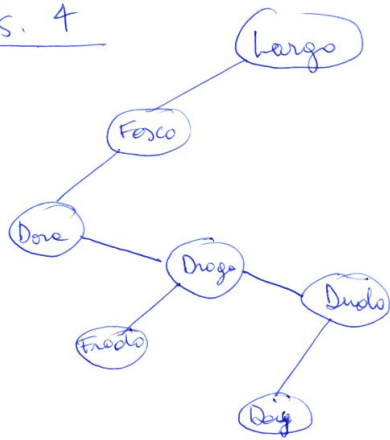


Es. 1

Ripetuti (a, k):
new array b[0..k]; r=0;
for (i=0; i <= k; i++) b[i]=0;
for (j=0; j < n; j++)
 b[a[j]]++;
for (i=0; i <= k; i++)
 if b[i] > 1 r++;
return r; $\Theta(n+k)$

Es. 4



Esercizio 2

Posicipate (a, sx, dx)

if (sx > dx) return null;
u = nuovoNodo();
u.dato = a[dx];
cx = $\frac{sx+dx+1}{2}$;
u.sx = Posicipate(a, sx, cx-1);
u.dx = Posicipate(a, cx, dx-1);
return u;

$$T(n) = \begin{cases} O(1) & n \leq 0 \\ 2T(\frac{n}{2}) + O(1) & n > 0 \end{cases}$$

$$T(n) = \Theta(n);$$

Esercizio 3

ContaArchi(G)

```
numCC = 0;
for (s = 0; s < n; s++) raggiunto[s]=0;
for (s = 0; s < n; s++) {
    if (!raggiunto[s]) {
        numCC++;
        DFSric(s);
    }
}
return numCC-1;
```

DFSric(s): vedi libro di testo

$$T(n, m) = \Theta(n+m)$$

$$n = |V|$$

$$m = |E|$$