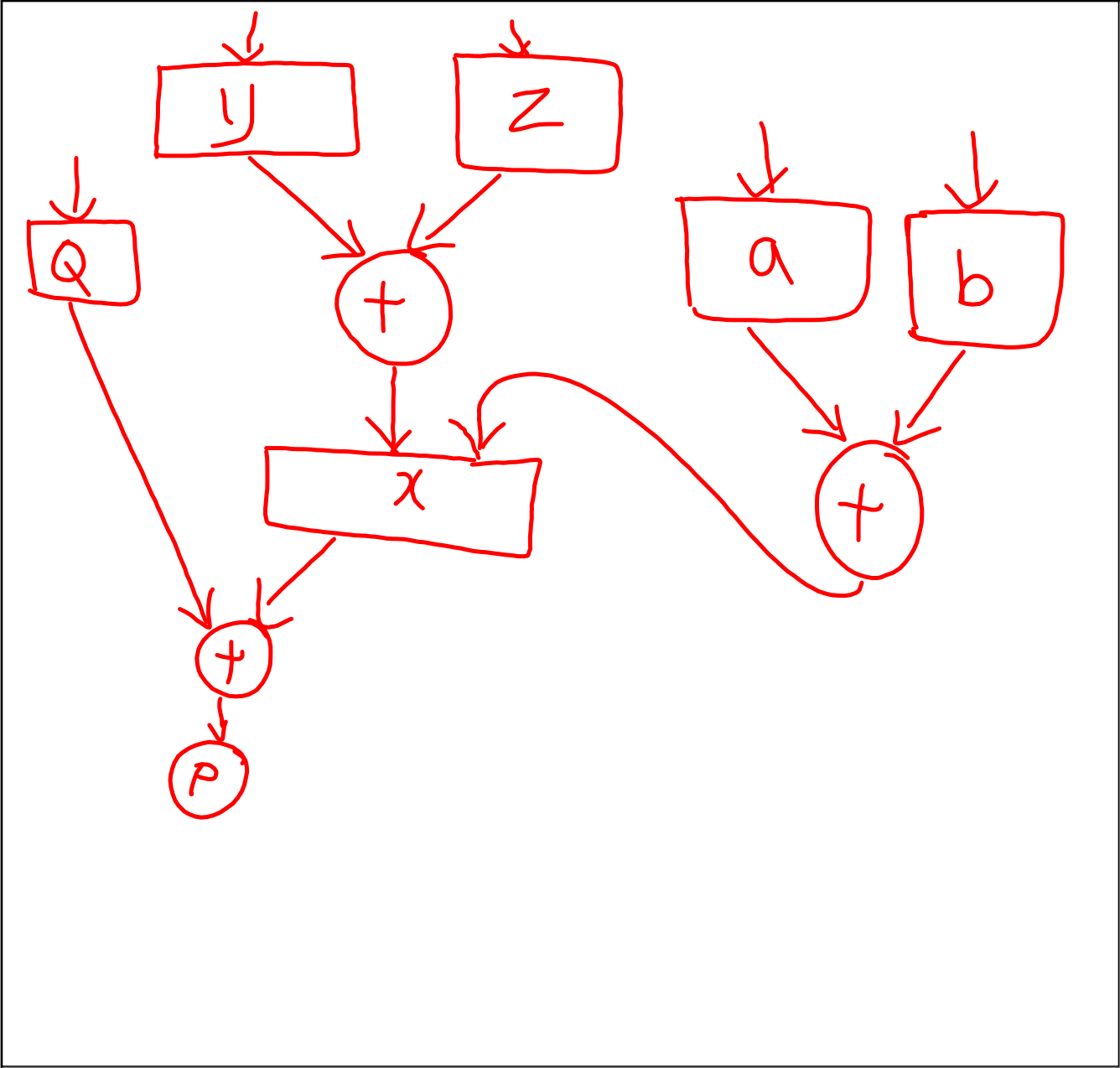
Earliest Deadline First

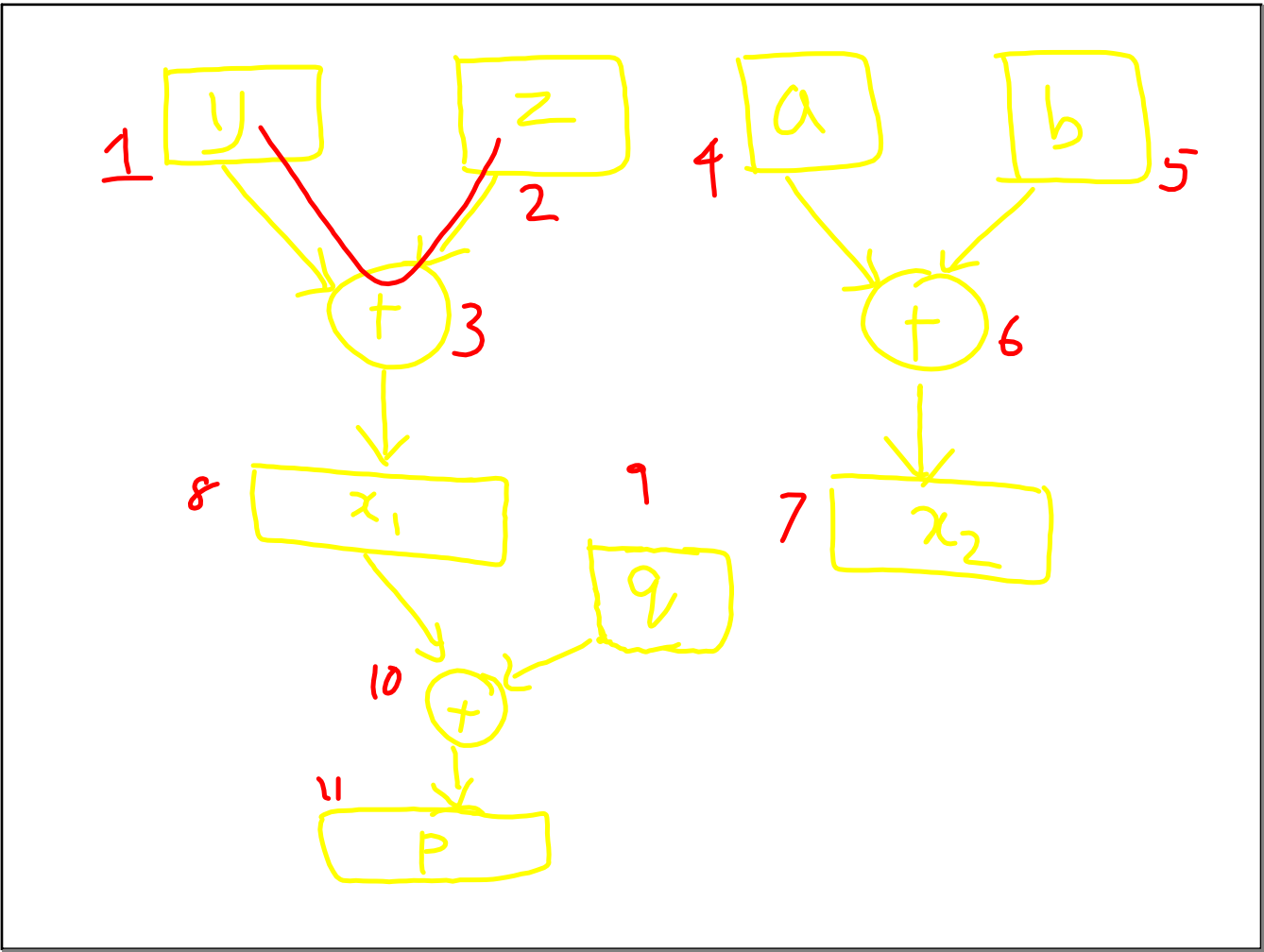
Sufficient & necessary

$$U = \sum_{i=1}^n \frac{C_i}{T_i} \leq 1$$



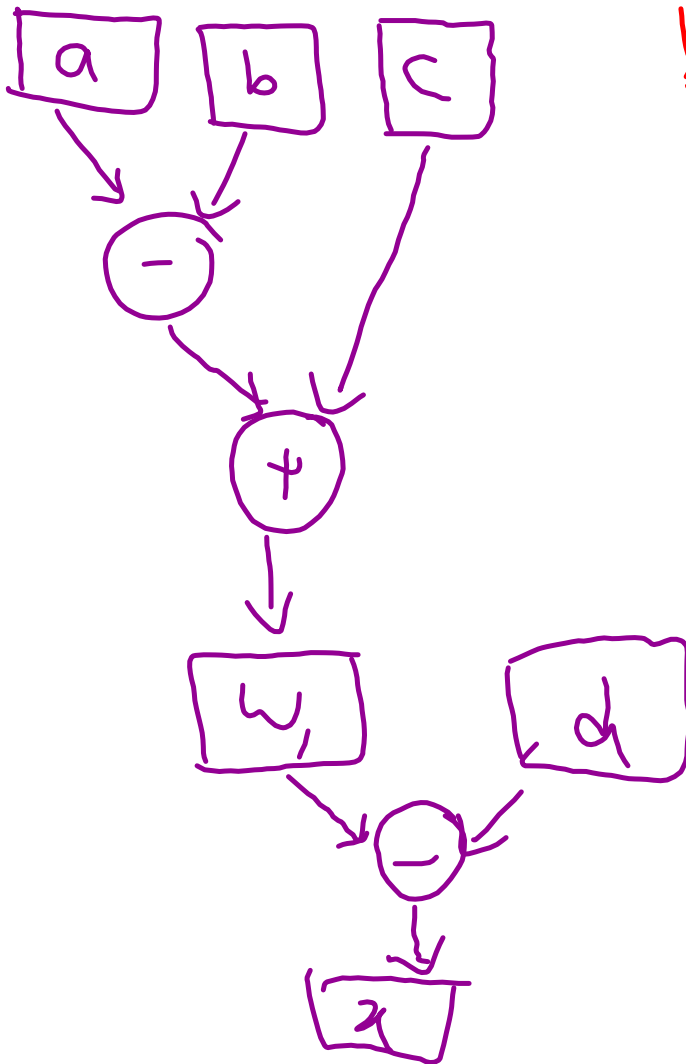






Data flow graph
Control flow graph
control data flow graph

```
if (a > 0)
    x = a + b;
else
    x = p + q;
z = x + e;
```

$w = a - b + c;$
 $x = w - d;$
 $y = x - 2;$
 $w = a + b - c;$
 $z = y + d;$
 $y = b * c;$
 $w_1 = a - b + c;$
 $x = w_1 - d;$
 $y_1 = x - 2;$
 $w_2 = a + b - c;$
 $z = y_1 + d;$
 $y_2 = b * c;$
 $a = -b;$


```
for(i=0; i<P; i++) {  
    for(j=0; j<Q; j++) {  
        for(k=0; k<S; k++) {  
            X = a+b;  
        }  
        X = X+c;  
    }  
    Z = Y+d;  
}
```

```
i = 0;
while (i < P) {
    j = 0;
    while (j < Q) {
        k = 0;
        while (k < S) {
            x = a + b;
            k++;
        }
        y = x + c;
        j++;
    }
    z = x + d;
    i++;
}
```

