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Coimbatore- 49

DEPARTMENT OF COMMERCE WITH INFORMATION TECHNOLOGY

21UCI507 -Business Information Technology

Output Devices

Mrs.M.Viveka, MCA., M.Phil., (Ph.D).,

Assistant Professor,

Department of Commerce with Information Technology

Output Devices

Hardware components that receive data from the computer and convert it into a form that users can understand, such as text, images, sound, or video.

Functions of Output Devices

- Display processed information
- Convert digital data into human-readable form
- Provide visual or audio feedback
- Help users interact with the computer system

Types of Output Devices

1. Monitor (Visual Display Unit - VDU)

Displays text, images, and videos on the screen.

Types:

- CRT Monitor
- LCD Monitor
- LED Monitor
- OLED Monitor

Uses:

- Viewing documents
- Watching videos
- Gaming and graphics work

Types of Output Devices

2. Printer

Produces hard copy output on paper.

Types of Printers: 2 types

- Impact Printers
  - Dot Matrix Printer
- Non-Impact Printers
  - Inkjet Printer
  - Laser Printer

Uses:

- Printing reports
- Certificates
- Bills and invoices

Types of Output Devices

3. Speakers

Convert digital signals into sound.

Uses:

- Playing music
- Video audio
- System alerts

4. Headphones

Personal audio output device.

Uses:

- Private listening
- Online meetings
- Gaming

Types of Output Devices

5. Projector

Displays computer output onto a large screen or wall.

Uses:

- Classrooms
- Seminars
- Presentations

6. Plotter

Produces high-quality drawings and large graphics.

Uses:

Engineering designs

Architectural maps

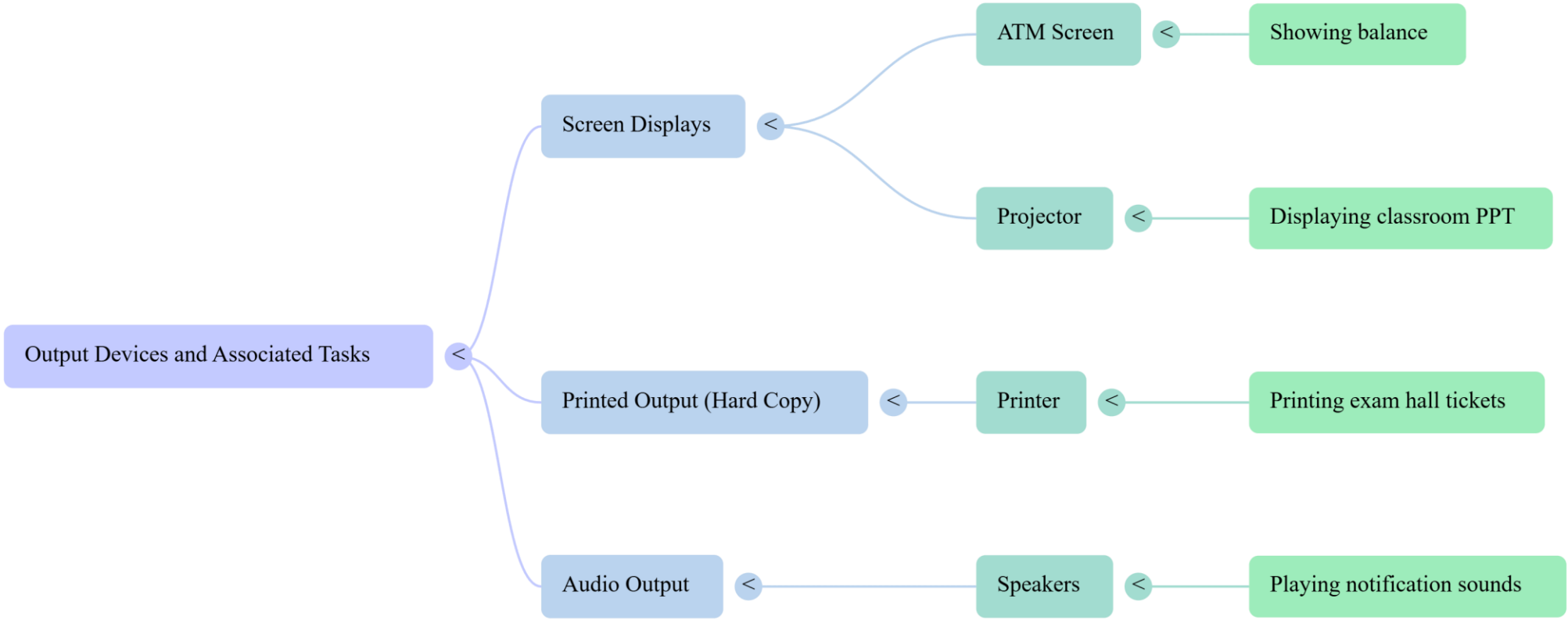
Classification based on Output

Output Type	Device Example
Visual	Monitor, Projector
Audio	Speakers, Headphones
Hard Copy	Printer, Plotter

Advantages of Output Devices

- Easy data interpretation
- Improved communication
- Provides quick results
- Enhances user experience

Mind map-Real-life Examples



Output Devices-Case Study

Improving a Smart Classroom Display System Using Output Devices

1. Empathize (Identify the Need)

A college wants to modernize its classrooms. Faculty members face several issues:

- Projectors take a long time to start.
- Chalkboards are not visible to students sitting at the back.
- Audio is unclear during presentations.
- Students cannot clearly view diagrams, animations, or videos.

2. Define (State the Core Problem)

The college needs an output system that:

- Displays content clearly to all students.
- Supports multimedia (video/audio).
- Works quickly without frequent maintenance.
- Improves student engagement.

Output Devices-Case Study

3. Ideate (Brainstorm Output Device Options)

The team explores different output devices:

Output Device	Advantages	Limitations
Projector	Large display area, good for presentations.	Needs low lighting; bulbs burn out.
LED Smart TV / Panel	Bright display, high clarity, quick ON/OFF.	More expensive for large screen sizes.
Speakers	Clear audio enhances understanding.	Needs proper placement.
Interactive Whiteboard	Touch-based interaction, annotations.	High cost & training required.
Monitors for Students	Personalized display for each learner.	Very expensive & space-consuming.

Output Devices-Case Study

4. Prototype (Build the Setup)

A small classroom is converted using selected output devices:

- A **75-inch LED smart panel** is installed.
- **Two wall-mounted speakers** are placed for even sound distribution.
- The panel is connected to a teacher's laptop for presentations, videos, and animations.
- Interactive tools like **digital pen annotations** are tested.

5. Test (Evaluate and Improve)

The system is tested for two weeks.

Observations:

- Students at the back now see text and images clearly.
- Videos and animations are bright and engaging.
- Teachers save time as the display turns ON instantly.
- Audio is loud and clear during lectures.

Feedback & Improvements:

- Add **wireless screen sharing** for teachers and students.
- Place **acoustic panels** to reduce echo.
- Provide **training** for teachers to use interactive features.

Output Devices-Case Study

Final Outcome

The upgraded smart classroom with modern output devices resulted in:

- Better student engagement and understanding.
- Clear visuals and improved audio quality.
- Faster and smoother teaching workflow.
- Enhanced overall learning experience.

Output Devices

Next Topic:

Introduction to Computer Software