CSE 4125: Distributed Database Systems
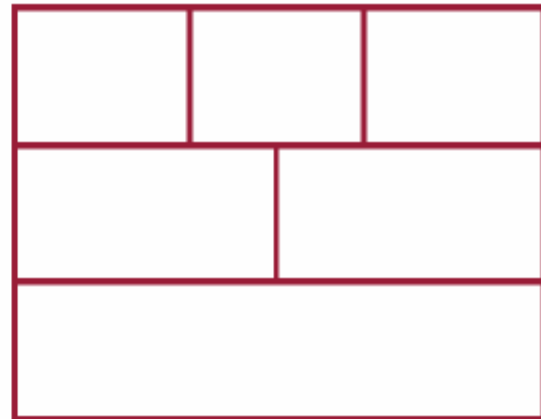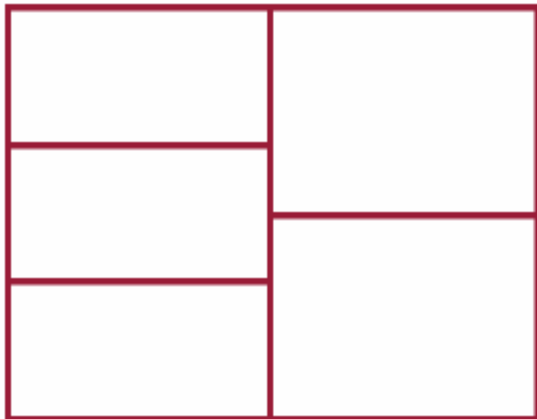# Chapter – 4
(Part – E)

Distributed Database Design

Topics to be discussed -

- Design of Mixed Fragmentation
- Design of Allocation of Fragments

The Design of Mixed Fragmentation

Approaches

1. Applying horizontal fragmentation to vertical fragmentation.

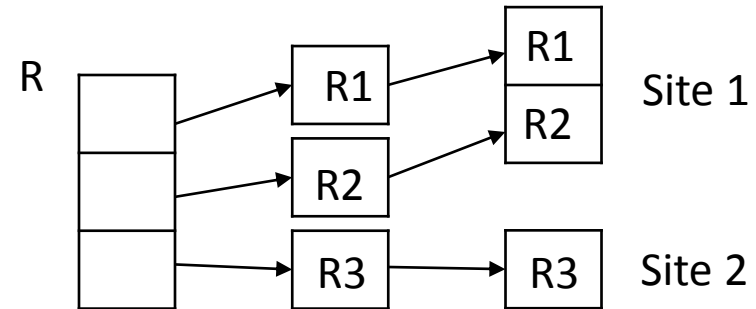2. Applying vertical fragmentation to horizontal fragmentation.

The Design of Allocation of Fragmentation

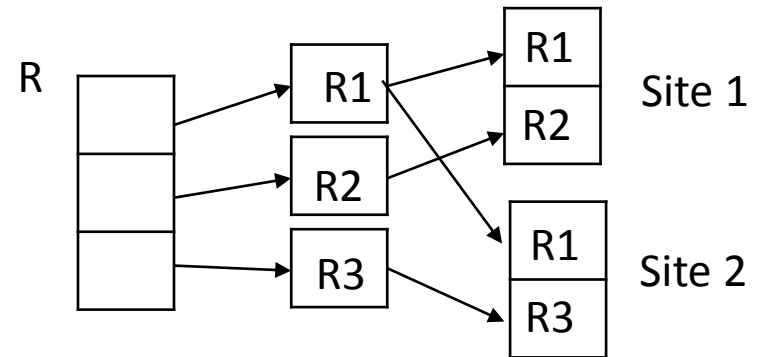# Types of Allocation of the Fragments

1. **Non-redundant allocation.**

   One copy => one site.

2. **Redundant allocation.**

   One copy => many sites.

   Replication.

Method for Non-redundant Allocation

Best fit:

A measure is associated with each possible sites.

–i.e. measuring the access frequency by local application.

Site with best measure is selected.

Method for Redundant Allocation

a)   All beneficial sites:

–Determining the set of sites where *benefit is higher.*

–For example, determining sites where–

cost for update operation < cost for read-only application.

–Allocate fragments to each one of those sites.

b)   Additional replication:

–Firstly, do the non-replication.

–Then progressively add replicated fragments.

❑ From most beneficial to less beneficial.

–Degree of redundancy is considered.

❑ Because benefit does not grow proportionally to the degree of redundancy.

THANK YOU
FROM
CHAPTER 4