**Course: Advanced Bioinformatics**

**Module title: Data Organization**

**Module no. : 10**

How Data can be organized in a computing device. Well there are several mechanisms starting from a very basic to well established schemes.

Registers (Hard Papers) where records are written on a paper with some writing material such as pen or pencil.

**Flat Files:** Collection of data records on a computer such as notepad files. They have minimal structure and no metadata. Application program contains relationship information between different flat files.

**Database management systems:** In which data is saved in the form of databases, i.e. there is some relationship between entities is present. There are several types of database system. Hierarchical; where information is in the form of hierarchy. Network; where information/data is stored in the form of a network. Relational; where we have concepts of rows and columns and information is presented in the form of tables.

A database is composed of relations and conforming to a set of principles governing how such relations are supposed to behave from Understanding

A database is a body of information stored in two dimensions (rows & columns) Rows are records Columns are attributes of those records

The groups of rows and columns, or tables, are largely independent of each other.

The power of the database lies in the relationships that you construct among the tables.

A database is self-describing: it contains metadata, which is a description of its own structure.