Matrix Representations.

Case-Studies:-

We conclude this chp with two-case-studies interval graphs and matrix chains.

Interval_Graphs:

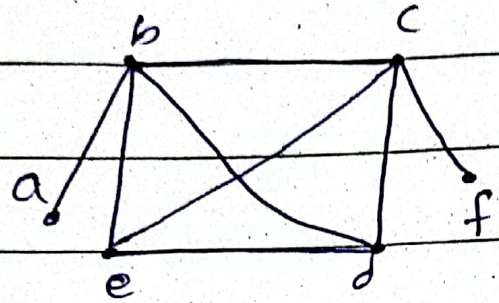
Interval graphs have been used extensively in situations involving the arrangments of data into chronological order.

→ **Archeology:**

In dating the graves, they assumed that if two different artefacts occoursed togather in the same group, then there time periods must have overlapped.

We can regard such a matrix as the adjency matrix of a graph by replacy each ✓ by 1 and by each X or "—" by 0.

$$\begin{bmatrix} - & v & x & x & x & x \\ v & - & v & v & v & x \\ x & v & - & x & v & x \\ x & v & v & - & v & - & x \\ x & x & x & x & v & - \end{bmatrix} = \begin{bmatrix} 0 & 1 & 0 & 0 & 0 & 0 \\ 1 & 0 & 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 & 1 & 0 \\ 0 & 1 & 1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \end{bmatrix}$$



Genetics:

For some time, geneticists have regarded the chromosome as a linear arrangement of genes. and it is natural to ask whether the fine structure inside the gene is also arranged in a linear manner this problem is called Benzer's problem.

Unfortunately, the fine structure is too detailed to be observed directly.

and so one has to study changes in the

Day: Mon Tue Wed Thu Fri Sat

Structure of the whole gene.
known as mutations.
Although the representation of this dates as an interval graph does not prove that the fine structure.

Markov - chains:

The study of markov has arisen in wide variety of areas ranging from genetics and statistics to computing and sociology. For ease of presentation we consider a rather trivial marker chain problem that of a drunkard his standing directly between his two favourite pubs.
This source and sink and the black vertex.
Every minute he behaves in one of three ways, each with a given probability.

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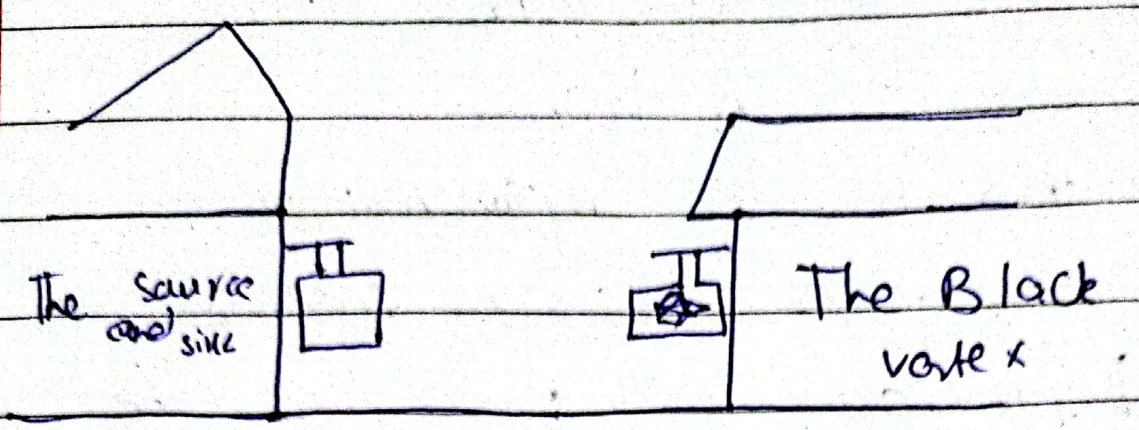
Day: Mon Tue Wed Thu Fri Sat



Such a procedure is called a one-dimensional random walk.