

DATA BASE MANAGEMENT SYSTEM IN GIS

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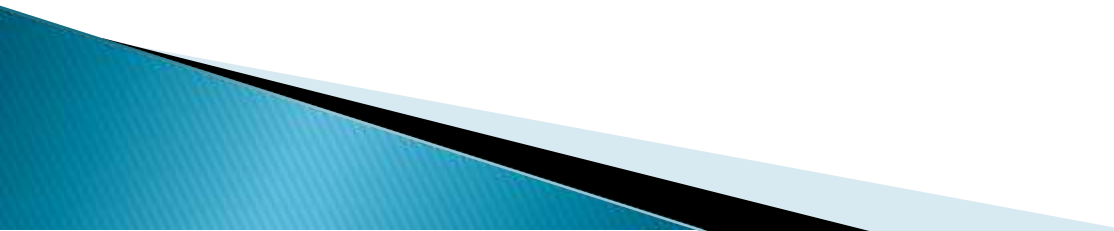
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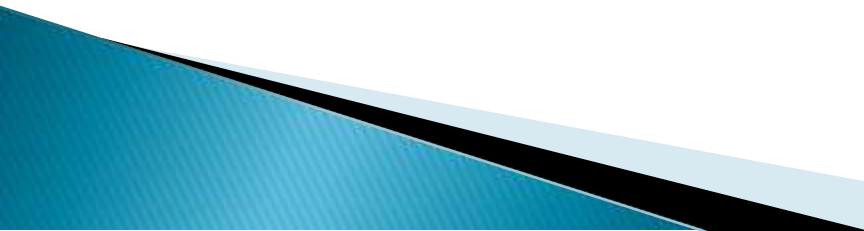
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Introduction

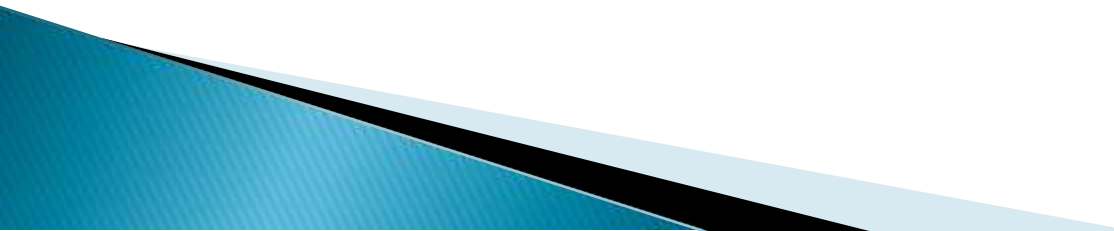
- ▶ Management of GIS data consist of storing a variety of data categories under two types, entity (Spatial data) and attribute (Non spatial data) in a way that gives to retrieve or display any combination of these data after manipulation.
 - ▶ GIS database comprises spatial or entity or graphical database, non spatial or attribute database and a linkage mechanism for their topology to show the relationship between the spatial data attribute data for further analysis.
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Example:

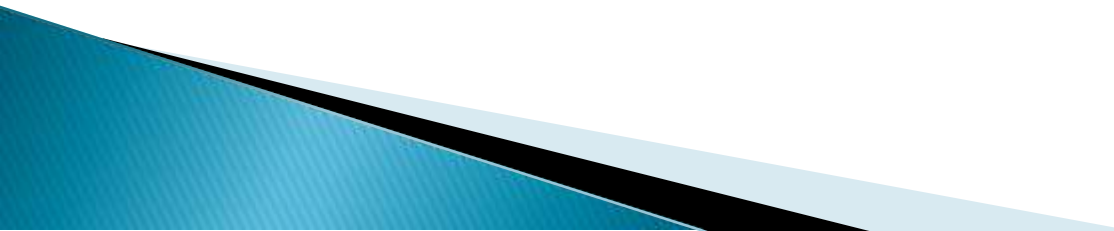
- ▶ Entity type is the point
- ▶ Spatial data are longitude and latitude
- ▶ Attribute data is a monument

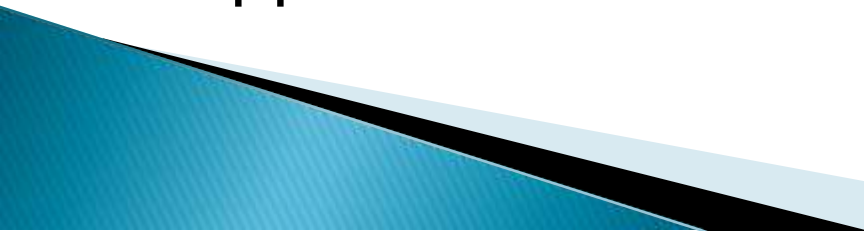
Non - Spatial data (attribute) can be stored any conventional data bases, whereas spatial data, which is the dominant data in GIS, should have the data base which is capable for handling spatial data.

Data Base Management System

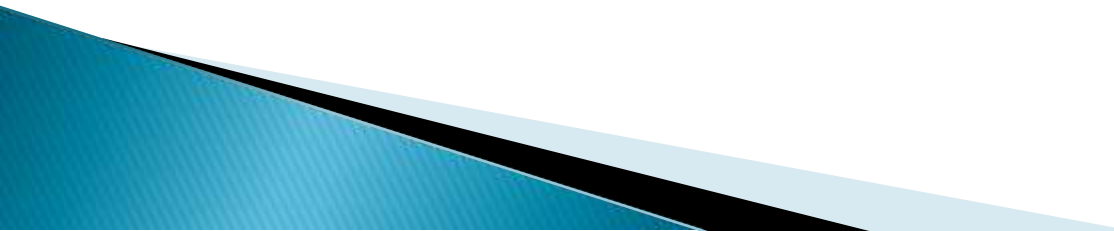
- ▶ Dale and McLaughlin (1988) define a DBMS as a computer program to control the storage, retrieval and modification of data (in a database).
 - ▶ Stern and Stern (1993), a DBMS will allow user to joint, manipulate or otherwise accses the data in any number of database files.
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Functions of DBMS:

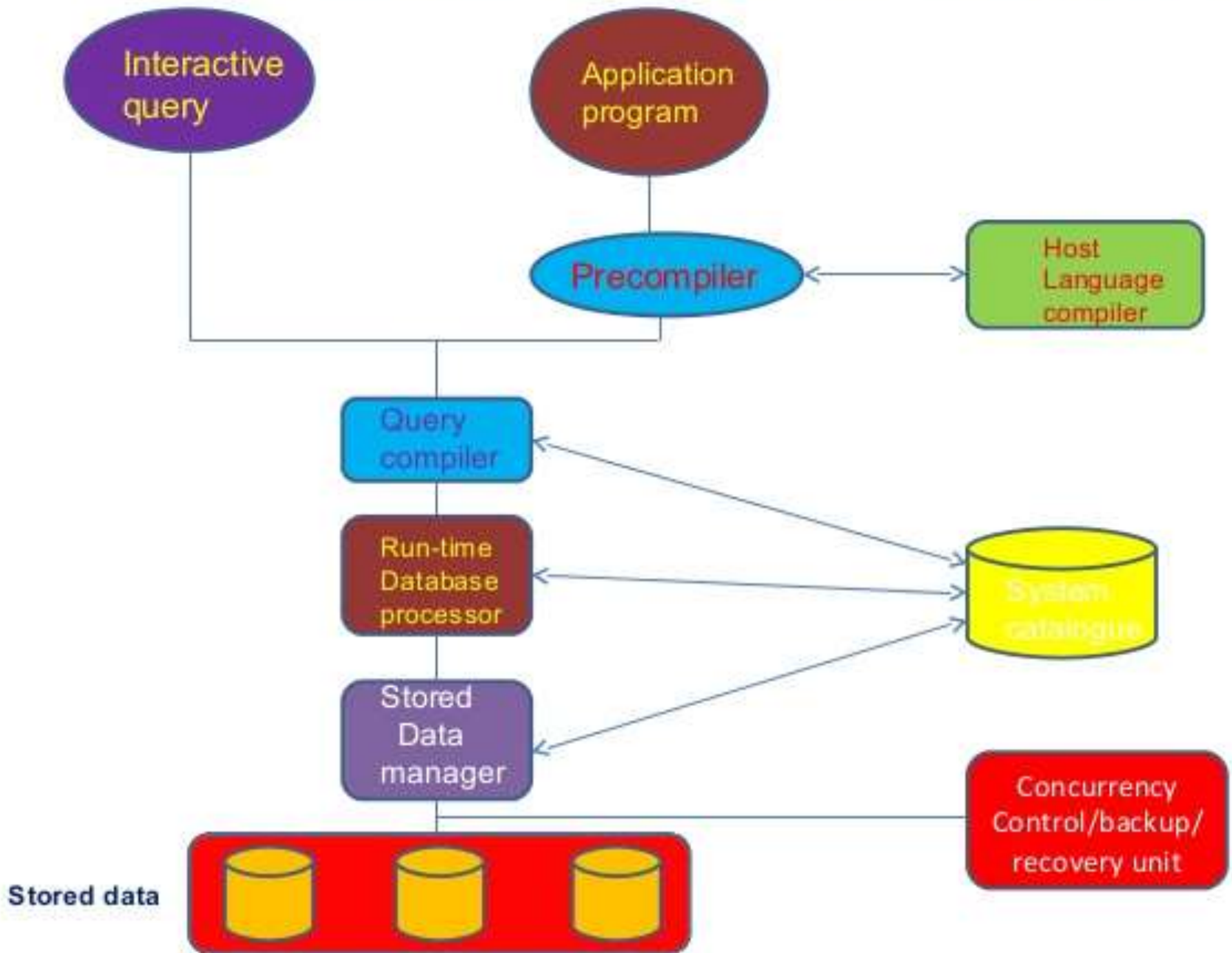
- ▶ File handling and file management (for creating modifying, deleting, the database structure).
 - ▶ Adding updating and deleting the records.
 - ▶ Extraction of information from data.
 - ▶ Maintenance of data security and integrity.
 - ▶ It includes security, integrity, Synchronization, Physical data independence, Minimization of redundancy and efficiency.
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- ▶ In GIS management data field, two types of distinct data are important, one is logical data and another is physical data.
 - ▶ The function of GIS should be able to perform include data input, data storage, Management transformation analysis and output. DBMS is helpful for payrolls, bibliography, travel agencies booking system, and student enrolment.
 - ▶ DBMS can also be used in handling both geographical and non geographical elements of GIS data.
 - ▶ Two approaches to used DBMS in GIS (First approaches and Second approaches).
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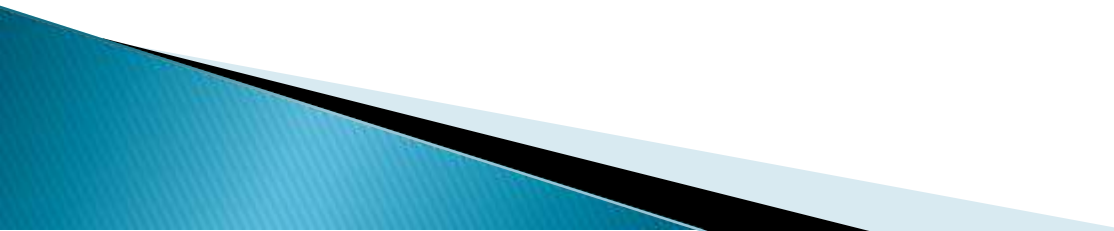
Components of DBMS:

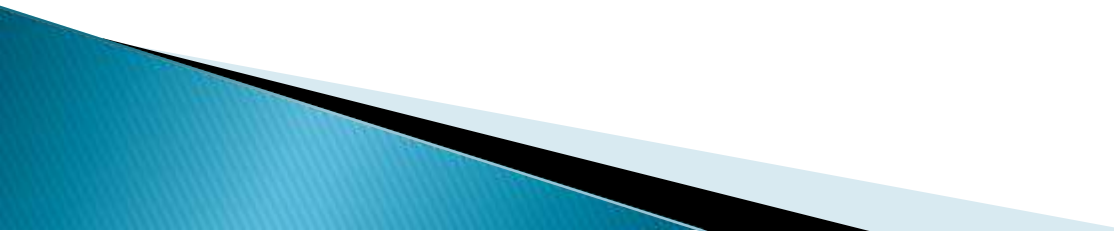
- ▶ Data definition.
 - ▶ Storage definition.
 - ▶ Database administration.
 - ▶ Data Manipulation.
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Schematic diagram of DBMS components used to queries

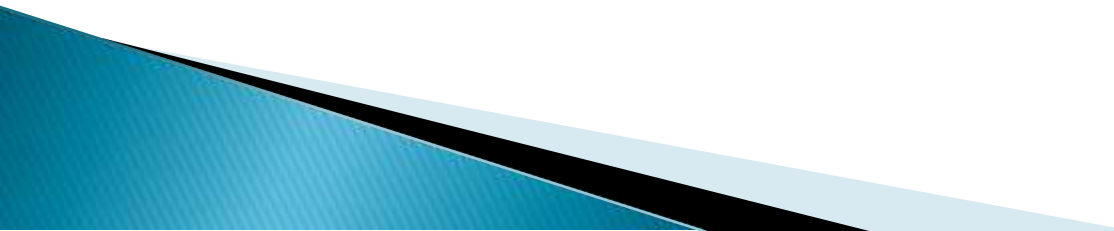


GIS data File Management

- ▶ Data structure, composed of combination of various file structure and another structures, allow complex method of managing data and analyzing multiple thematic layers to be used for a particular GIS.
 - ▶ GIS consist of storing entity and attribute data.
 - ▶ In requires the compute using a representation file structure, to be able to store, locate, retrieve, and cross-reference record.
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- ▶ Three basic computer file structure: Simple lists order sequential files and index files.
 - ▶ Simple list
 - ▶ Indexed files
 - ▶ Building GIS world
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Conclusion

- ▶ A database Management System (DBMS) is a software package that allows the user to set up, use and maintain a database.
 - ▶ A DBMS include data backup and recovery function to ensure data availability at all times.
 - ▶ A DBMS allows the control to redundancy.
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References:

- ▶ M. Anji Reddy, Textbook of Remote Sensing and Geographical Information System, BS Publications.
 - ▶ George Joseph, Principle of Geographic Information System,
 - ▶ Special thanks of Pramoda raj.
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