



UNIUNEA EUROPEANĂ



GUVERNUL ROMÂNIEI



Instrumente Structurale
2007-2013



Platformă de e-learning și curriculum e-content pentru învățământul superior tehnic

Transmisia datelor multimedia in rețele de calculatoare

5. Codarea Shannon-Fano

Codarea Shannon-Fano

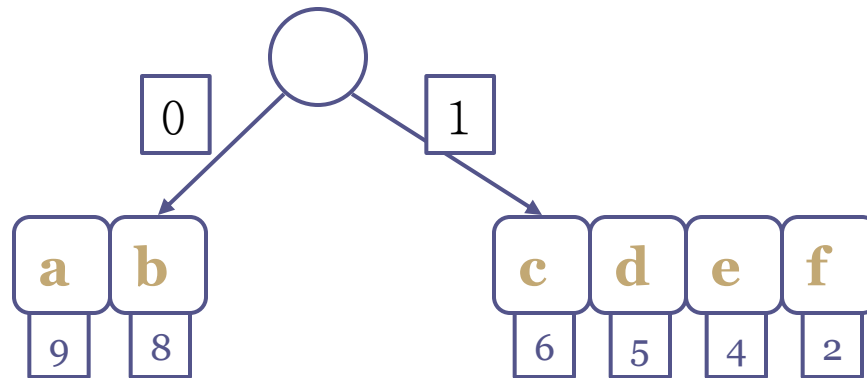
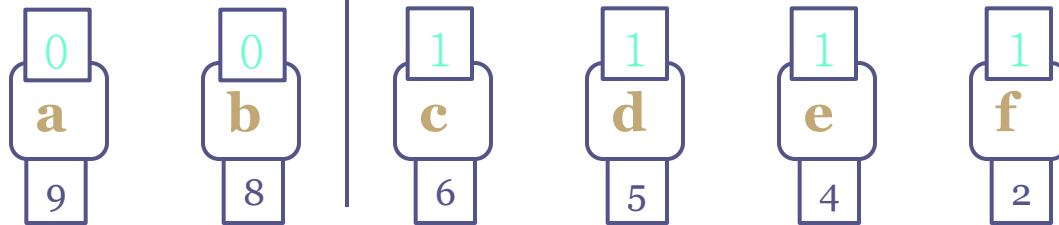
- Are avantajul simplitatii
- Suboptimal
- Se bazeaza pe teoria Shannon
 1. Codul este construit astfel: mesajele sursei $s(i)$ si probabilitatile asociate $p(i)$ sunt listate in ordine descrescatoare a probabilitatilor
 2. Lista este divizata pentru a forma doua grupuri de probabilitati egale
 3. Fiecare mesaj din primul grup receptioneaza (primeste) 0 ca prim simbol al cuvintului de cod, iar mesajele din lista a doua vor avea cuvintele de cod incepand cu 1
 4. Fiecare din sub-listele obtinute sunt divizate dupa acelasi criteriu si se alocata (asigneaza) simboluri suplimentare
 5. Procesul se continua pana cand se obtin sub-liste cu un singur mesaj

Codarea Shannon-Fano

- Lungimea cuvântului de cod este
$$-\log(p(x))$$
daca este posibil sa se divizeze in subgrupuri de probabilitate egala
- Cand acest lucru nu este posibil, unele din cuvintele de cod vor avea lungimi de
$$(-\log(p(x)) + 1)$$
- Codul Shannon-fano furnizeaza o lungime medie a cuvintelor de cod ce satisface relatia :

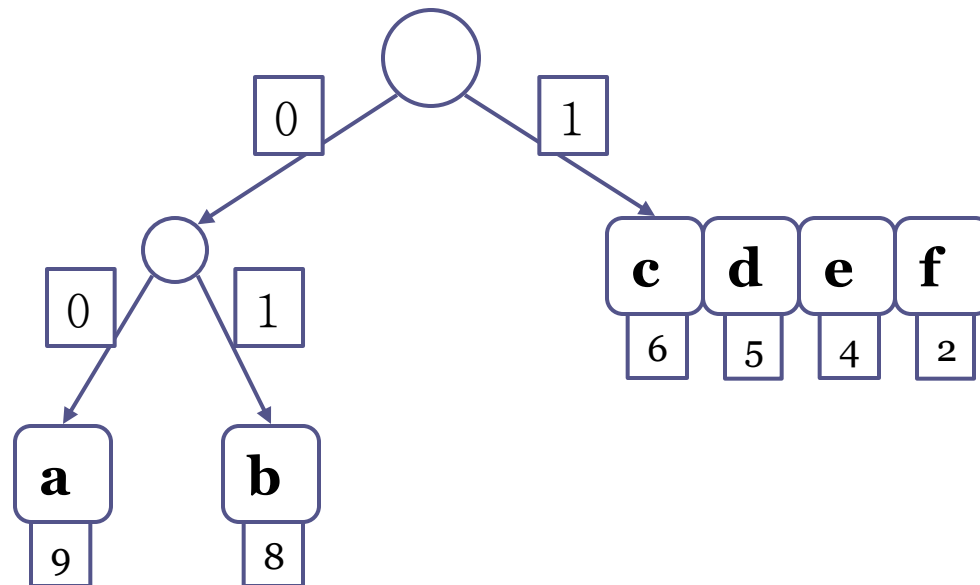
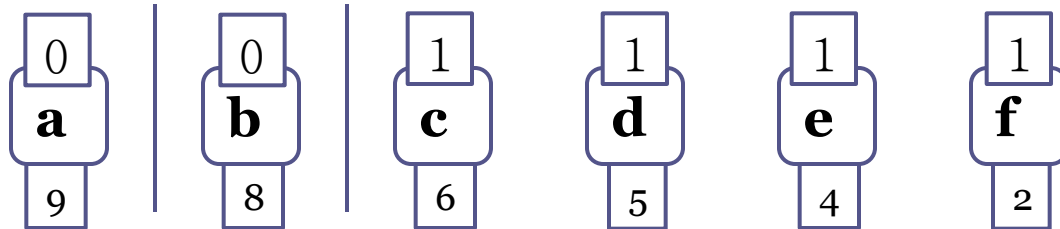
$$H(S) \leq \bar{l} \leq H(S) + 1$$

Codarea Shannon-Fano

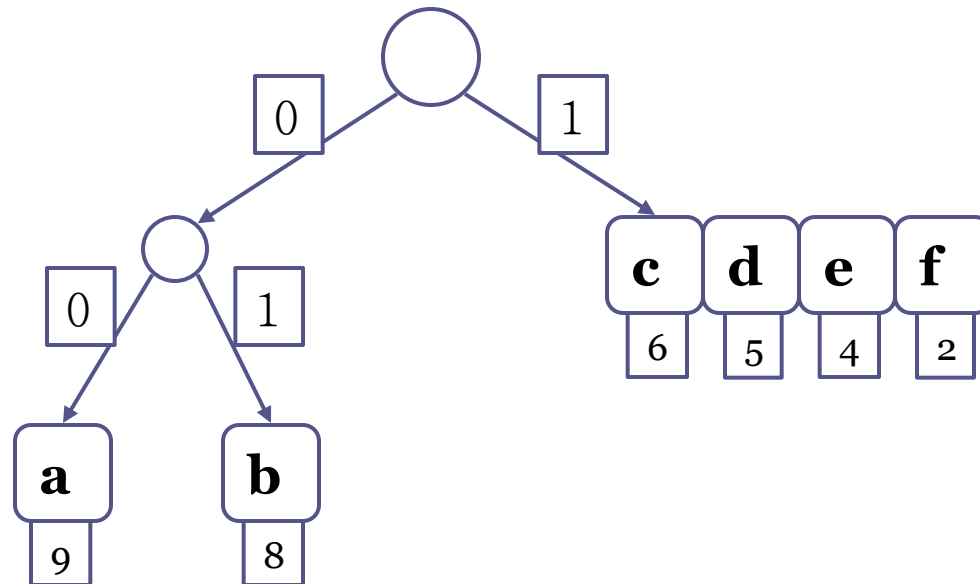
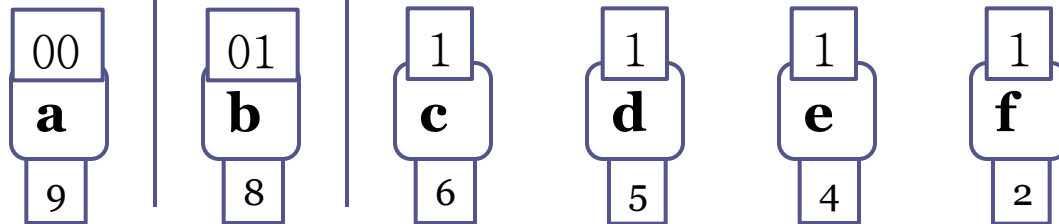


Codarea Shannon-Fano

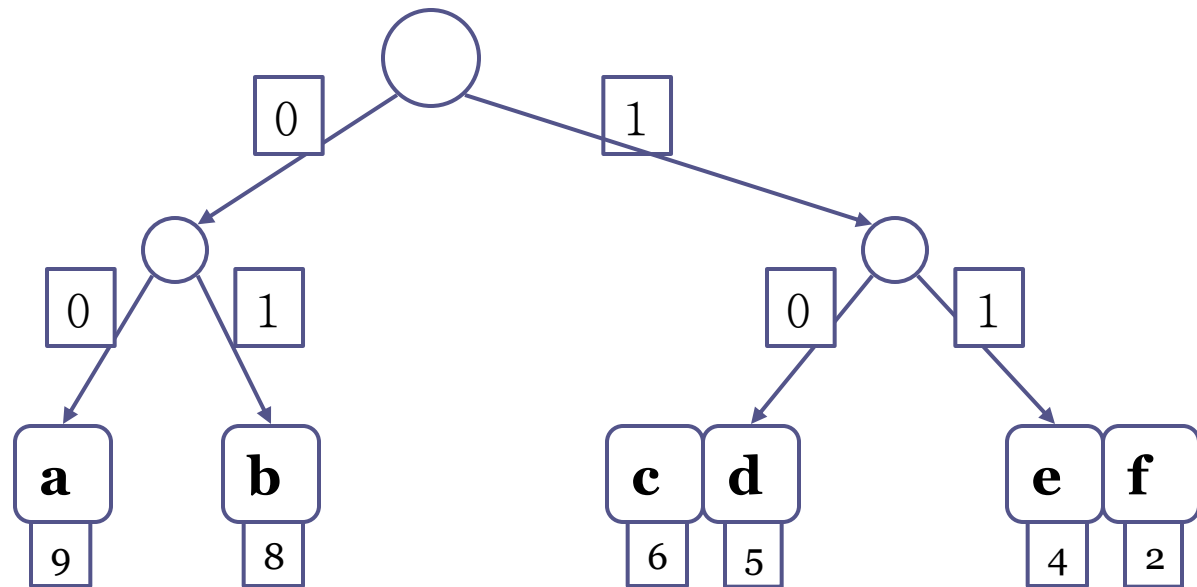
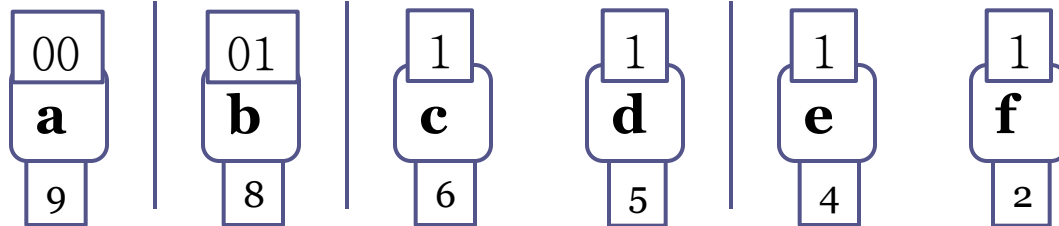
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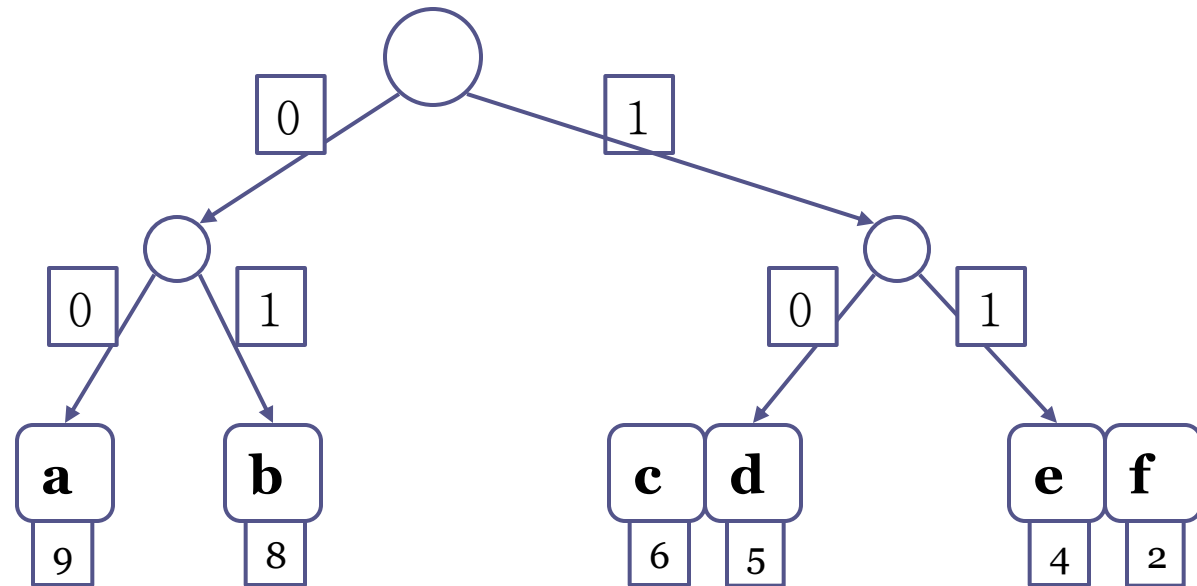
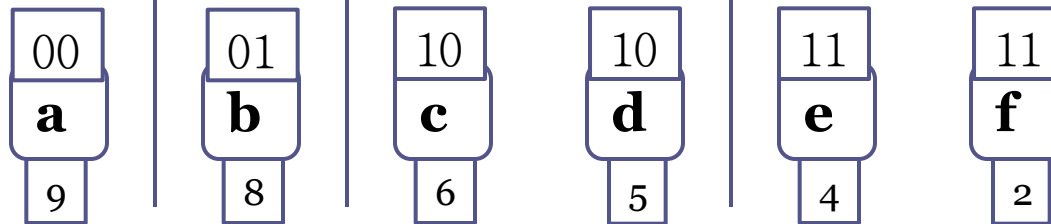
Codarea Shannon-Fano



Codarea Shannon-Fano

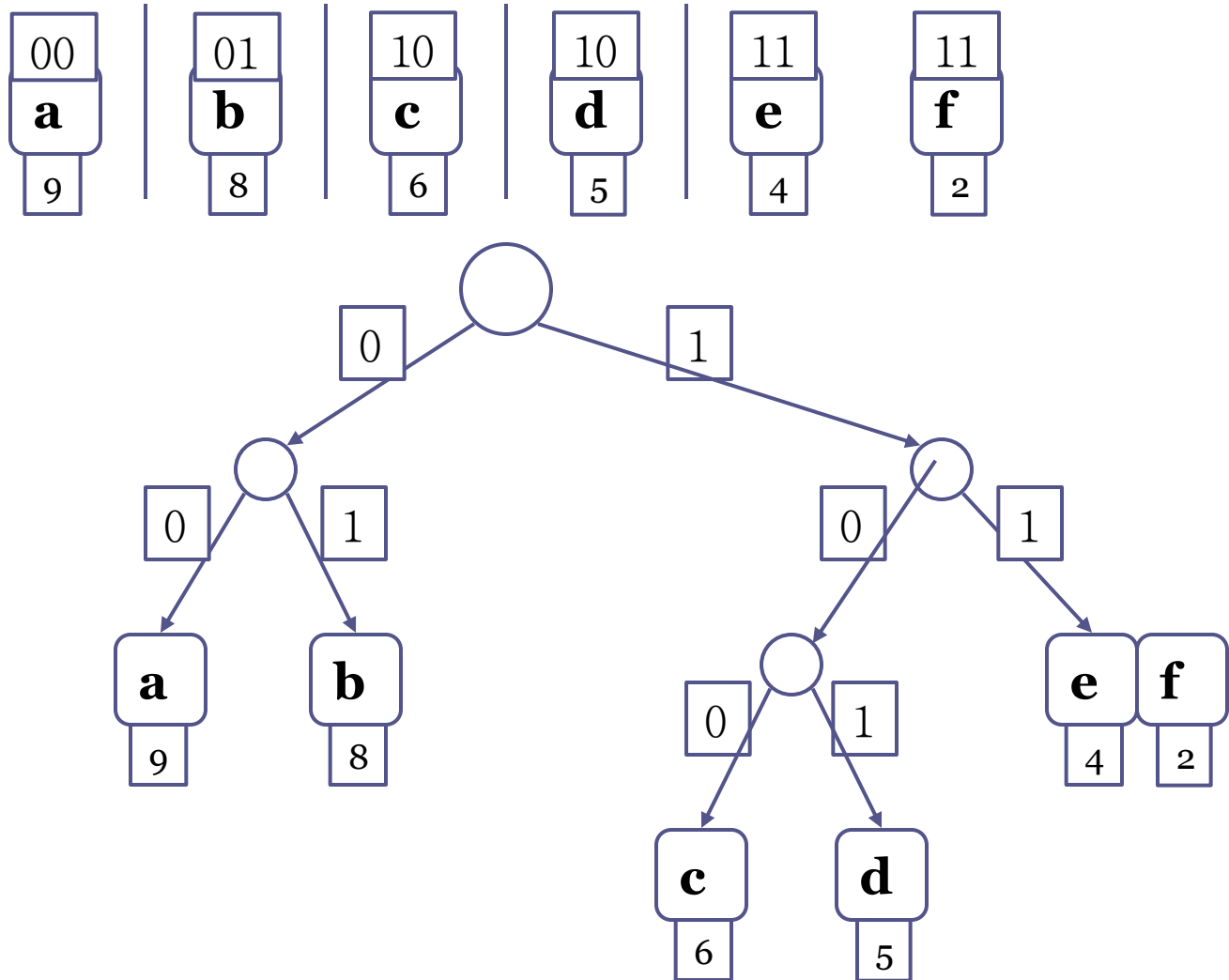


Codarea Shannon-Fano



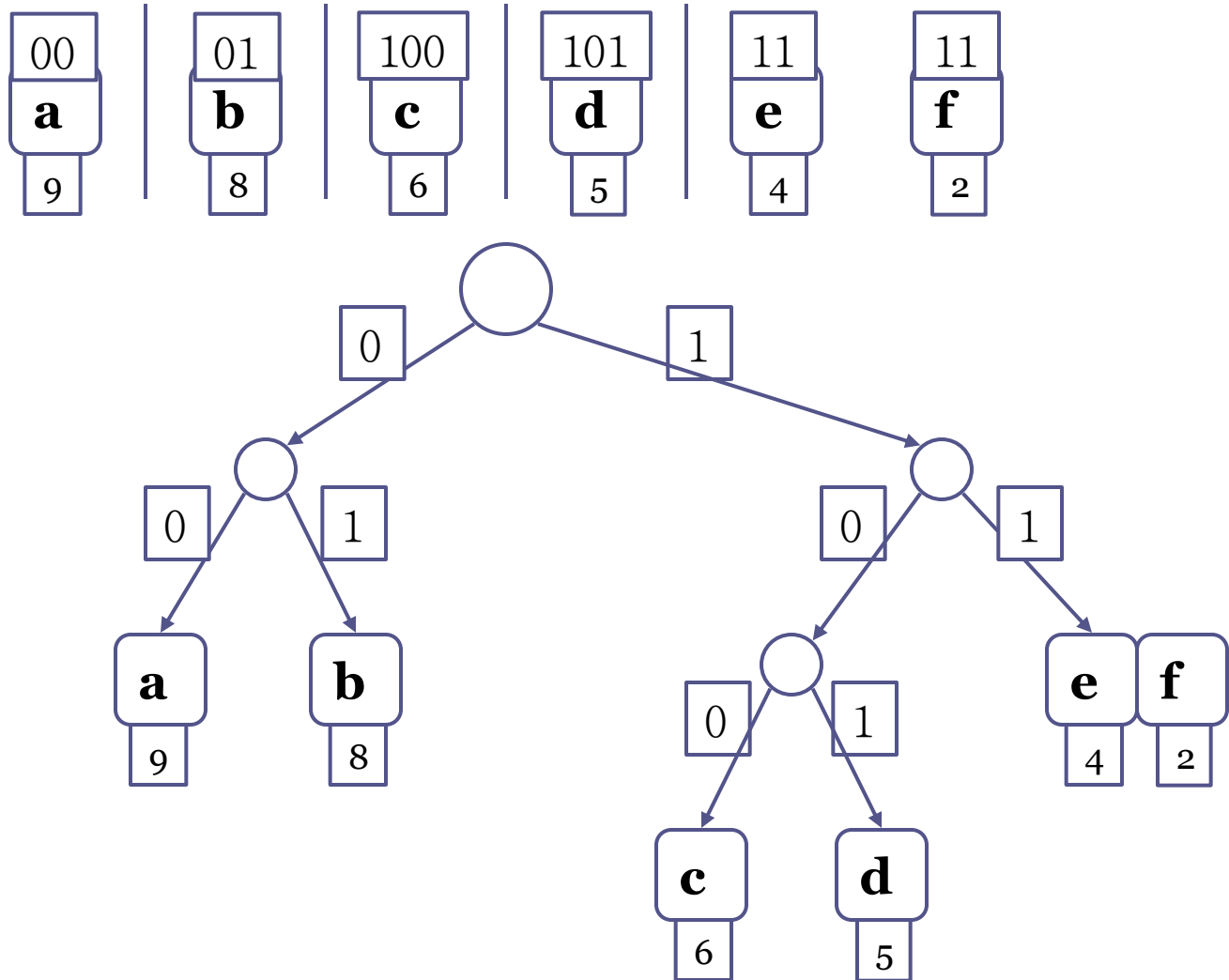
Codarea Shannon-Fano

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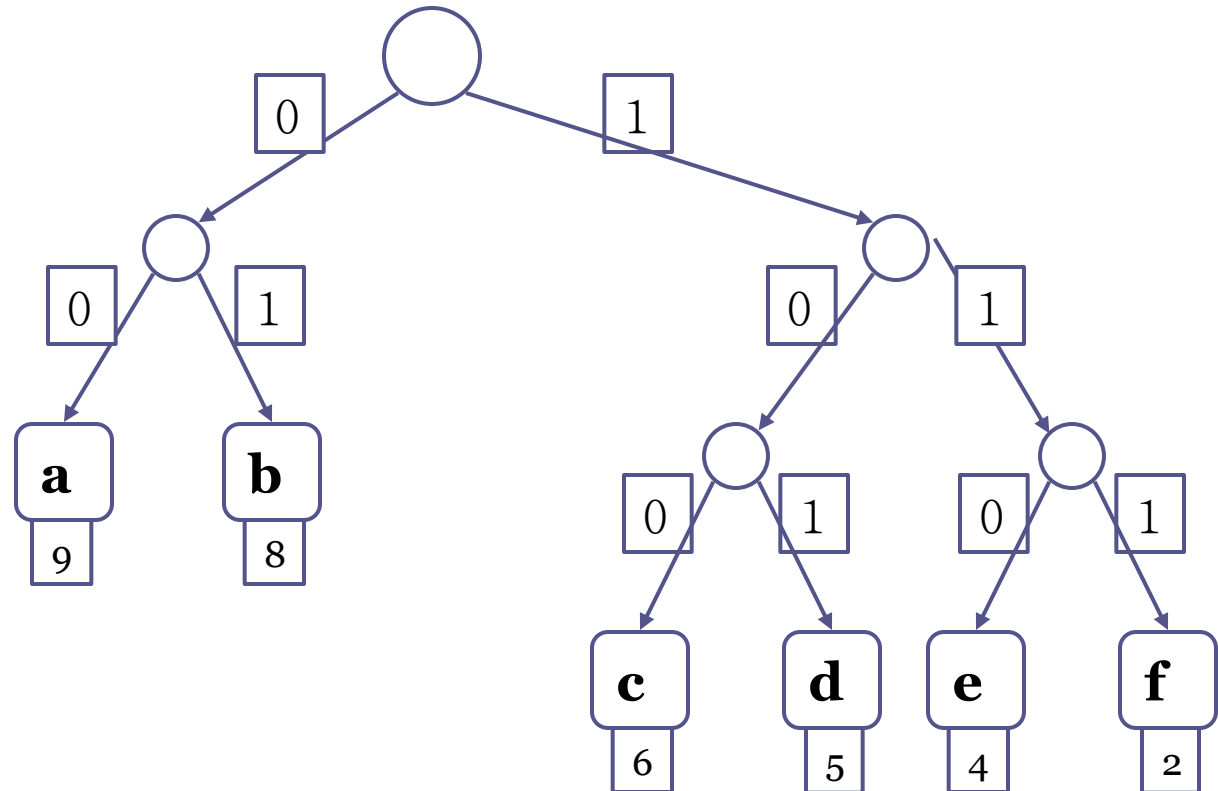
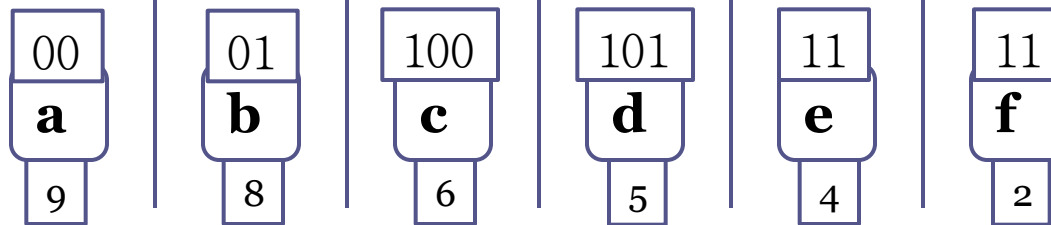


Codarea Shannon-Fano

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Codarea Shannon-Fano



Codarea Shannon-Fano

