Căutarea binară

— doar la vectori ordonați

$$X = (2, 3, 7, 12, 13, 17, 20, 24)$$

$$1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6 \quad 7 \quad 8$$

$$y = 24$$

$$\boxed{s = 1} \qquad \boxed{d = 8}$$

$$m = (1+n)/2 = 9/2 = 4$$

$$X[m] = 12$$

$$\left. \begin{array}{l} s = 5 \\ d = 8 \end{array} \right\} \Rightarrow m = (5+8)/2 = 6$$

$$X[6] = 17$$

$$\left. \begin{array}{l} s = 7 \\ d = 8 \end{array} \right\} \Rightarrow m = (7+8)/2 = 7$$

$$X[7] = 20$$

$$\left. \begin{array}{l} s = 8 \\ d = 8 \end{array} \right\} \Rightarrow m = (8+8)/2 = 8$$

$$\Rightarrow X[8] = 24 = y$$

```
int x[1000],n,y;
-x ordonat

s=1; d=n; OK=0;
while( (s<=d) && (OK==0) )
{
    m=(s+d)/2;
    if( x[m]==y )
        OK=1;
    else if( x[m]<y )
        d=m-1;
    else
        s=m+1;
}

if(OK==1)
    cout << "Gasit pe poz" << m;
else
    cout << "nu exista";
```