ICS 2303 MULTIMEDIA SYSTEMS

CHAPTER 4 MULTIMEDIA APPLICATIONS DEVELOPMENT

Multimedia systems Development Life Cycle

- Phases:
  - Planning and Costing.
  - Design.
  - Developing and Producing.
  - Testing and debugging.
  - Delivering.

Planning and Costing

- The main concerns for this phase are to:
  - Capture the ideas and requirements of the developer and clients.
  - Identify the potential audience and users of the application.
  - Find out the benefit that will gain from developing the application.
  - Evaluate feasibility and costs of the entire project.

Planning and Costing

- The most important thing to keep in mind during this stage is to strike a balance between benefits and cost.
- Checklist for capturing the ideas and requirements are:
  - Who will be your end users?

Planning and Costing

- More checklists:
  - What is your purposed message?
  - How can you organize your project?
  - What multimedia elements will best deliver your message?
  - Do you already have content material with which you can leverage your project?

Planning and Costing

- More checklists:
  - Is your idea derivative from an existing theme which can be enhanced with multimedia, or will you create something new?
  - What hardware is available for your development and is it enough?
  - How much storage do you have and how much do you need?

Planning and Costing

- More checklists:
  - What multimedia software is available to you?
  - What are your capabilities and skills with both the hardware and software?
  - Can you do it alone? Who can help you?
  - How much time do you have?

Planning and Costing

- More checklists:
  - How much money do you have?
  - Who will distribute your final project?

Planning and Costing

- The most important considerations are:
  - Hardware.
  - Software.
  - Contents.
  - Skills.

Hardware

- This is the most limiting factor for both development time and users.
  - Very poor sound output device or even no sound device.
  - Limited amount of storage.
  - Very narrow network bandwidth.

Software

- The cost of development software is fairly high.
- The cost of software required in delivering to the end users may add up to large sum.

Contents

- Developers can use existing material or produce them from scratch.
- Existing material may not match the developers requirements.
- If existing material are copyrighted, permission may not be granted.

Contents

- Producing new material is expensive and time-consuming.
- It is important to develop a prototype before starting a full-scale development.

Skill

- Multimedia application development require broad skill:
  - Computer skill.
  - Artistic skill.
  - Application domain skill.

Designing

- Design is a creative activity.
- It requires:
  - The knowledge and skill with the computer.
  - Talent in graphics arts, video and music.
  - Knowledge of the subject area of the application.

Designing

- Storyboards describe the project in exact detail using words and sketches for each screen images, sound, and navigational choice.
- Storyboarding can be very detail, sketching out every screen, right down to specific colour and shade, text contents and attributes.

Designing

- Storyboards can be designed using:
  - Computer tools.
  - Pen and paper

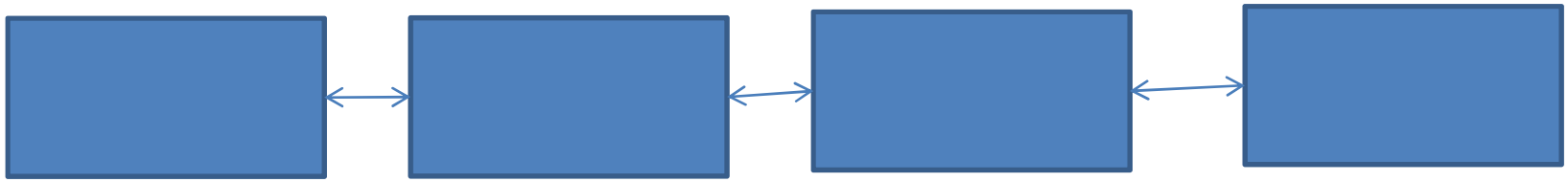
Design - Architecture

- Architecture is the arrangement of the multimedia information.
- A well-organized document will help the user locate information more efficiently.
- The architecture design should start early.

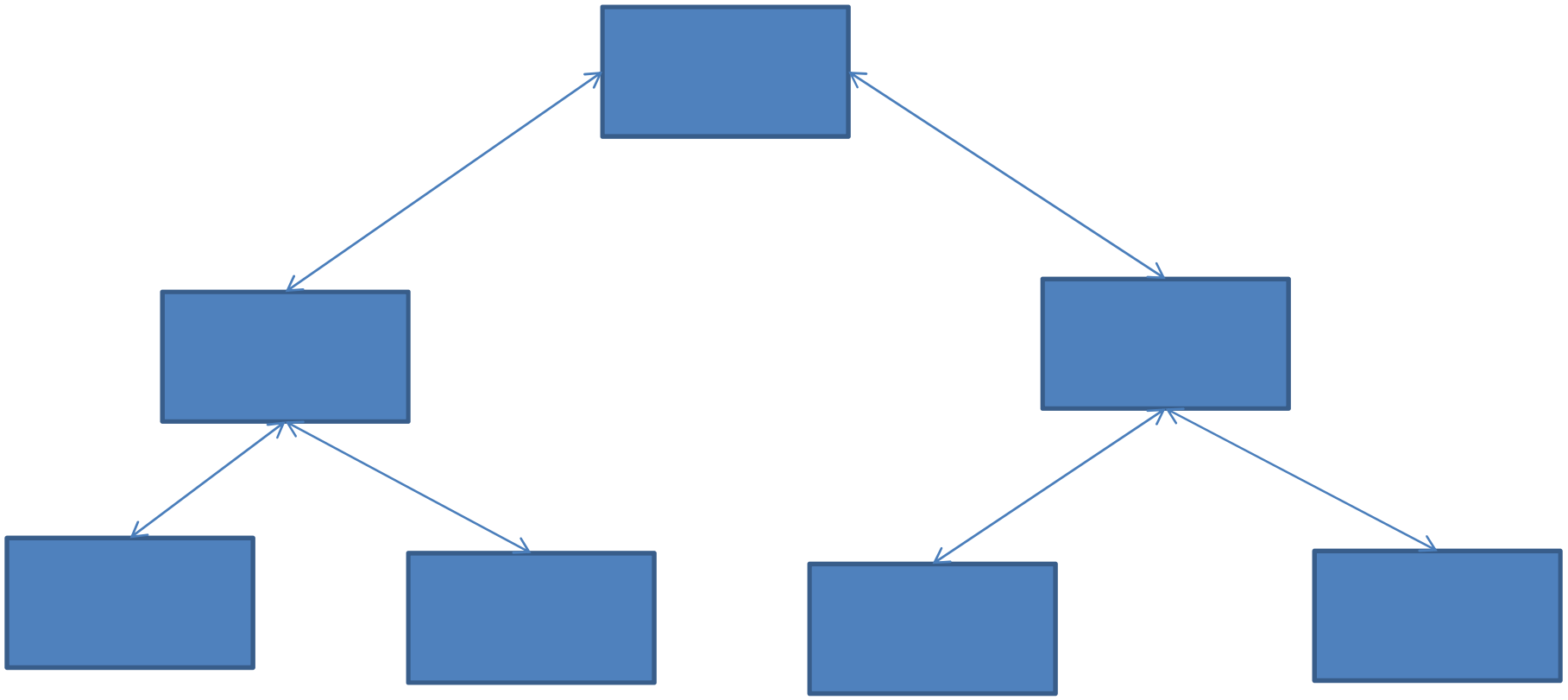
Design: Architecture

- Types of architecture:
  - Linear
  - Hierarchy.
  - Nonlinear.
  - Composite.

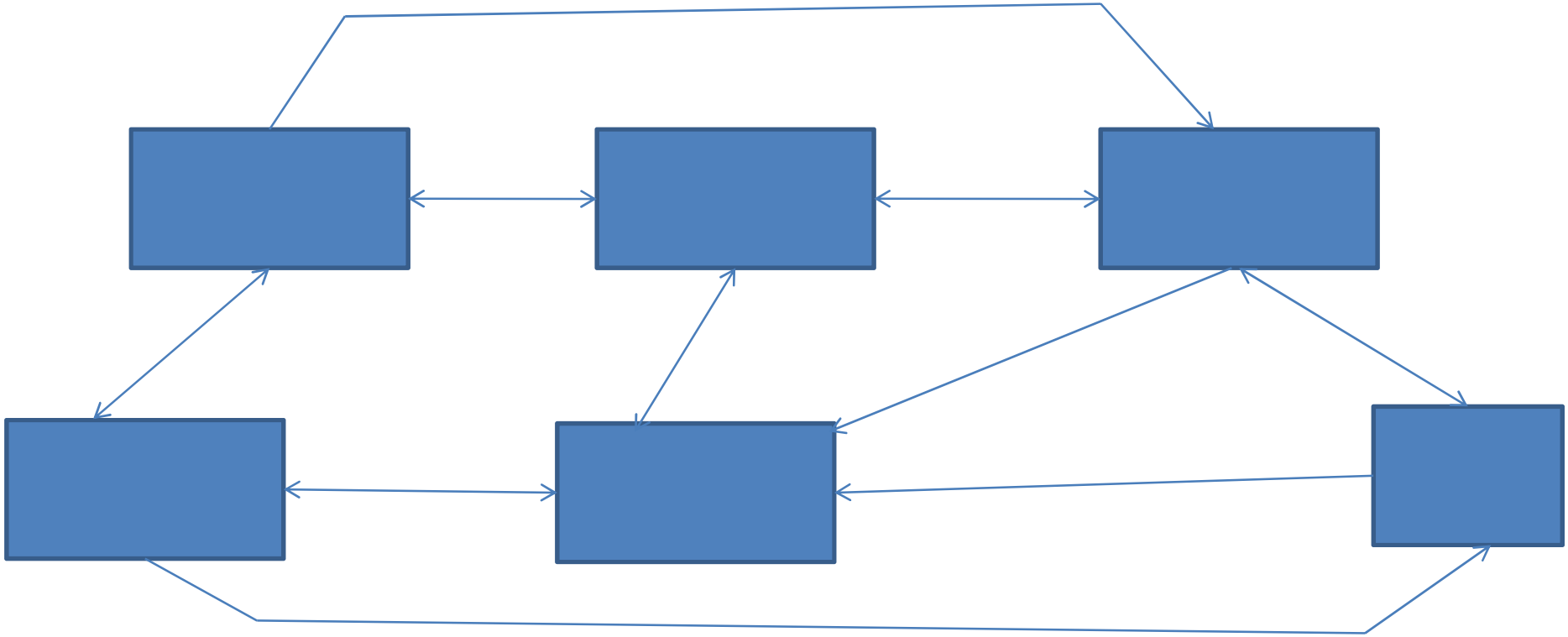
Linear Architecture



Hierarchy



Nonlinear Architecture



Design : Interface

- The main emphasis in the design of multimedia user interface is multimedia presentation.
- Content selection is the key to convey the information to the user.

Design : Interface

- Contents can be influenced by the constraints imposed by the:
  - Size and complexity of the presentation.
  - Quality of the information.
  - Limitation of the display hardware.
  - Need for presentation completeness and coherence.

Design : Interface

- Media must be chosen to be adequate e.g. to present a course on how to drive a car, graphics and video are more suitable than text only.
- User-friendliness is the primary goal of multimedia interface.

Developing and Producing

- Production is the phase when your multimedia project is actually rendered.
- The tasks to be performed in this phase are:
  - Acquiring all media elements.
  - Composing the elements according to the storyboard.

Developing and Producing

- This is the phase when artistic talent and technical knowledge are high in demand.
- You need to set up a method of tracking your media elements.
- You need to set up a method of tracking the progress of your work.

Developing and Producing

- You need a way (or an expert) of solving your technical problems quickly.
- If you acquire content from somewhere, it is important who has the right of the work.

Testing and debugging

- Like all other software, testing is an important and time-consuming phase.
- Alpha testing is typically an internal activity as software is tested by in-house development team.

Testing and debugging

- Beta testing involves a wide range of testers:
  - They should be representative of real users.
  - They should not include persons who have been involved in the production of the project.

Testing and debugging

- A multimedia application may be used:
  - By many different users, many of them know very little about computers.
  - On a variety of different platforms and configurations, many different hardware and software.
- Therefore, it is very important to test the product in a wide range of configurations.

Delivering

- Plan for the delivery very early in the development process.
- Currently, CD-ROMs and Internet are the most popular means of delivering multimedia applications.

Delivering

- According to the means of delivery and the target audience, plan how the application is to be installed and used.

Delivering

- Include all the elements in the distribution.
  - All media elements.
  - Run-time libraries.
  - Drivers.
  - Helper programs e.g. acrobat reader.
  - Installation programs, compression and decompression programs.

The end