Multimedia Database

A Multimedia database (MMDB) is a collection of related for multimedia data. ... A Multimedia Database Management System (MMDBMS) is a framework that manages different types of data potentially represented in a wide diversity of formats on a wide array of media sources.
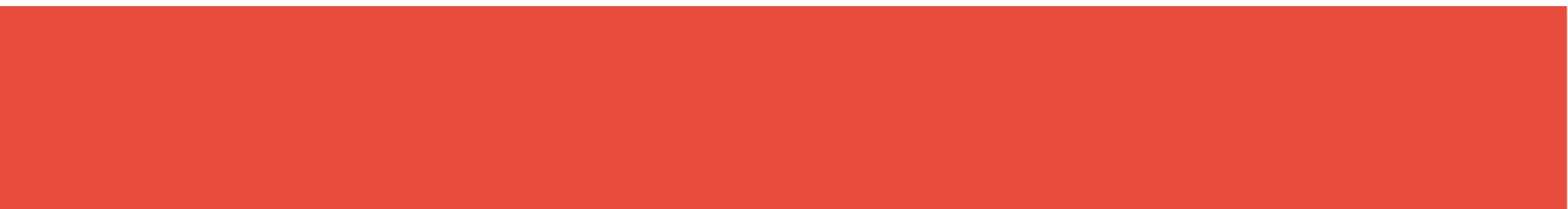
Multimedia Database

Multimedia database provide features that allow users to store and query different types of multimedia information.

The following types of multimedia data are available in current systems today:

- Images
- Graphics
- Animations
- Video
- Text / Document
- Audio
- Composite or mixed multimedia data

MULTIMEDIA

- Text
- Audio
- Pictures
- Video
- Animation
- Interactivity

A Multimedia Database (MMDB) hosts one or more multimedia data types(i.e. text, images, graphic objects, audio, video, animation sequences). These data types are broadly categorized into three classes:

- Static media: (time-independent: image and graphic object).

- Dynamic media: (time-dependent: audio, video and animation).

- Dimensional media: (3D game and computer aided drafting programs).

Comparison of multimedia data types

Medium	Elements	Time-dependence
Text	Printable characters	No
Graphic	Vectors, regions	No
Image	Pixels	No
Audio	Sound, Volume	Yes
Video	Raster images, graphics	Yes

Characteristics of Multimedia Systems

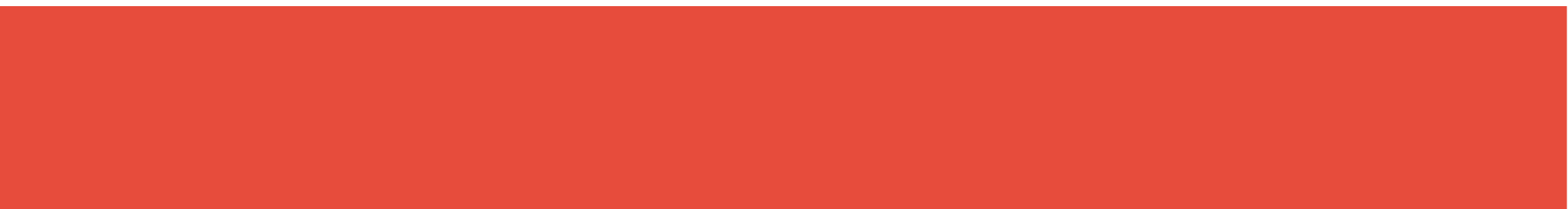A multimedia system has four main characteristics:

- Multimedia system must be **computer controlled**.

- Multimedia system are **integrated**.

- The information they handle must be **represented digitally**.

- The interface to the final presentation of media is usually **interactive**.

Characteristics of MMDM

✓ **Corresponding Storage Media**

Data must be stored & managed according to their specific characteristics of the storage media

✓ **Descriptive Search Methods**

Query must be descriptive & content oriented

✓ **View Specific & Simultaneous Data Access**

Same data can be accessed through different queries by different applications

✓ **Management of Large Amounts of data**

✓ **Real time Data Transfer**

Data transfer of real time activity gets higher priority than other database activities

✓ **Large Transactions**

Large transactions must be done in a reliable fashion, since it take long time.

APPLICATIONS

- Digital Libraries
  - Documentation and keeping Records
  - Knowledge distribution
  - Education and Training
- News-on-Demand
  - Advertisement
- Video-on-Demand
  - Entertainment
- Music database
- Geographic Information System
- Marketing

They should have the ability to take the response generated by a query and develop a presentation of that response in terms of audio-visual media and have the ability to deliver this presentation

Multimedia data consists of a variety of media formats or file representations including TIFF, BMP, PPT, IVUE, FPX, JPEG, MPEG, AVI, MID, WAV, DOC, GIF, EPS, PNG, etc. Because of restrictions on the conversion from one format to the other, the use of the data in a specific format has been limited as well. Usually, the data size of multimedia is large such as video; therefore, multimedia data often require a large storage.