

The screenshot shows a mobile device displaying a presentation slide from Neso Academy. The top navigation bar includes the Neso Academy logo, a search icon, and a more options icon. Below the navigation, the breadcrumb trail shows the path: Home > Computer Science > Introduction to Computer Networks (PPT). The main content area displays a slide titled "Introduction to Computer Networks". The slide has a dark green background. At the top left, there is a blue button labeled "CHAPTER - 1". The main title "Introduction to Computer Networks" is centered in a large, white, serif font. At the bottom left of the slide, the "Neso Academy" logo is visible. The bottom of the screen shows the presentation's footer.

Neso Academy

Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

CHAPTER - 1

Introduction to Computer Networks

Neso Academy

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, the text 'Computer Science > Introduction to Computer Networks (PPT)', and a dropdown menu 'Introduction to Computer Networks'. To the right of the menu are page numbers '11 / 267' and search icons. Below the navigation bar, the title 'Target Audience' is displayed in yellow text next to a target icon. The main content area contains a bulleted list of four items, each preceded by a star icon:

- ★ Preparing for GATE
- ★ Preparing for networking interview
- ★ Prerequisite to CCNA international cert
- ★ Demystify networking technologies an

A large, empty rectangular box is positioned below the list.

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon with a plus sign and a magnifying glass icon with a minus sign.

The slide content consists of four bullet points, each preceded by a circular icon containing a checkmark:

- Networks support the way we work
- Networks support the way we communicate
- Networks support the way we learn
- Networks support the way we play

The screenshot shows a dark-themed web page from Neso Academy. At the top, there's a navigation bar with a house icon, the text "Computer Science", and "Introduction to Computer Networks (PPT)". Below this is a dropdown menu for "Introduction to Computer Networks". To the right of the menu are page navigation controls showing "11 / 267" and search icons. The main content area features two sections: "Problem Solving" with a notepad icon and "Simulation using Cisco packet tracer" with a gear icon. A large, semi-transparent watermark with the text "Neso Academy" and a logo is visible across the center of the page.

The screenshot shows a presentation slide with the following details:

- Header: Home > Computer Science > Introduction to Computer Networks (PPT)
- Section: Introduction to Computer Networks
- Page Number: 11 / 267
- Search icons: magnifying glass and refresh
- Content:
 - ★ Chapter 2: Data Link Layer
 - ★ Chapter 3: Network Layer
 - ★ Chapter 4: Transport Layer
 - ★ Chapter 5: Application Layer
 - ★ Chapter 6: Network Security

The screenshot shows a presentation slide with the following details:

- Page Header:** Introduction to Computer Networks | Neso Academy
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon with a plus sign.
- Close:** A magnifying glass icon with a minus sign.

The slide content includes:

- ★ Understand "What is computer network"
- ★ Identify end devices and intermediate devices

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are visible.
- Text Content:**

A node can be a computer, printer sending/receiving data generated by other

Example for nodes:
- Background:** A dark background with a faint watermark of a person's face.

Introduction to Computer Networks

Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

The link carries the information.

Wired Link



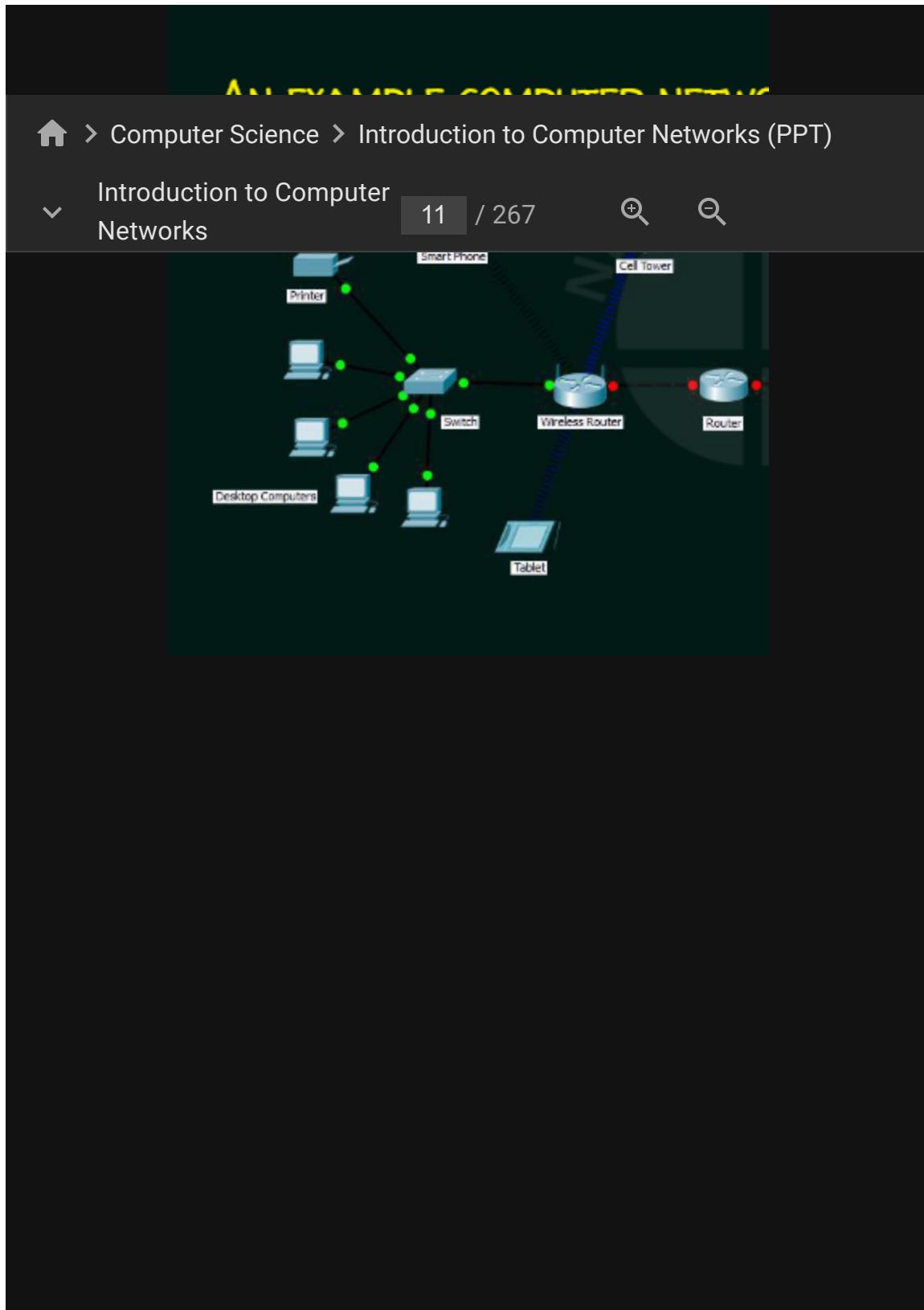
The screenshot shows a presentation slide with the following details:

- Title Bar:** Introduction to Computer Networks
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are visible.

The slide content includes:

- A large text box containing the sentence: "The link carries the information."
- A table with two rows:

Links (Medium)	Wired: Cable
	Wireless: Air



The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with icons for home, back, forward, and search, followed by the text "Computer Science > Introduction to Computer Networks (PPT)". Below this is a breadcrumb navigation showing "Introduction to Computer Networks". On the right side of the slide header, there are search and refresh icons. The slide content is titled "END DEVICES" in yellow capital letters. A table lists five types of end devices:

END DEVICES
PC
Printer
Server
Tablet
Smart Phone

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon with a plus sign and a magnifying glass icon with a minus sign.

The main content of the slide is a list of learning objectives:

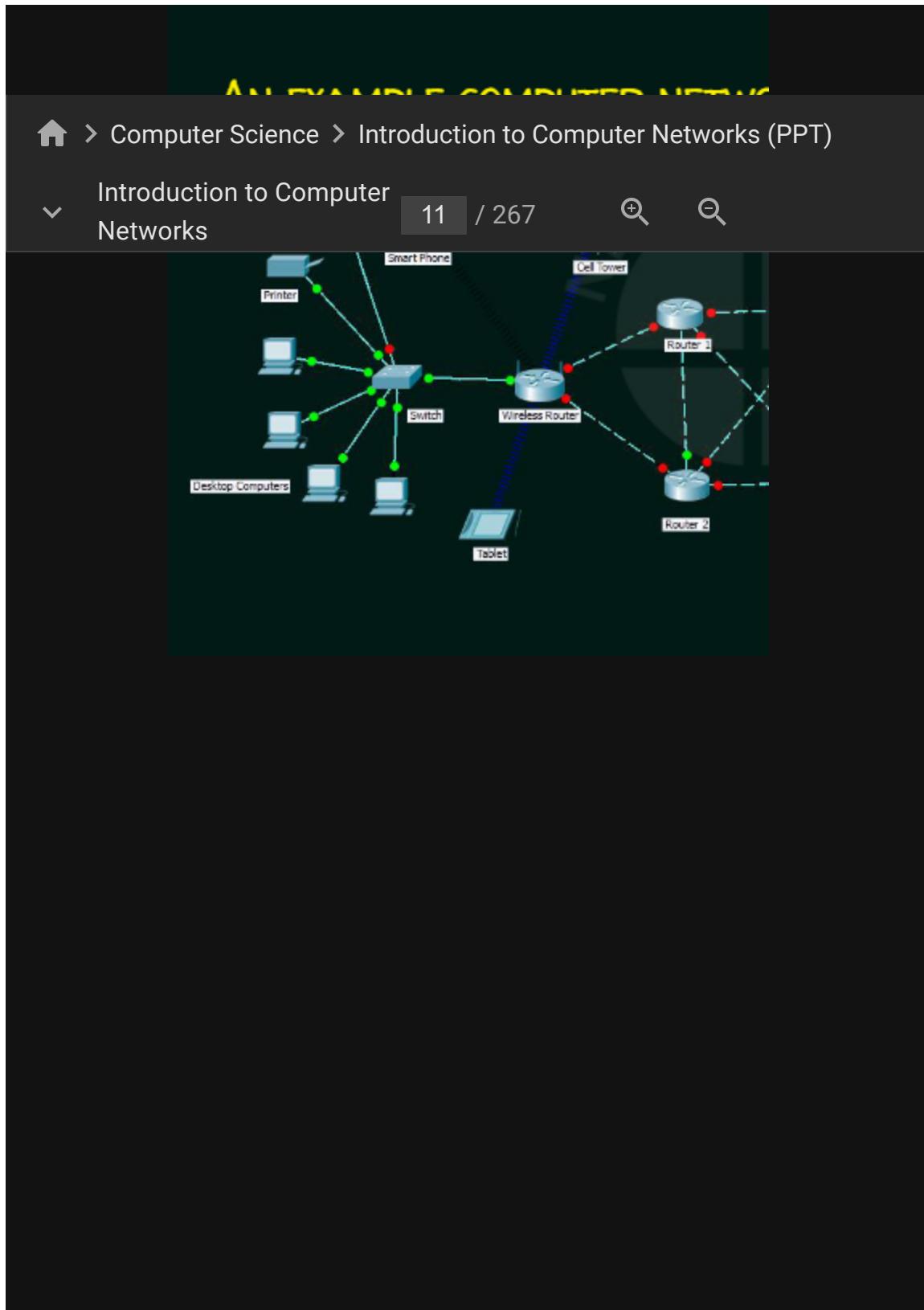
- ★ Understand the need for fault tolerance
- ★ Understand the need for scalable networks
- ★ Understand Quality of Service (QoS)
- ★ Know the importance of security in networks

The screenshot shows a presentation slide with a dark green header bar. The header contains the text 'Basic Computer Networks' in yellow. Below the header, the navigation bar includes a home icon, a breadcrumb trail ('Computer Science > Introduction to Computer Networks (PPT)'), a dropdown menu ('Introduction to Computer Networks'), page numbers ('11 / 267'), and search icons.

The main content area displays three bullet points, each preceded by a white star:

- ★ Scalability
- ★ Quality of Service (QoS)
- ★ Security

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'Fault Tolerance' is displayed in large, bold, yellow text. To the left of the title, there is a dropdown menu with the text 'Introduction to Computer Networks'. On the right side of the title, there is a page number '11 / 267' and two search icons. The main content of the slide consists of two numbered points: '1. Continue working despite failures' and '2. Ensure no loss of service'. The text for these points is partially obscured by a dark red rectangular overlay.



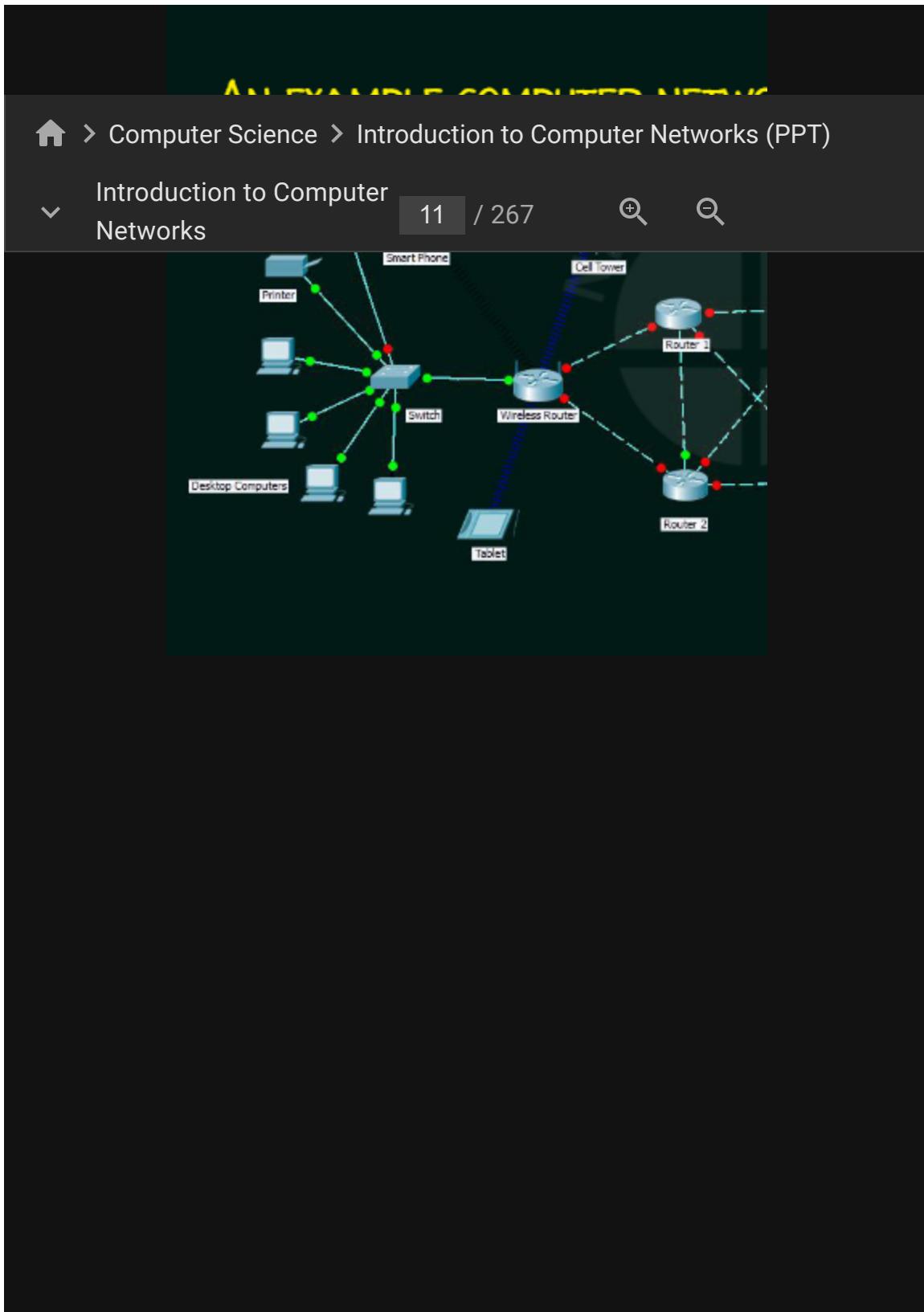
The screenshot shows a presentation slide from a website. The title bar at the top has a dark green background with the text 'Computer Networks' in white. Below the title bar, the main content area has a dark background with a large, semi-transparent watermark of a person's face.

The navigation bar at the top left includes a home icon, a 'Computer Science' category, and the current page title 'Introduction to Computer Networks (PPT)'. To the right of the title are search and refresh icons.

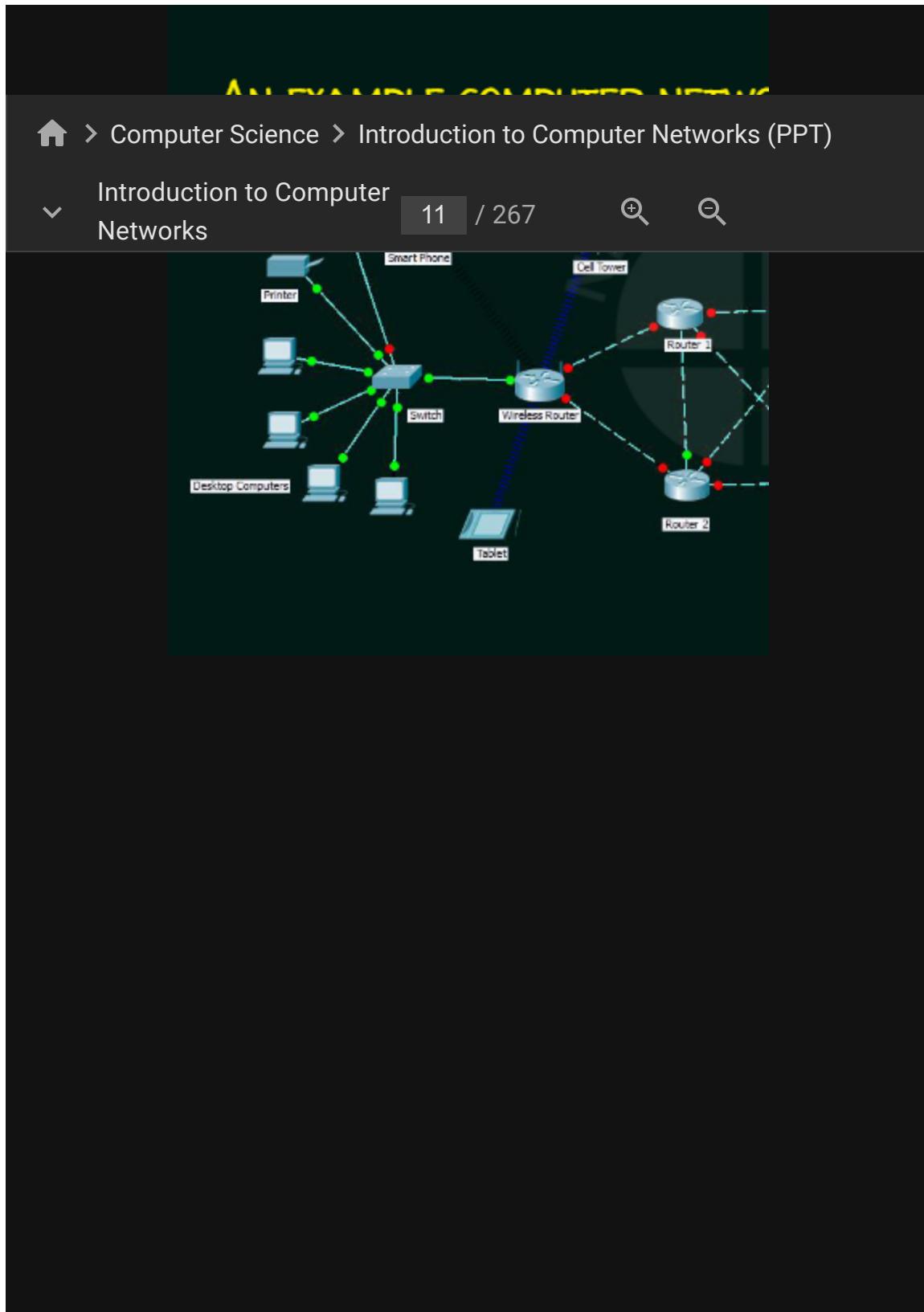
The slide content area displays the first slide of a presentation. The slide title is 'Introduction to Computer Networks'. Below the title, there is a list of two points:

1. Grow based on the needs
2. Have good performance after growth

The image shows a presentation slide from Neso Academy. The title bar at the top reads 'Computer Networks - Part 1'. Below the title, the navigation path is 'Home > Computer Science > Introduction to Computer Networks (PPT)'. A dropdown menu for 'Introduction to Computer Networks' is open. The slide content features a map of the Americas, specifically highlighting North America and South America. The map is dark with white outlines of the continents. In the top right corner of the slide area, there are two search icons: a magnifying glass and a question mark.



The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, the text 'Computer Science > Introduction to Computer Networks (PPT)', and a dropdown menu 'Introduction to Computer Networks'. To the right of the menu are page numbers '11 / 267' and search icons. The main content area has a title 'Quality of Service (QoS)' in yellow, followed by a list of two items: '1. Set Priorities' and '2. Manage data traffic to reduce data loss'.



The screenshot shows a presentation slide with the following details:

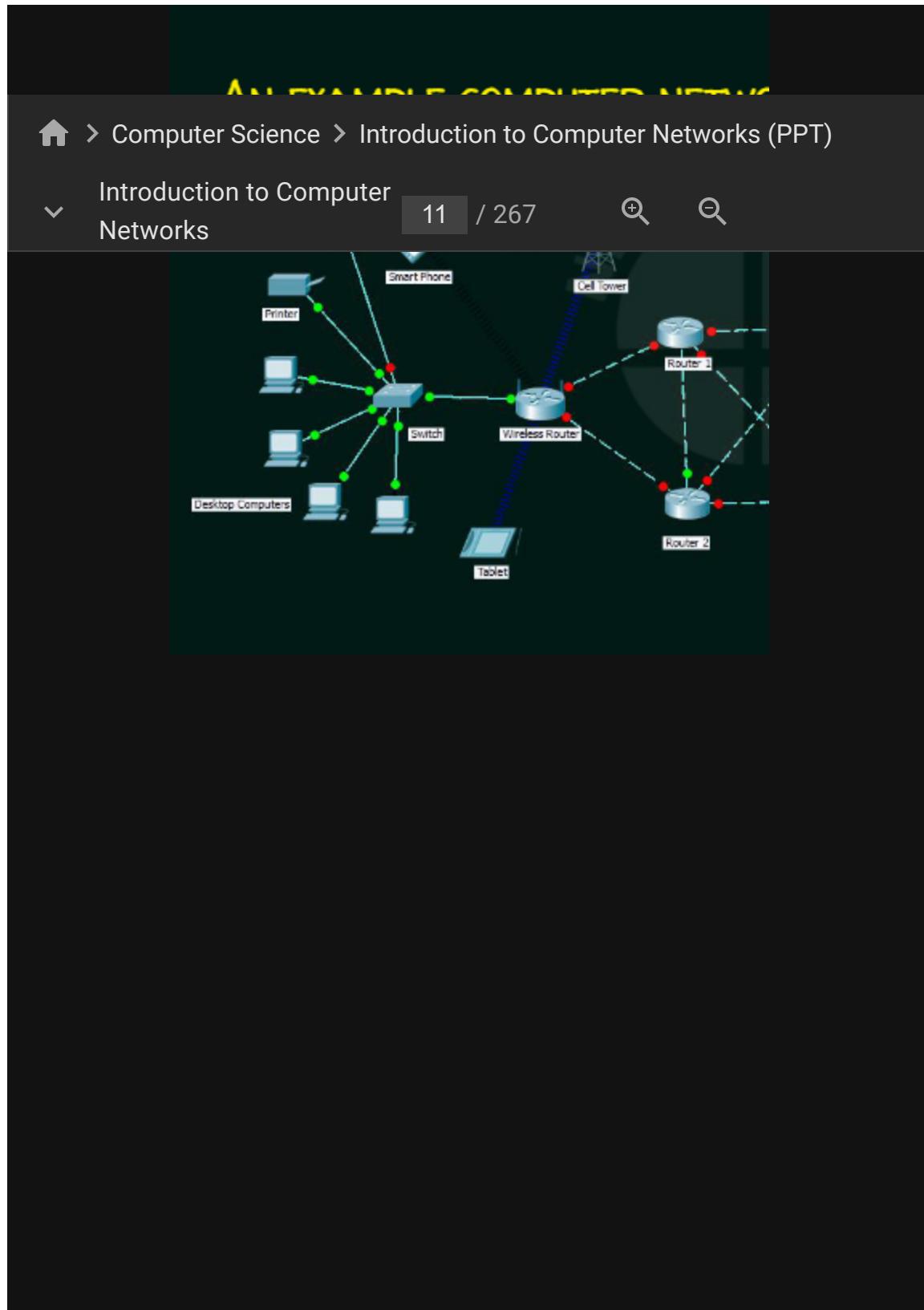
- Title Bar:** Introduction to Computer Networks (PPT)
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section Header:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are visible.
- Content:** A list of two items:
 1. Set Priorities
 2. Manage data traffic to reduce data

The screenshot shows a presentation slide with the following content:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Information:** 11 / 267
- Search:** Two search icons are present.
- Content:**
 - ★ Unauthorized access
 - ★ Misuse
 - ★ Forgery

The ability to provide:

 - ★ Confidentiality
 - ★ Integrity
 - ★ Availability



The screenshot shows a presentation slide with the following content:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Information:** 11 / 267
- Search:** Two search icons are present.
- Content:**
 - ★ Unauthorized access
 - ★ Misuse
 - ★ Forgery

The ability to provide:

 - ★ Confidentiality
 - ★ Integrity
 - ★ Availability

The screenshot shows a presentation slide with a dark green header bar. The header contains the text 'Basic Computer Networks' in yellow. Below the header, the navigation bar includes a home icon, a breadcrumb trail ('Computer Science > Introduction to Computer Networks (PPT)'), a dropdown menu ('Introduction to Computer Networks'), page numbers ('11 / 267'), and search icons.

The main content area displays three bullet points, each preceded by a white star:

- ★ Scalability
- ★ Quality of Service (QoS)
- ★ Security

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are present.
- Content:** A list of four learning objectives, each preceded by a star icon.
 - ★ Know "What is Data Communication?"
 - ★ Understand data flow.
 - ★ Understand the importance of protocols.
 - ★ Know the elements of protocol.

Data Communication

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

via some form of link (transmission)



This slide is part of a presentation titled 'Introduction to Computer Networks (PPT)'. The title bar indicates it is slide 11 of 267. The main content on the slide is the text 'via some form of link (transmission)' and includes a simple icon of a computer monitor connected by a horizontal line.

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below this is a search bar with a magnifying glass icon and a dropdown menu labeled 'Introduction to Computer Networks'. The main content area has a title 'Data Flow' in yellow at the top left. The slide contains two bullet points under a section heading 'Data Flow':

- ★ Half Duplex.
- ★ Full Duplex.

The screenshot shows a presentation slide with the following details:

- Page Title:** Data Flow Control
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon with a plus sign.
- Help:** A question mark icon.

The slide content includes:

- Text:** One device can transmit and the other
- Text:** Example : Keyboards, Traditional monitor

The screenshot shows a presentation slide with the following details:

- Title Bar:** Data Flow in a Network
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon with a plus sign.
- Text Content:**

If one device is sending, the other can only receive.

Example : Walkie-Talkies.

The screenshot shows a presentation slide from a website. At the top, there's a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the slide title is 'Introduction to Computer Networks'. The slide content includes the following text:

Device can send and receive at the same time.

Example : Telephone line.

The screenshot shows a presentation slide with the following details:

- Title:** Data Flow
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon with a plus sign.
- Help:** A question mark icon.

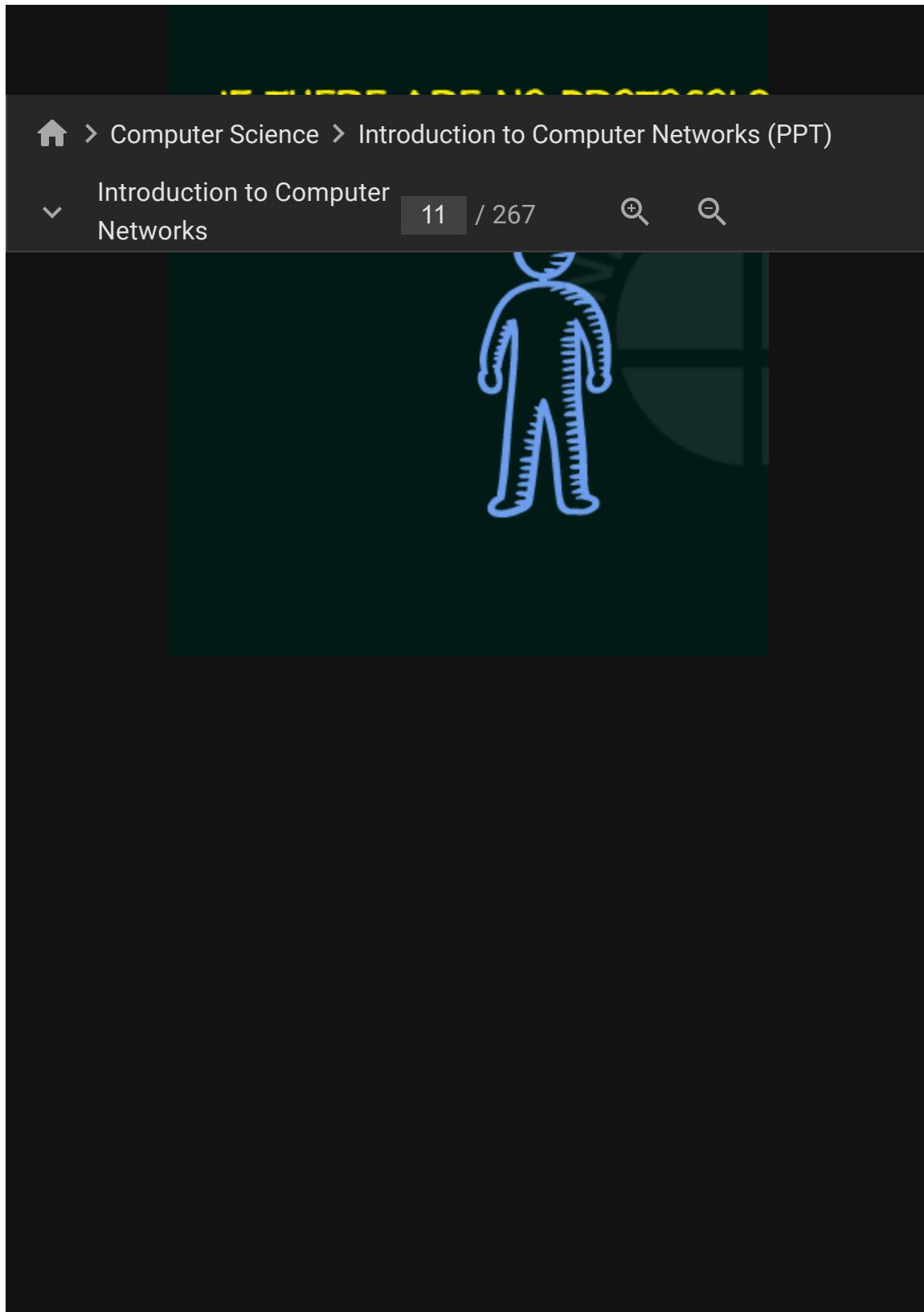
The slide content includes a white computer monitor icon on the left and two lines of binary code on the right:

```
01110111011001100101010  
011001011011011101
```

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below this, a dropdown menu is open, showing 'Introduction to Computer Networks'. To the right of the menu, there is a page number '11 / 267' and two search icons. The main content area contains a list of three items, each preceded by a star symbol:

- ★ Source or sender
- ★ Destination or receiver
- ★ Channel or media

Below the list, a partially visible text block reads: "Rules or protocols govern all methods of communication between computers."



The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, the text 'Computer Science > Introduction to Computer Networks (PPT)', a dropdown menu 'Introduction to Computer Networks', a page number '11 / 267', and two search icons.

The main content area has a title 'Protocol' in large yellow text at the top. Below it, a subtitle reads 'IT IS A SET OF RULES THAT GOVERN DATA COMMUNICATION'. The slide contains the following text:

Protocol determines:

- What is communicated?**
- How it is communicated?**
- When it is communicated?**

The screenshot shows a presentation slide with a dark green header bar. The header contains the title 'Protocol - Human Communication' in yellow text. Below the header, the navigation bar includes a home icon, a breadcrumb trail ('Computer Science > Introduction to Computer Networks (PPT)'), a dropdown menu ('Introduction to Computer Networks'), page numbers ('11 / 267'), and search icons.

The main content area features a white background with a list of four bullet points, each preceded by a star symbol:

- ★ An identified sender and receiver
- ★ Common language and grammar
- ★ Speed and timing of delivery
- ★ Confirmation or acknowledgment required

Below the list is a small, stylized white icon of a person standing.

The screenshot shows a presentation slide with the following content:

Introduction to Computer Networks (PPT)

Key concepts

- ★ Message encoding
- ★ Message formatting and encapsulation
- ★ Message timing
- ★ Message size
- ★ Message delivery options

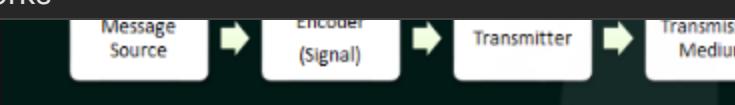
The screenshot shows a presentation slide with a dark green header containing the title 'Elements of a Protocol'. Below the header, there is a navigation bar with icons for home, back, forward, and search, followed by the text 'Computer Science > Introduction to Computer Networks (PPT)'. A dropdown menu is open, showing the path 'Introduction to Computer Networks'. The main content area displays a list of five points:

2. Message formatting and encapsulation
3. Message timing
4. Message size
5. Message delivery options

1 Message Encoding

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267



The diagram illustrates the message encoding process. It consists of four rectangular boxes arranged horizontally, each containing a label and a green right-pointing arrow. The first box is labeled 'Message Source'. The second box is labeled 'Encoder (Signal)'. The third box is labeled 'Transmitter'. The fourth box is labeled 'Transmission Medium'. The arrows indicate a sequential flow from the source through the encoder, transmitter, and finally to the medium.

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'Message Encapsulation' is displayed in yellow. The main content area contains the following text:

Encapsulate the information header, rightly.

The screenshot shows a presentation slide with the following details:

- Title Bar:** The title bar at the top of the slide reads "Introduction to Computer Networks".
- Breadcrumbs:** The breadcrumb navigation indicates the path: Home > Computer Science > Introduction to Computer Networks (PPT).
- Section Header:** The main section header is "Introduction to Computer Networks".
- Page Number:** The page number is 11 / 267.
- Search Function:** There are two search icons: one for magnifying glass and one for a question mark.
- Text Content:** The slide contains text about message fragmentation, stating: "Long messages must also be broken into smaller pieces before being sent over a network." Below this text are two small, simple line-art icons of human figures standing side-by-side.

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'Introduction to Computer Networks' is displayed with a dropdown arrow. The slide itself has a dark green header containing the text 'Response Timeout.' in white. The main content area features a white computer monitor icon with a blue horizontal line extending from its screen. The page number '11 / 267' is visible in the top right corner of the slide area.

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below this, a dropdown menu is open, showing 'Introduction to Computer Networks'. On the right side of the navigation bar, there are search icons and page navigation controls showing '11 / 267'. The main content area of the slide has a green header bar with the text 'E - Multicast & Broadcast'. The main body of the slide contains two bullet points, each preceded by a star: '★ Multicast' and '★ Broadcast'. The slide is set against a background image of a network diagram.

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, the text 'Computer Science > Introduction to Computer Networks (PPT)', a dropdown menu for 'Introduction to Computer Networks', a page number '11 / 267', and two search icons.

The main content of the slide is titled 'E - Multicast & Broadcast'. Below the title, there are two bullet points, each preceded by a star icon:

- ★ Multicast
- ★ Broadcast

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below this, a dropdown menu is open, showing 'Introduction to Computer Networks'. On the right side of the navigation bar, there are icons for search and refresh. The slide itself has a title 'E - Multicast & Broadcast' at the top. Below the title, there are two bullet points, each preceded by a star: '★ Multicast' and '★ Broadcast'. The 'Broadcast' point is highlighted with a blue rectangular box.

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon with a plus sign.
- Download:** A magnifying glass icon with a downward arrow.

The slide content includes two bullet points:

- ★ Understand protocols and its role in computer networks
- ★ Understand Peer-to-Peer network

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, the text 'Computer Science > Introduction to Computer Networks (PPT)', a dropdown menu 'Introduction to Computer Networks', a page number '11 / 267', and two search icons.

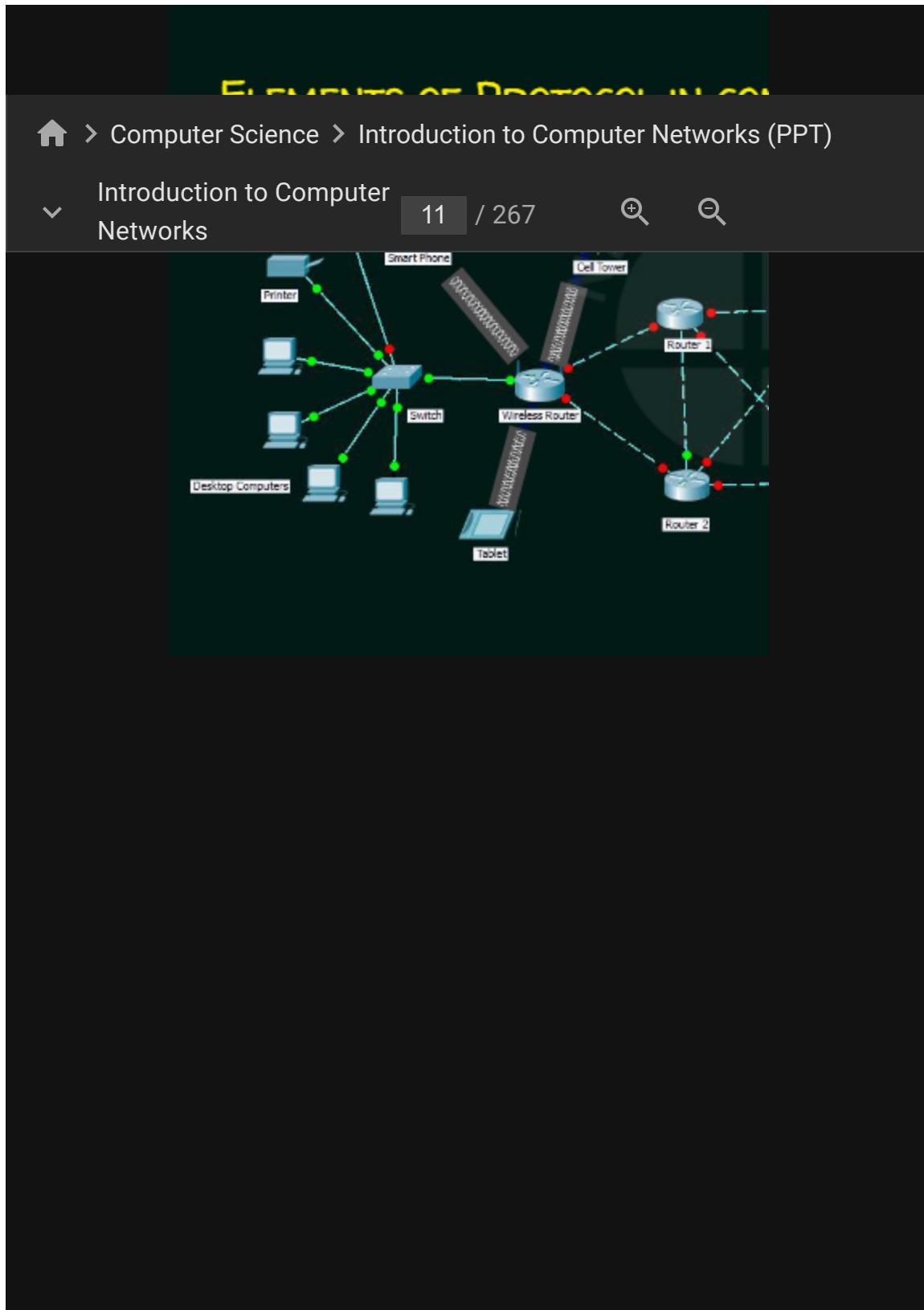
The main content area has a title 'Protocol' in large yellow text at the top. Below it, a subtitle reads 'IT IS A SET OF RULES THAT GOVERN DATA COMMUNICATION'. The slide contains the following text:

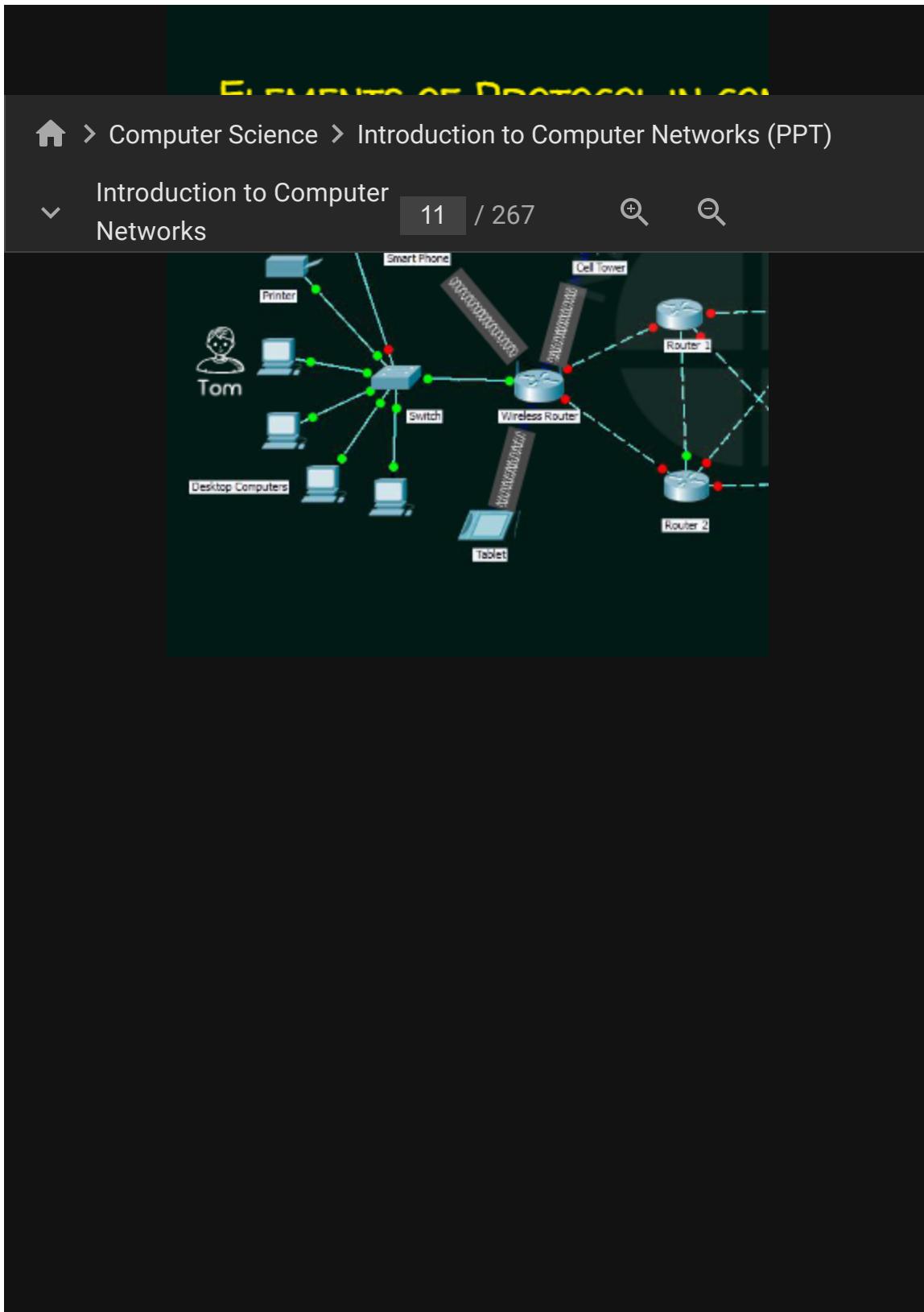
Protocol determines:

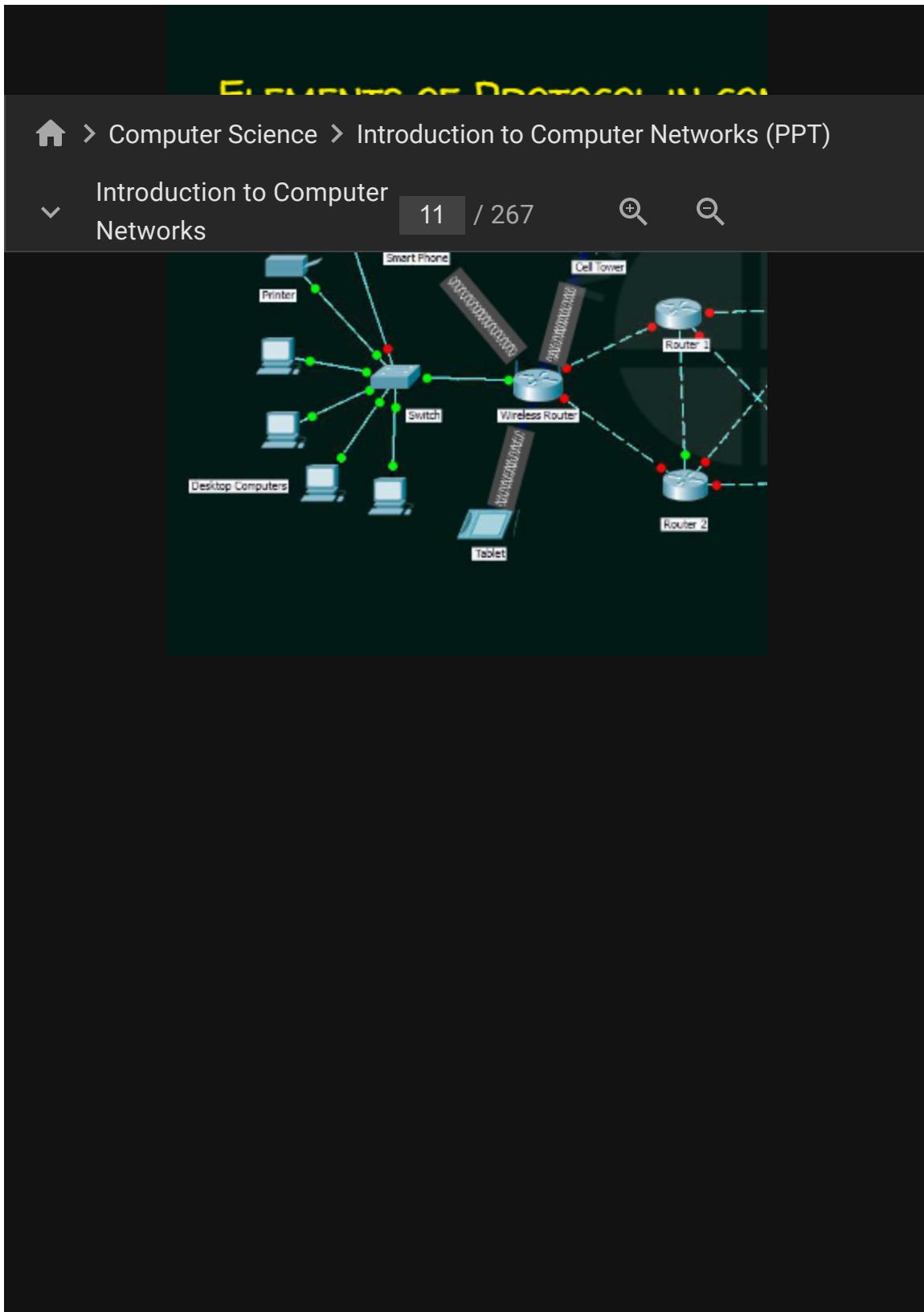
- What is communicated?**
- How it is communicated?**
- When it is communicated?**

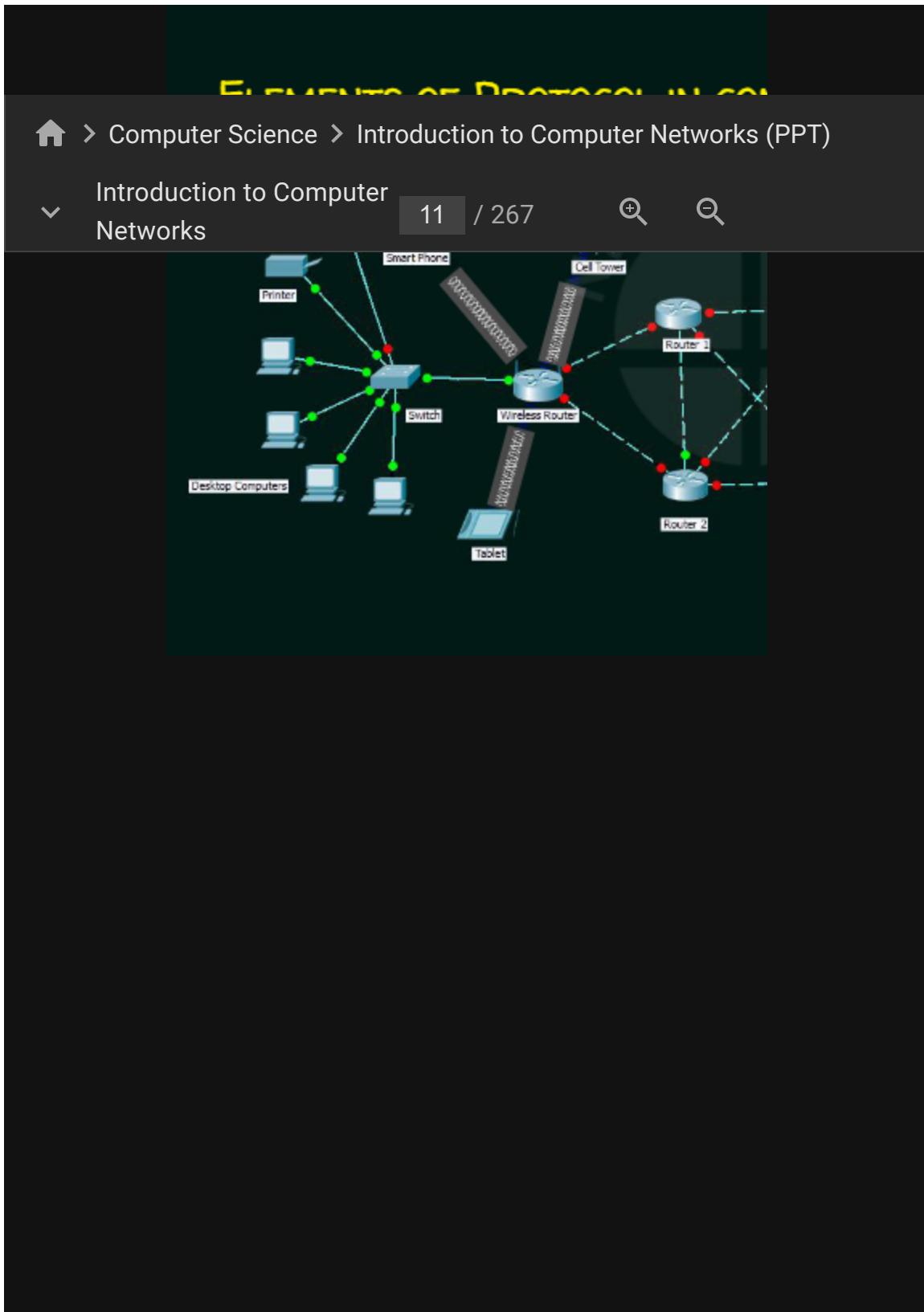
The screenshot shows a presentation slide with a dark green header containing the title 'Elements of a Protocol'. Below the header, there is a navigation bar with icons for home, back, forward, and search, followed by the text 'Computer Science > Introduction to Computer Networks (PPT)'. A dropdown menu is open, showing the path 'Introduction to Computer Networks'. The main content area displays a list of five points:

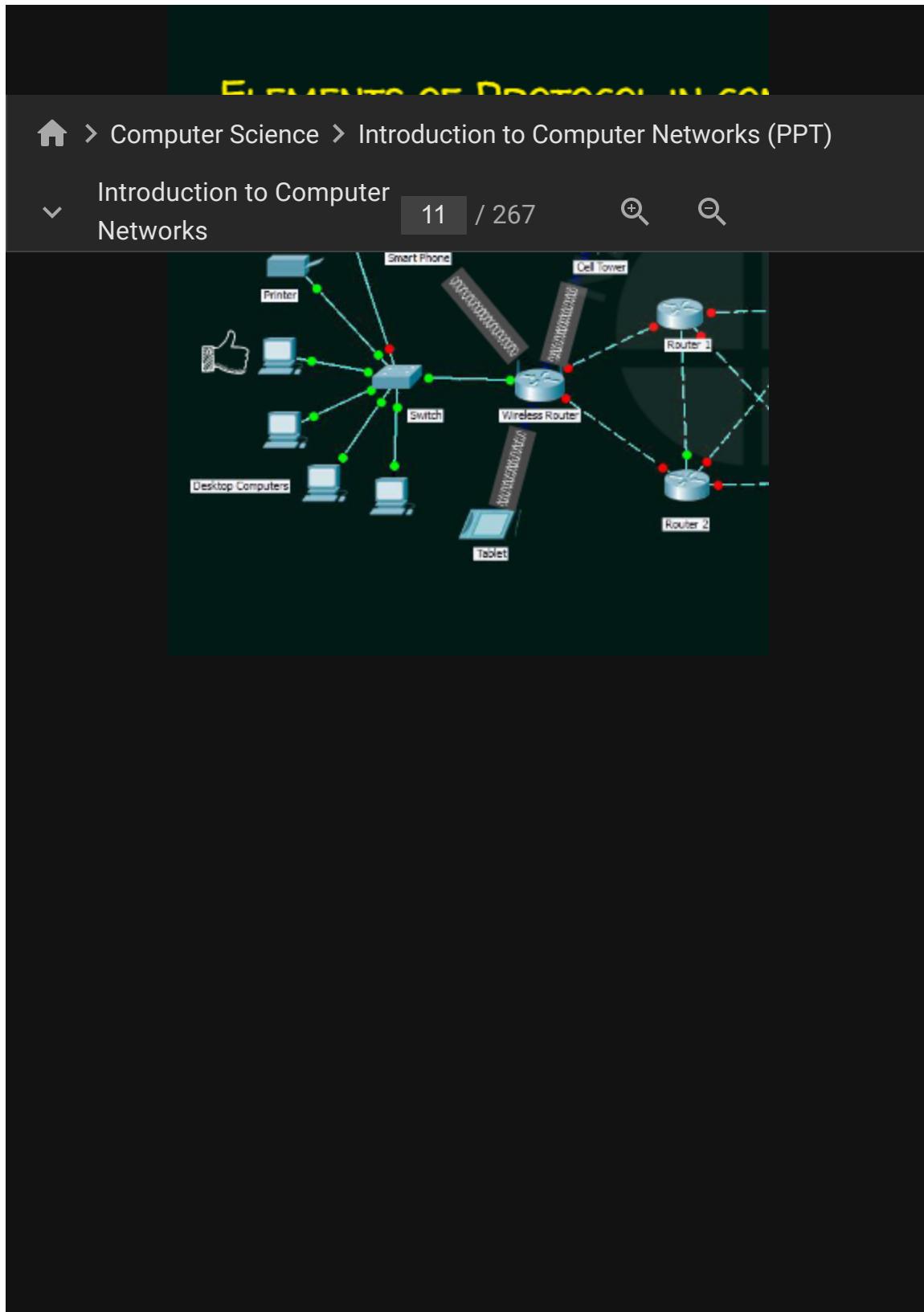
2. Message formatting and encapsulation
3. Message timing
4. Message size
5. Message delivery options

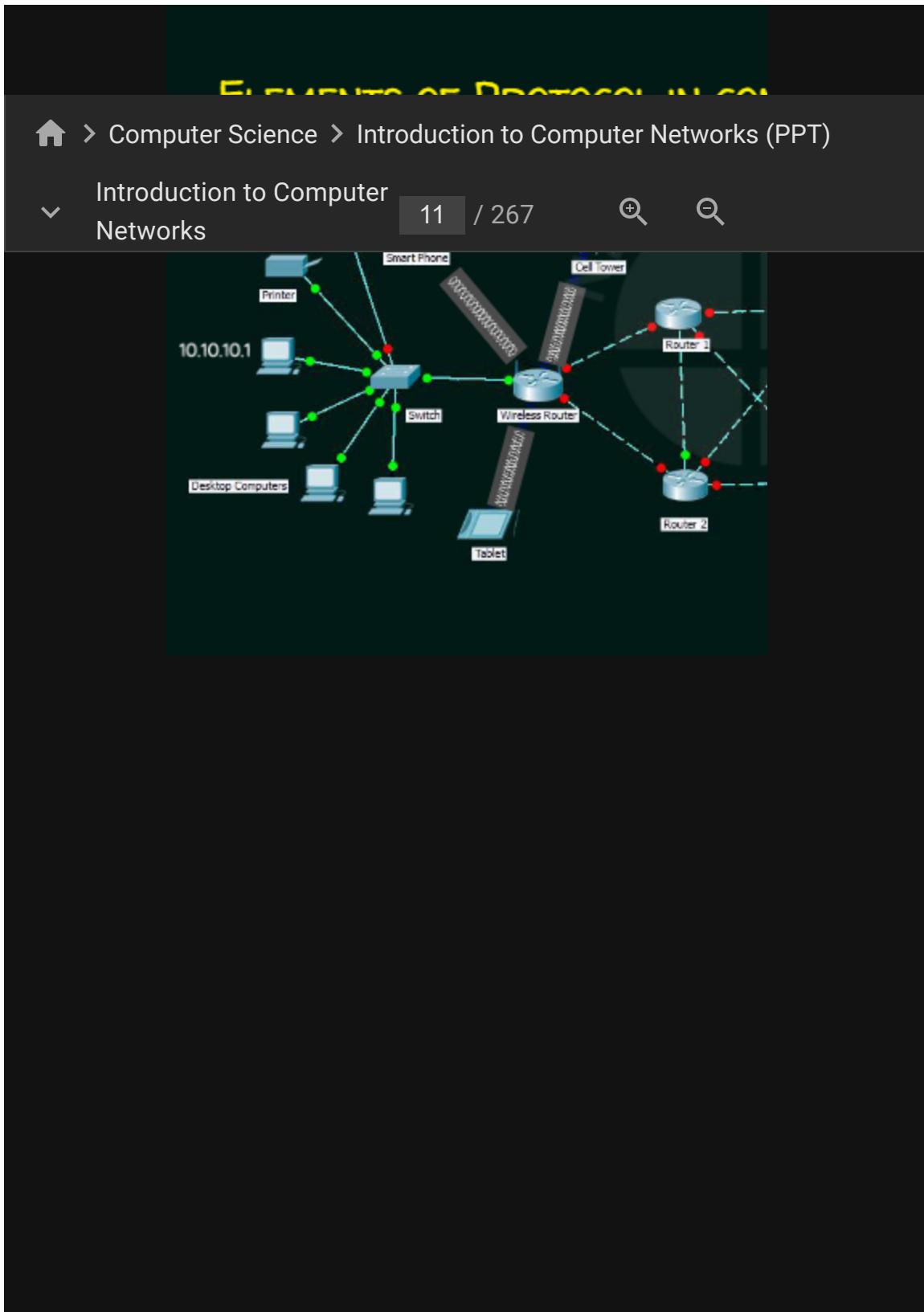


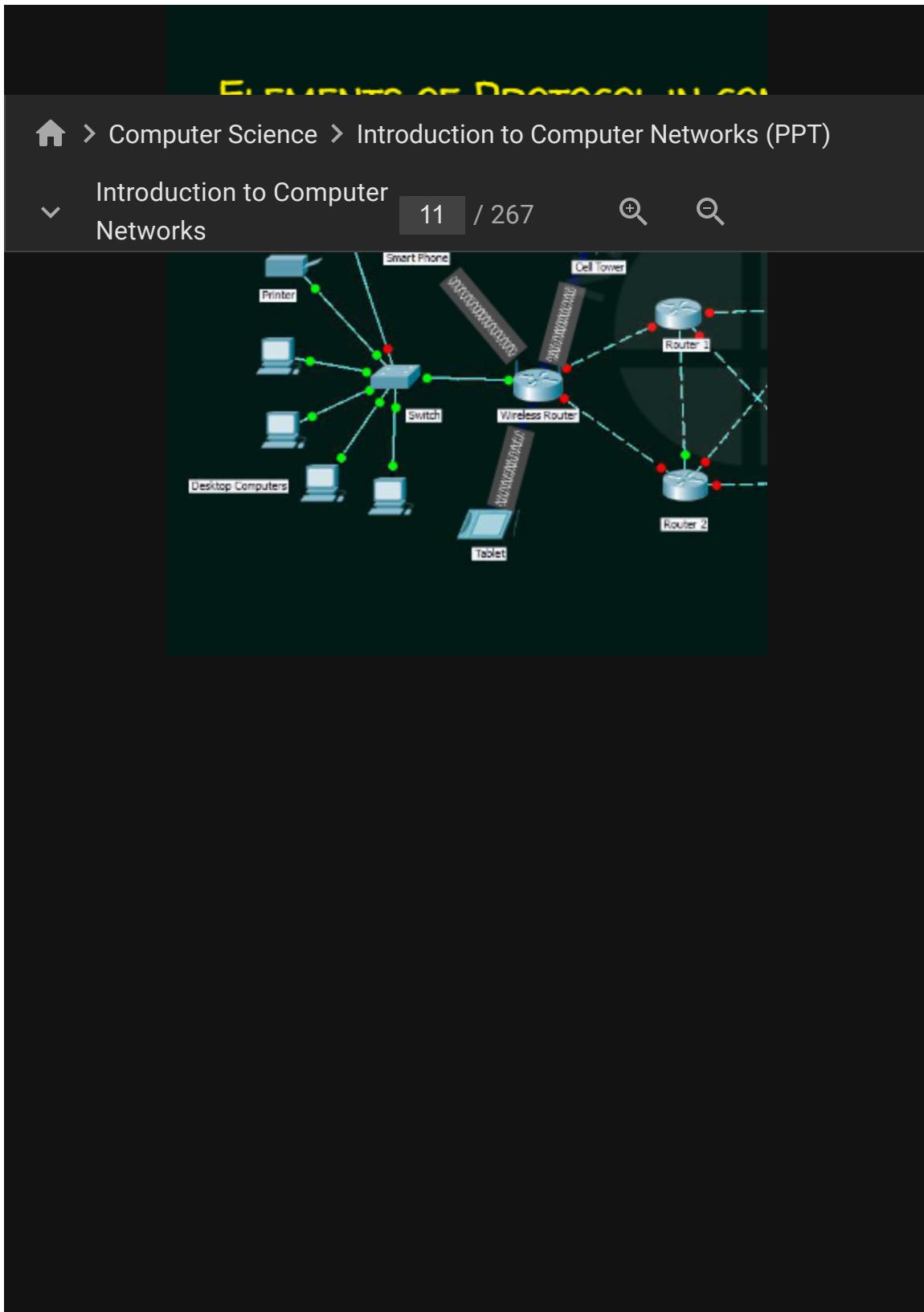


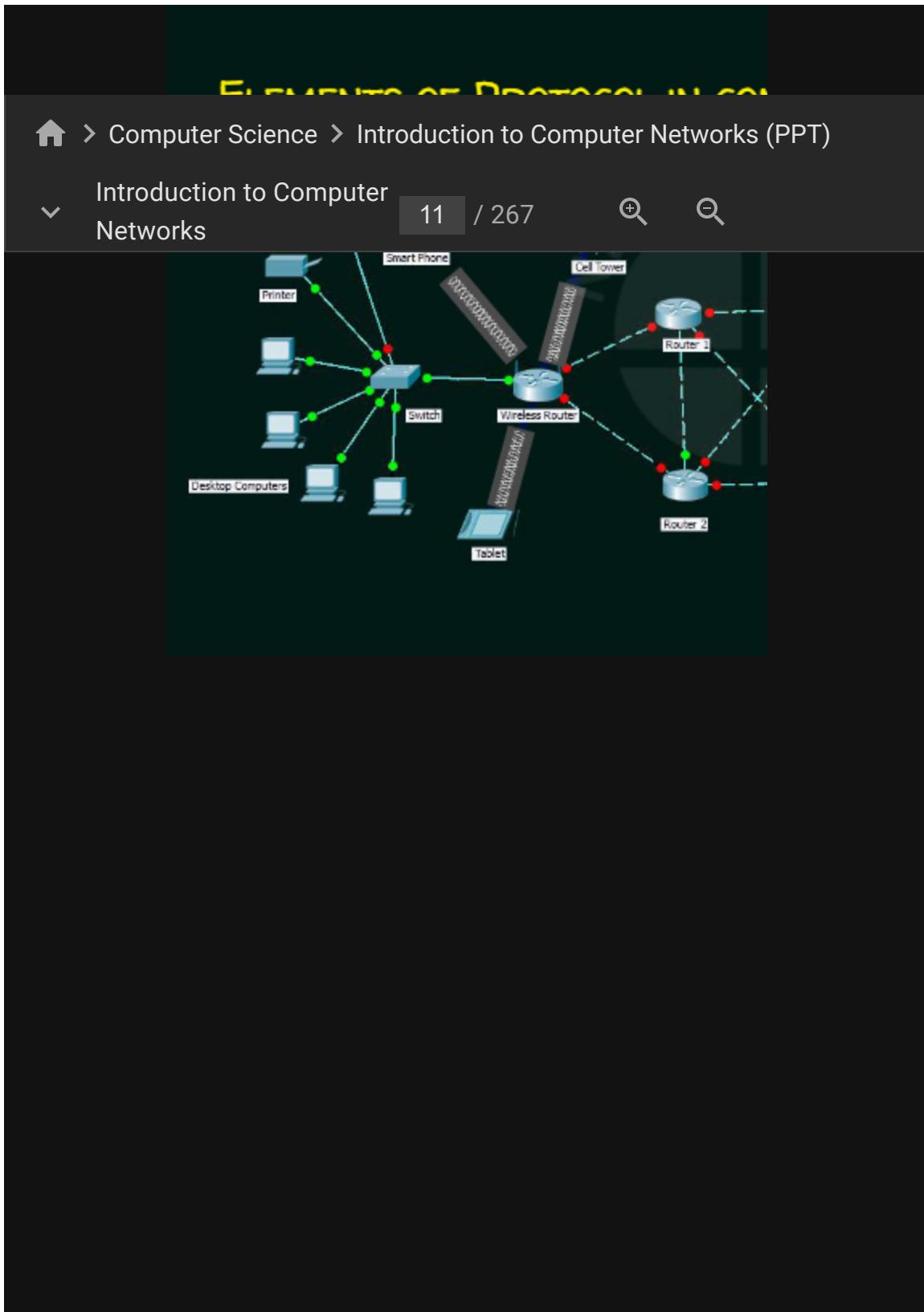


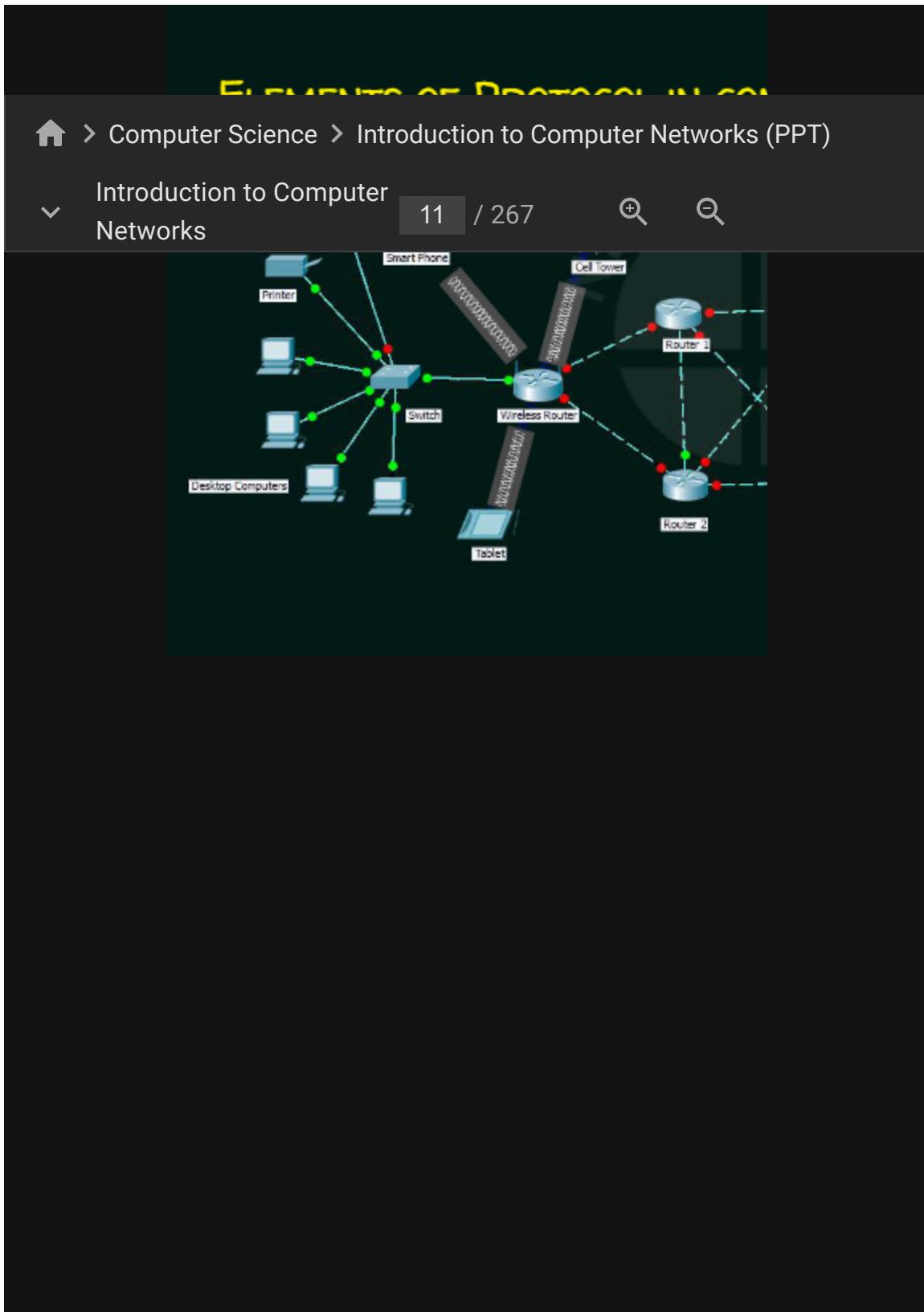












The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below this is a search bar with a magnifying glass icon and a dropdown menu showing 'Introduction to Computer Networks'. The main content area contains three bullet points:

- ★ All peers are equal.
- ★ Simple sharing applications.
- ★ Not scalable.

The screenshot shows a presentation slide with the following details:

- Title Bar:** Computer Networks
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon with a plus sign.
- Text Content:**
 - ★ Request-Response model.
 - ★ Scalable.
 - ★ Server may be overloaded.

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon with a plus sign.
- Help:** A question mark icon.

The slide content is a list of learning objectives:

- ★ Understand nodes in computer networks
- ★ Understand different media in computer networks
- ★ Understand various services offered by computer networks

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, the text 'Computer Science > Introduction to Computer Networks (PPT)', a dropdown menu for 'Introduction to Computer Networks', page numbers '11 / 267', and search icons.

The main content of the slide is titled 'COMPONENTS OF A COMPUTER' in large, bold, yellow letters. Below the title, there is a list of components:

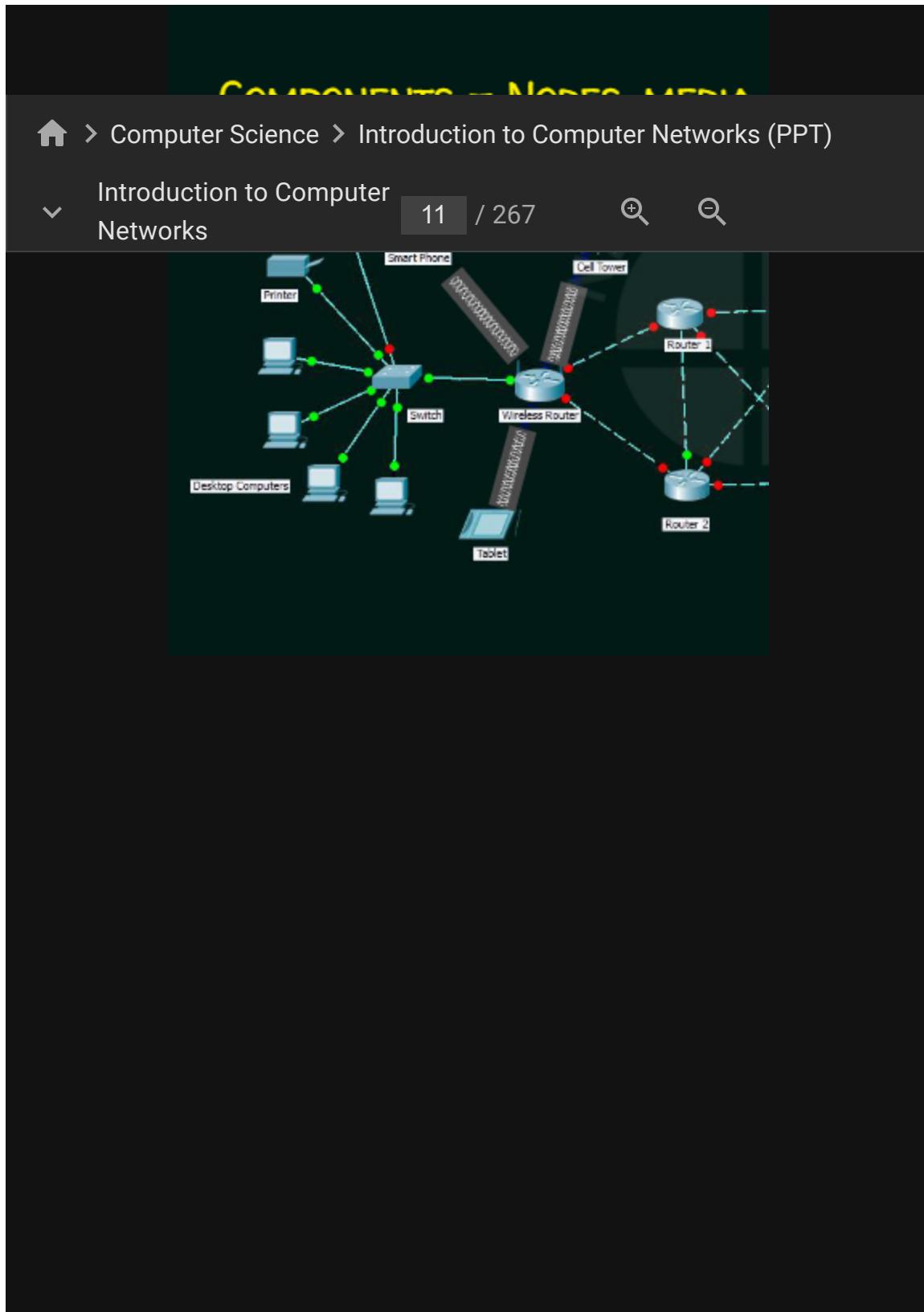
- 2. Media
- 3. Services

A screenshot of a presentation slide from Neso Academy. The slide has a dark green header bar with the text '1 Neso' in white. Below the header, there is a breadcrumb navigation bar showing the path: Home > Computer Science > Introduction to Computer Networks (PPT). To the right of the path is a dropdown menu for 'Introduction to Computer Networks'. The main content area shows the first slide of the presentation, which has a dark green background and the text 'Intermediary nodes.' in white. There are some faint, illegible shapes in the background of the slide.

The screenshot shows a presentation slide with the following content:

- Ex: Non-Computer devices**
- Computer Science > Introduction to Computer Networks (PPT)
- Introduction to Computer Networks
- 11 / 267
- SEARCH icon
- QUESTION icon
- NETWORK PRINTERS**
- VoIP Phones
- Telepresence endpoint
- Security cameras
- Mobile handheld devices (Smart phone, debit/credit card reader, barcode scanner)

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the main title 'Introduction to Computer Networks' is displayed in large, bold, white text. Underneath the title, there are three sub-sections listed in white text: 'Wireless Access Point', 'Routers', and 'Security Devices (Firewall)'. The slide number '11 / 267' is visible in the top right corner, along with two search icons.



The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below this, a dropdown menu is open, showing 'Introduction to Computer Networks'. To the right of the menu are page navigation icons (left arrow, right arrow, double left, double right) and search icons. The main content area has a dark green header with the title 'Wireless Medium (Unguided Medium)' in white text. The rest of the slide is mostly blank.

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the slide title 'Introduction to Computer Networks' is displayed with a dropdown arrow. To the right of the title is a page number '11 / 267'. Further to the right are two search icons. The main content area of the slide lists four types of cables: 'Ethernet crossover cable', 'Fiber Optic cable', 'Coaxial cable', and 'USB cable'. The text is white and appears to be part of a larger, partially visible diagram or image.

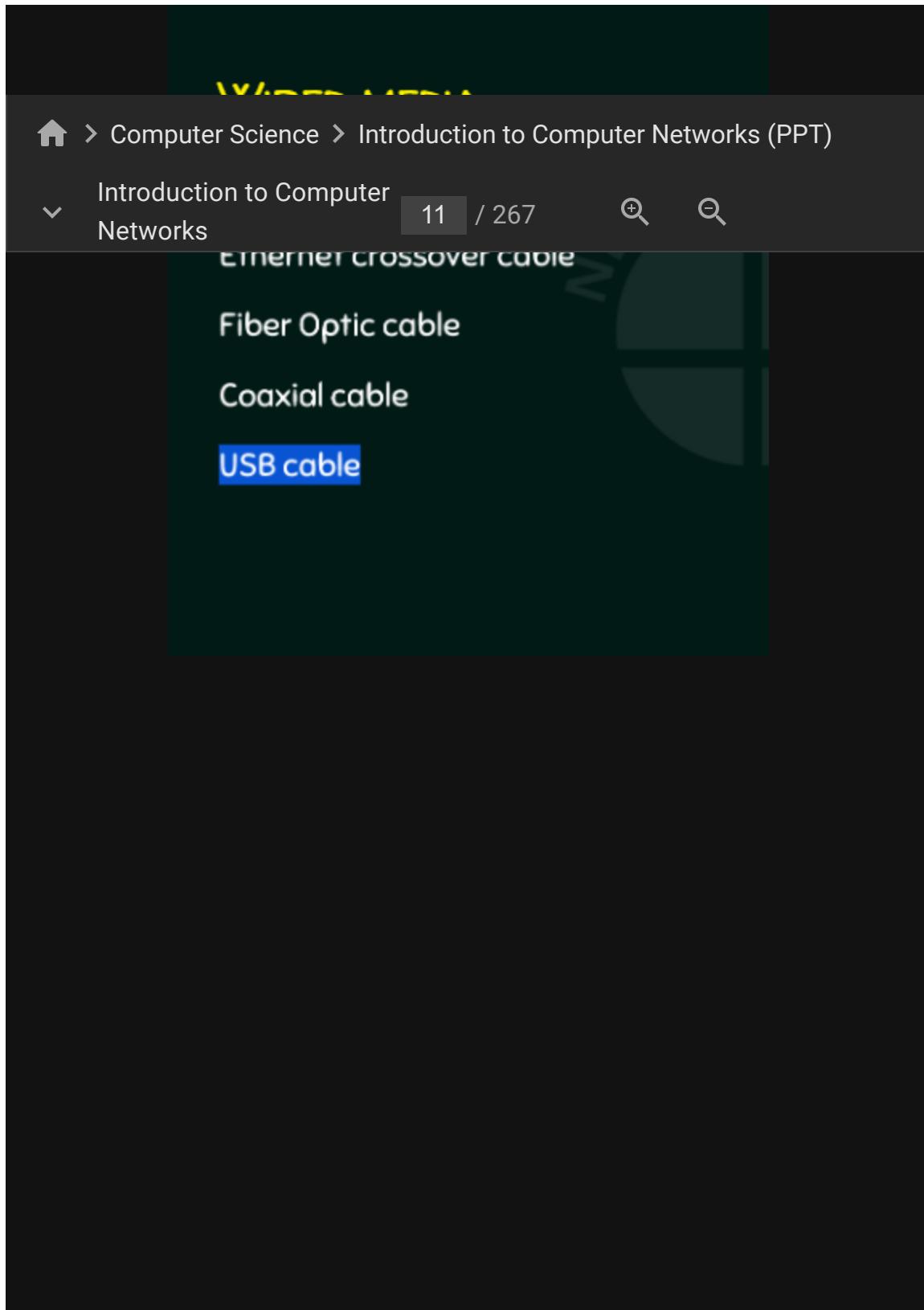
The screenshot shows a presentation slide with the following details:

- Page Header:** Introduction to Computer Networks | Neso Academy
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are present.
- Content:** The slide lists four types of cables:
 - Ethernet crossover cable
 - Fiber Optic cable
 - Coaxial cable
 - USB cable

The screenshot shows a presentation slide with the following details:

- Page Header:** Introduction to Computer Networks | Neso Academy
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A search bar with a magnifying glass icon.
- Content:** A list of network cable types:
 - Ethernet crossover cable
 - Fiber Optic cable
 - Coaxial cable
 - USB cable

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the main title 'Introduction to Computer Networks' is displayed with a dropdown arrow. To the right of the title is a page number '11 / 267'. Further to the right are two search icons. The main content area contains four items listed vertically: 'Ethernet crossover cable', 'Fiber Optic cable', 'Coaxial cable' (which is highlighted in blue), and 'USB cable'. The 'Coaxial cable' item is enclosed in a blue rectangular box.



The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the main title 'Introduction to Computer Networks' is displayed with a dropdown arrow. The slide content includes three bullet points: 'Radio (Example: Bluetooth, Wi-Fi)', 'Microwaves (Example: Cellular System)', and 'Satellite (Example: Long range communication)'. The first bullet point is fully visible, while the others are partially cut off at the bottom. The page number '11 / 267' is located in the top right corner of the slide area.

Introduction to Computer Networks

Home > Computer Science > Introduction to Computer Networks (PPT)

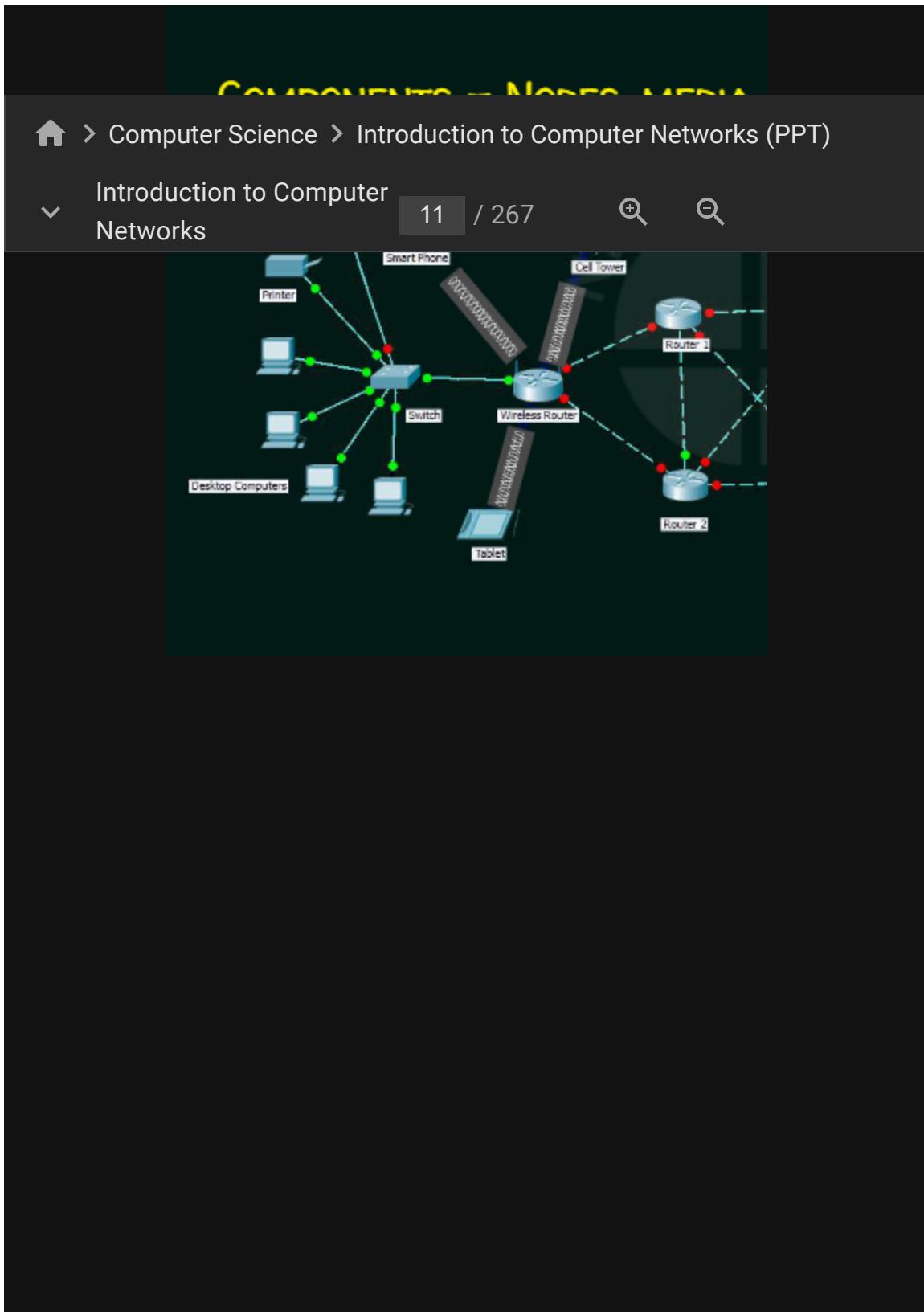
Introduction to Computer Networks

11 / 267

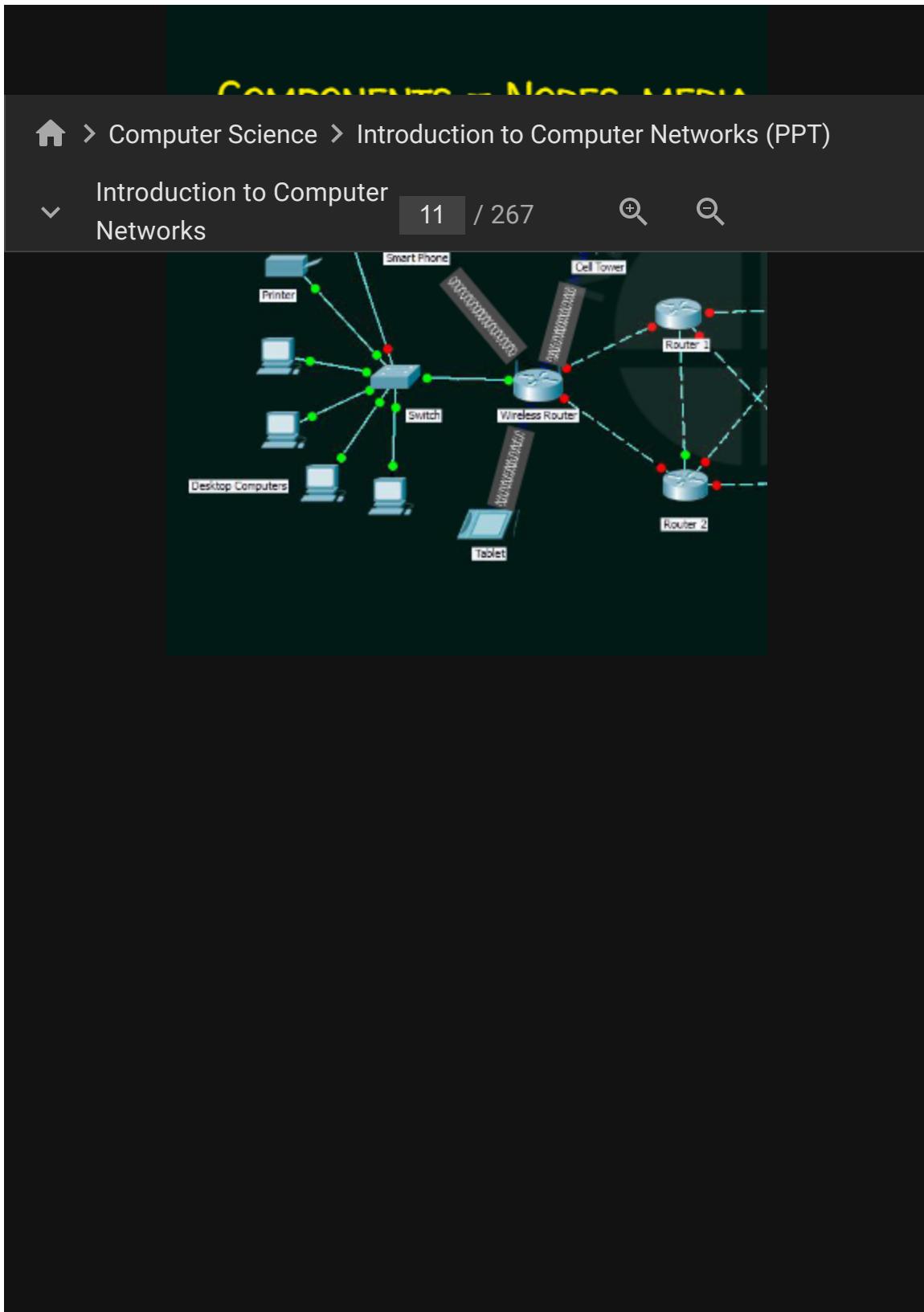
Radio (Example: Bluetooth, Wi-Fi)

Microwaves (Example: Cellular System)

Satellite (Example: Long range communication)



The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'Introduction to Computer Networks' is displayed with a dropdown arrow. To the right of the title are page navigation controls showing '11 / 267'. Further right are two search icons. The main content area contains three bullet points: 'Storage services', 'File sharing', and 'Instant messaging'. The slide has a dark green header bar at the top.



The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon with a plus sign.
- Reset:** A magnifying glass icon with a minus sign.

The slide content is a list of learning objectives:

- ★ Understand LAN, MAN and WAN.
- ★ Know various devices involved in LAN.
- ★ Know the new trends in computer networks.

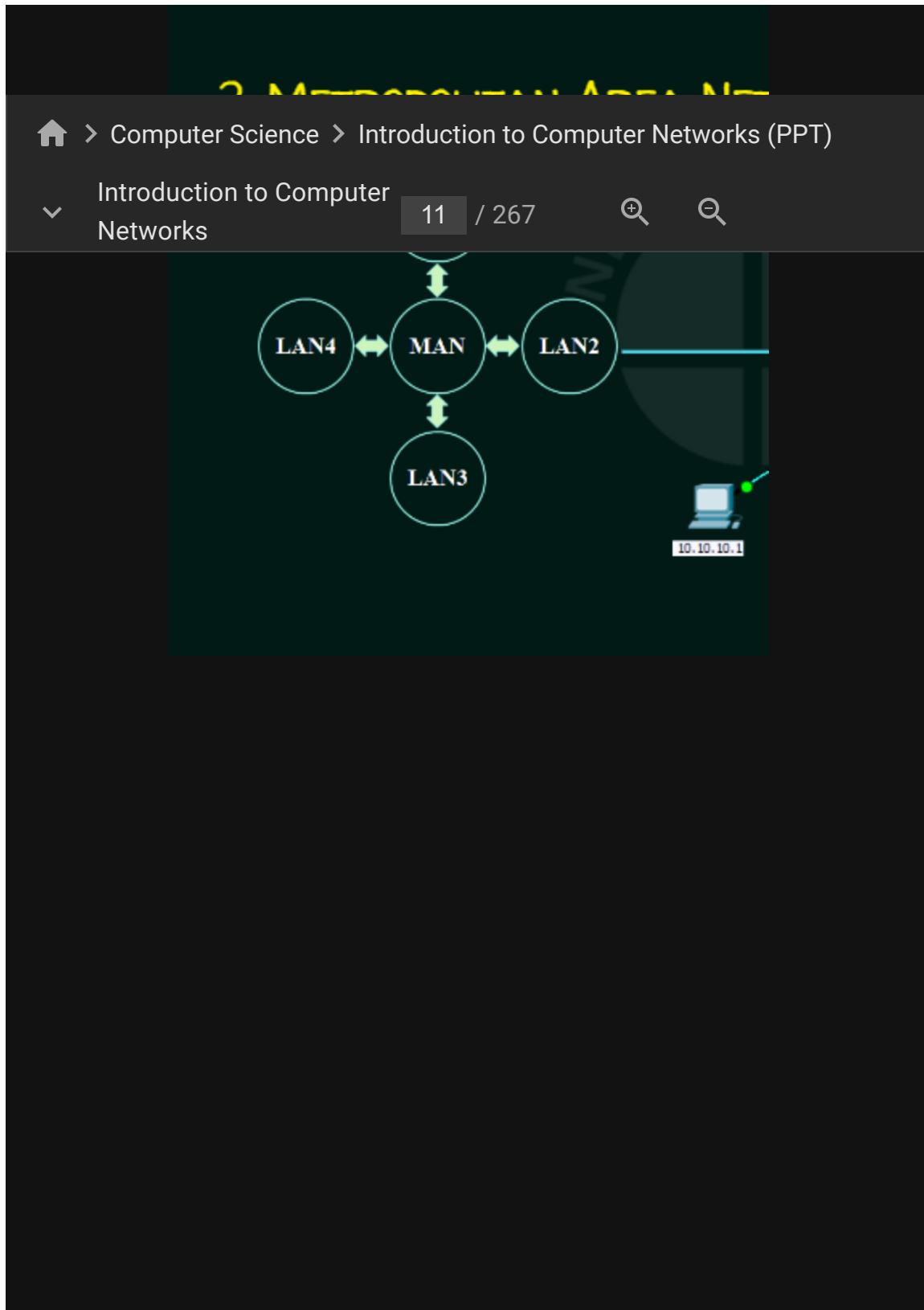
The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'Classification of Computer Networks' is displayed in a large, bold, yellow font. Underneath the title, there is a list of three items, with the first two visible:

- 2. Metropolitan Area Network (MAN)
- 3. Wide Area Network (WAN)

A screenshot of a presentation slide from 'Introduction to Computer Networks (PPT)'. The slide has a dark green header with the title 'Introduction to Computer Networks (PPT)' in yellow. Below the header, there's a breadcrumb navigation: a house icon followed by 'Computer Science > Introduction to Computer Networks (PPT)'. A dropdown menu for 'Introduction to Computer Networks' is open. The main content area shows the first slide of a series, with the page number '11 / 267' and search icons. The slide content includes the text 'office building.' and a section titled 'LAN - DEVICES' with two bullet points: '★ Wired LAN (Example: Ethernet - Hub, Switch)' and '★ Wireless LAN (Example: Wi-Fi)'. The background of the slide features a faint image of a network of lines and nodes.

The screenshot shows a presentation slide with the following details:

- Page Header:** Introduction to Computer Networks | Neso Academy
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are present.
- Content:**
 - Text:** area (City).
 - Section:** MAN- DEVICES
 - List:**
 - ★ Switches/Hub
 - ★ Routers/Bridges



The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, the text 'Computer Science > Introduction to Computer Networks (PPT)', and a dropdown menu 'Introduction to Computer Networks'. To the right of the menu are page number '11 / 267', a magnifying glass icon, and a search icon. The main content area contains the title 'WAN - Devices' in white text, followed by the subtitle 'End devices and intermediary devices'.

The screenshot shows a presentation slide with the following details:

- Page Title:** Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Diagram:** A network diagram for "LAN1 - NEW DELHI". It features a central grey rectangular hub node connected to four computer monitor icons. Each monitor icon is labeled with an IP address: 10.10.10.1, 10.10.10.2, 10.10.10.3, and 10.10.10.4. The connections are represented by blue lines with green circular endpoints.

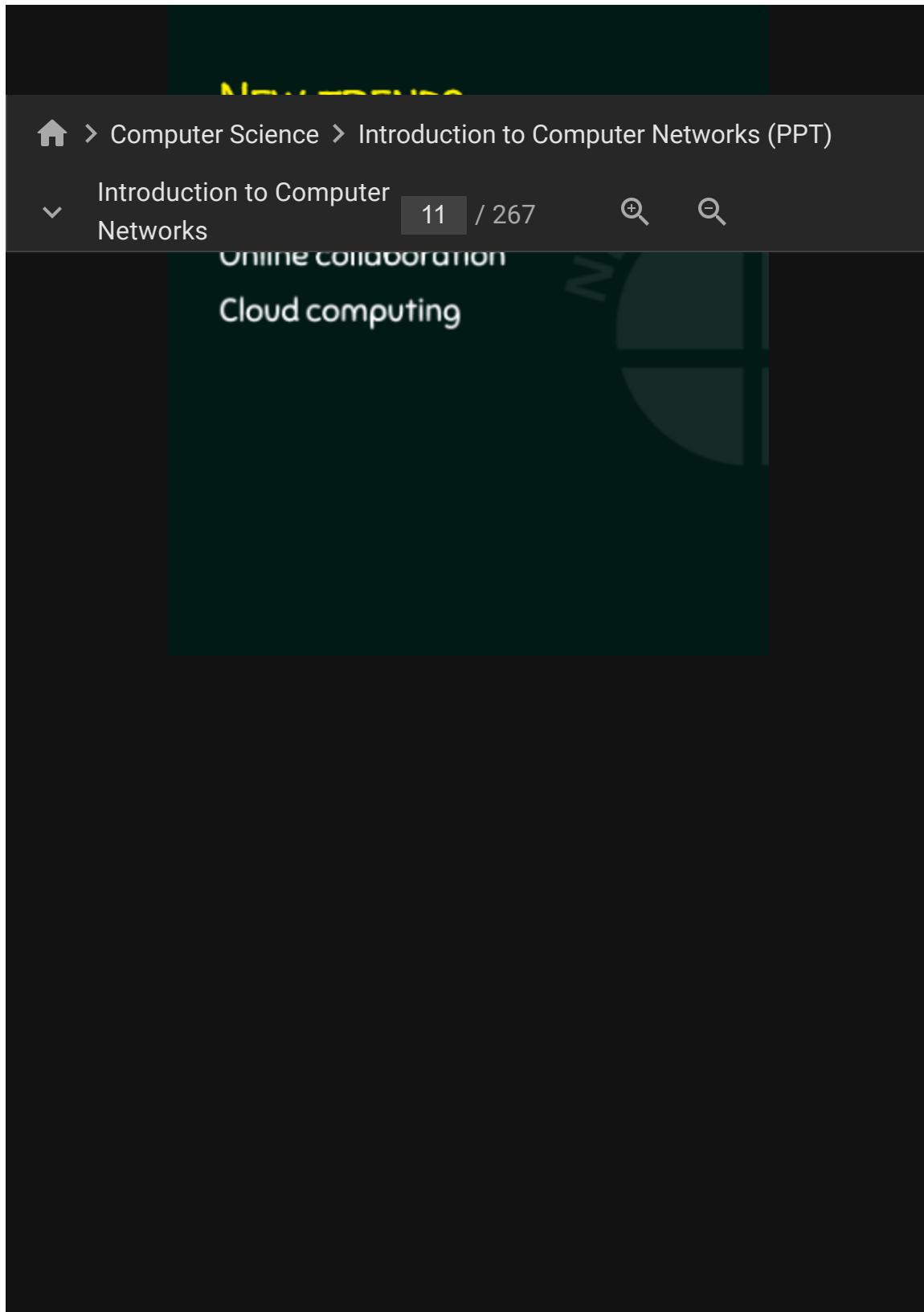
THE INTERNET

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267





The screenshot shows a presentation slide with the following details:

- Title:** Cloud Computing
- Section:** Computer Science > Introduction to Computer Networks (PPT)
- Page Number:** 11 / 267
- Content:** It is the on-demand availability or controlled sharing of computing resources and data storage, without physical presence at the user.

The screenshot shows a presentation slide from a website. At the top, there's a navigation bar with a house icon, the text 'Computer Science > Introduction to Computer Networks (PPT)', and a dropdown menu 'Introduction to Computer Networks'. To the right of the menu are icons for search and refresh. Below the navigation bar, the slide content starts with a large green star icon followed by the text: '★ Understand various network topologies and hybrid.' and '★ Understand the advantages and disadvantages of each topology.'

11 / 267

Q

Θ

★ Understand various network topologies and hybrid.

★ Understand the advantages and disadvantages of each topology.

The screenshot shows a presentation slide titled "Network Topology". The slide content includes the text "Topology = Layout." and a diagram illustrating a network topology. The diagram features three computer icons labeled "PC1", "PC2", and "PC3", each connected to a central circular hub icon. The slide has a dark background with a green header bar.

Topology = Layout.

PC1
PC2
PC3

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'Logical topology - Distribution of data' is displayed. The main content area contains five computer icons, each labeled with a name: 'PC1', 'PC2', 'PC3', 'PC4', and 'PC5'. These icons are arranged in a distribution pattern, with some overlapping or positioned higher than others.

The screenshot shows a presentation slide from Neso Academy. The title bar reads "Introduction to Computer Networks". The slide content is titled "Introduction to Computer Networks" and includes a navigation bar with a home icon, a search icon, and a refresh icon. The slide number is 11 of 267. The main content lists four network topology types: "★ Ring", "★ Star", "★ Mesh", and "★ Hybrid".

- ★ Ring
- ★ Star
- ★ Mesh
- ★ Hybrid

Bus Topology

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

network simultaneously.

★ A signal containing the address of the recipient is sent from a source machine in both directions along the bus until it finds the intended recipient.

The diagram illustrates a bus topology network. It features a single horizontal backbone line, often referred to as the bus. Five computer nodes, labeled PC1 through PC5, are connected to this bus. Each node has a vertical line extending from its connection point to the bus, which is labeled with its respective name (PC1, PC2, PC3, PC4, PC5). At the far left end of the bus, there is a red circle symbol, and at the far right end, there is a blue square symbol, both labeled "Terminator". Above the bus, the letter "A" is written in yellow. The background of the slide is dark green.

Point-to-Point

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Suited for temporary network.

Node failures does not affect others.

```
graph LR; PC1[PC1] --- Line --- PC2[PC2]; Line --- Terminator(( ));
```

https://nesoacademy.org/cs/06-computer-networks/ppts/01-introduction-to-computer-networks

Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

★ TWO CONNECTIONS: ONE TO EACH OF ITS NEIGHBOURS

★ Unidirectional.

★ Sending and receiving data takes place sequentially.



The diagram illustrates a unidirectional ring network topology. Five computer icons are arranged in a circle, connected by a single clockwise-pointing arrow. This visualizes how data travels from one node to the next in a single direction around the network.

The screenshot shows a presentation slide from Neso Academy. The title bar at the top has a dark green background with the text 'Neso Academy' in white. Below the title bar, the navigation path is 'Home > Computer Science > Introduction to Computer Networks (PPT)'. The main content area has a dark background with a circular graphic on the right side. On the left, there is a diagram illustrating a network topology. It features four computer icons labeled 'PC1', 'PC2', 'PC3', and 'PC4'. PC1 and PC2 are at the top, connected by a line. PC3 is below them, and PC4 is to the right. All four computers are connected to a central circular hub or switch, represented by a circle with a dashed line extending to each computer.

Dr. Neeraj Arora

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

Topology.

Can cause bottleneck due to weak links.

All nodes with equal access.



The slide content discusses network topologies, specifically mentioning ring topology. It notes that ring topology can cause bottlenecks if there are weak links. It also states that all nodes have equal access in this topology. A diagram at the bottom shows four computer icons connected by a circular line, forming a ring.

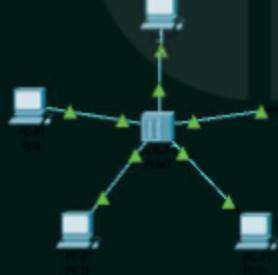
CS@NEO ACADEMY

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

★ All traffic must pass through the hub or switch.

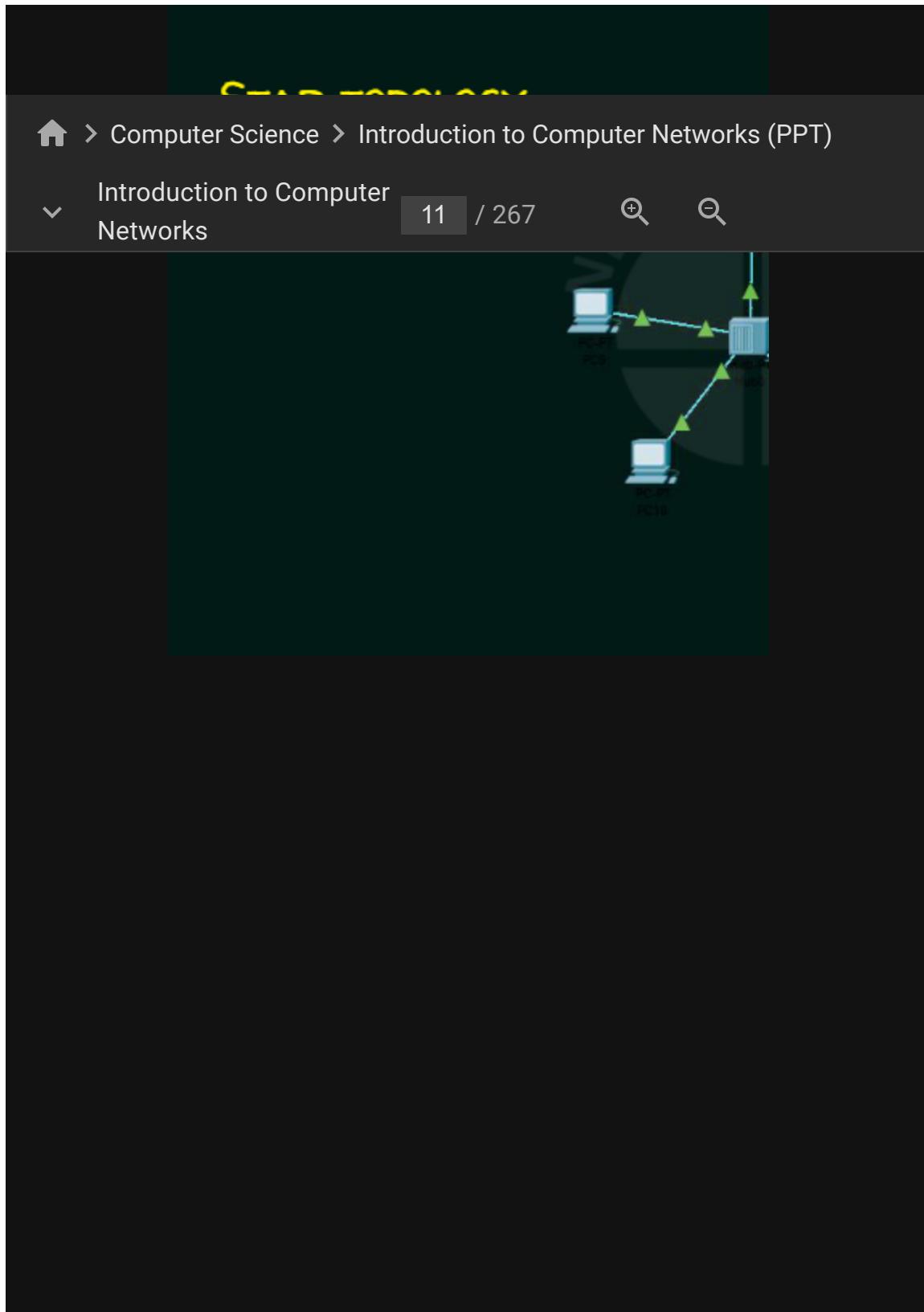


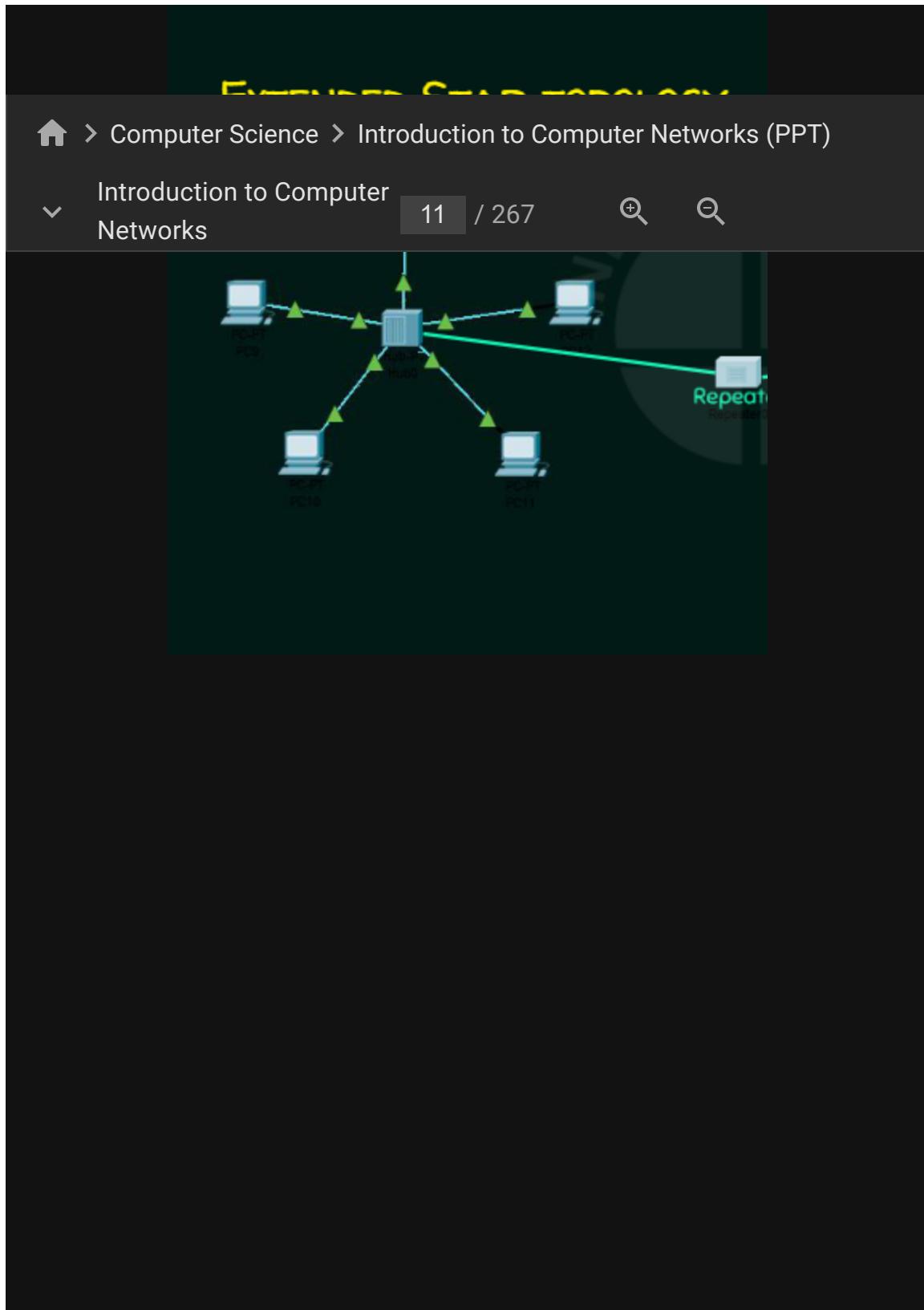
The diagram illustrates a star network topology. At the center is a blue square hub. Five computer icons, each labeled with a name (PC1, PC2, PC3, PC4, PC5) and a small icon, are connected to the hub by lines with green arrowheads pointing towards the center. This visualizes how all traffic in a star network must pass through a single central point.

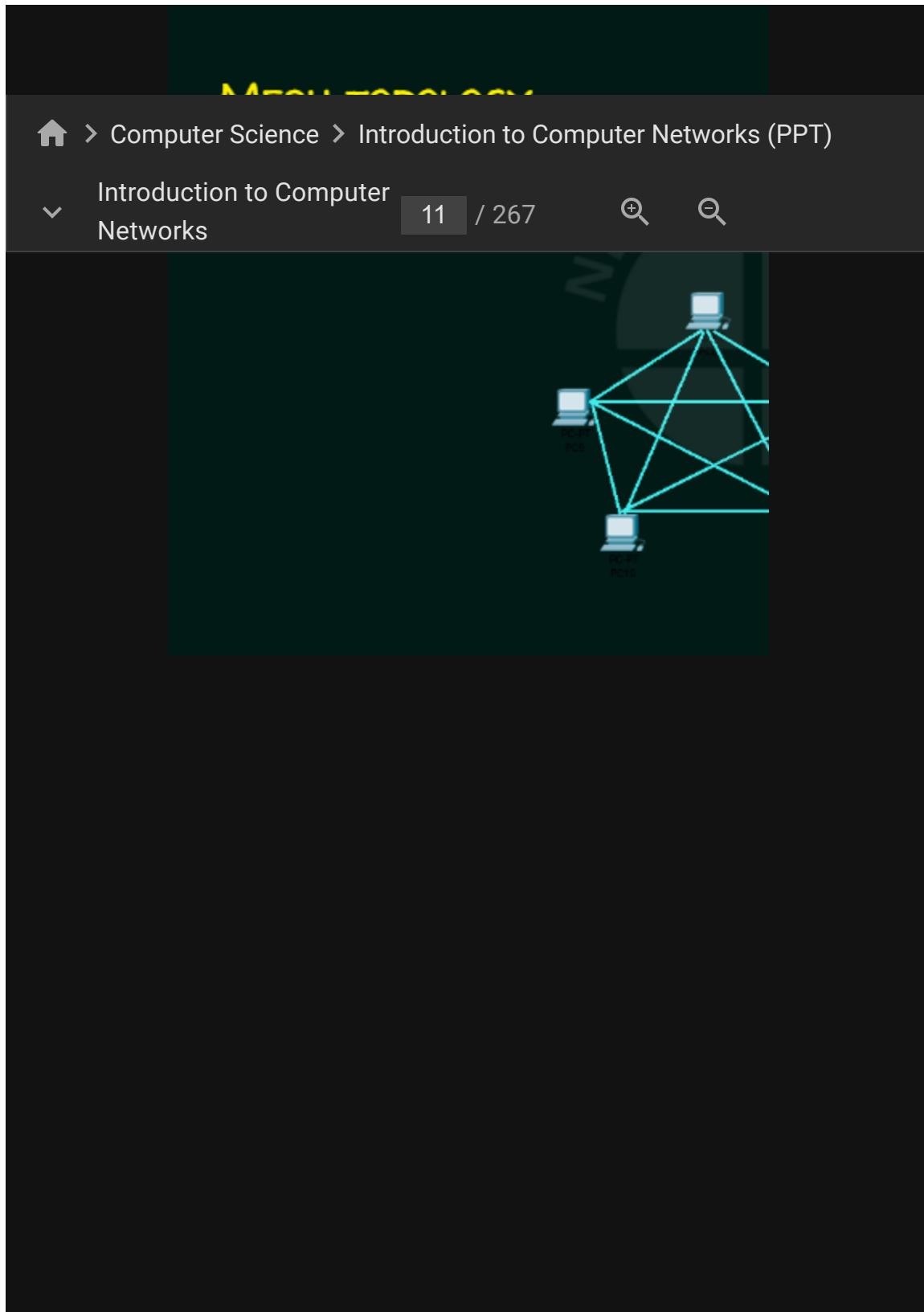
Centralized administration.

Scalable.

The slide features a network diagram at the bottom right showing five computer icons connected to a central hub icon, illustrating a network topology.







The screenshot shows a presentation slide from Neso Academy. The title bar at the top has a dark green background with the text 'Neso Academy' in white. Below the title bar, the navigation path is 'Home > Computer Science > Introduction to Computer Networks (PPT)'. The main content area has a dark background with a faint watermark of a person's face. On the left, there is a sidebar with the title 'Introduction to Computer Networks' and a dropdown arrow. In the center, the slide content includes the word 'Reliable.' in a white box, a search icon, and a magnifying glass icon. The main part of the slide features a network diagram with five computer icons labeled PC1 through PC5. These icons are connected by a complex web of blue lines forming a pentagonal mesh, representing a fully connected network topology.

Introduction to Computer Networks

Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

Diagram illustrating a network topology. On the left, four computer icons are connected to a horizontal backbone line via vertical links. A red circle marks the connection point of the fourth computer. A green line extends from this red circle to a central hub node. The hub node is a square with five outgoing green lines, each connecting to a computer icon. The word "HUB" is written below the hub node.

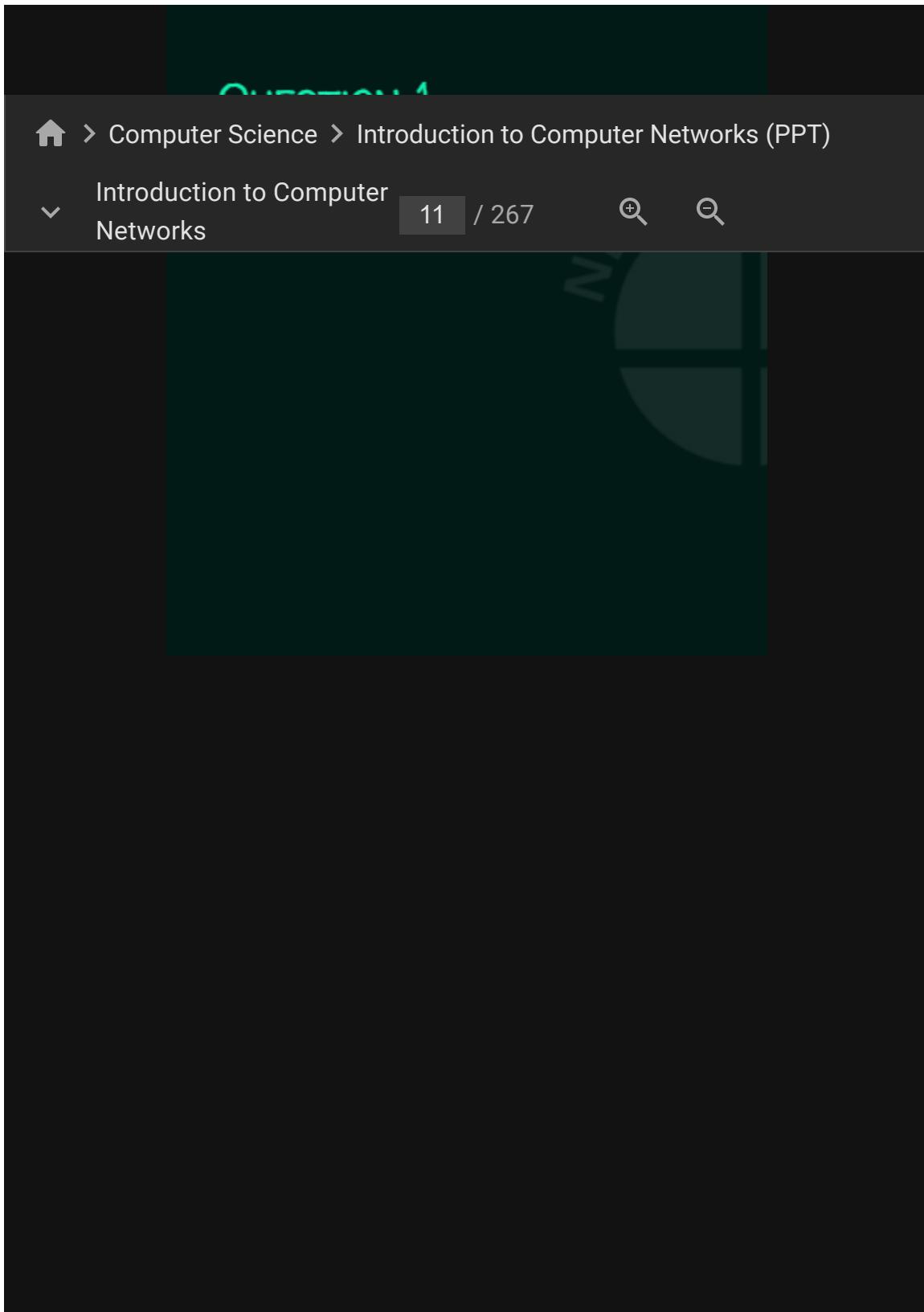
Introduction to Computer Networks

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Diagram illustrating a network topology. On the left, four computer icons are connected to a horizontal backbone line via vertical links. A red circle marks the connection point of the fourth computer. A green line extends from this red circle to a central hub node, which is connected to five other computer icons. The hub node is labeled "HUB".

The screenshot shows a presentation slide from Neso Academy. The slide has a dark green header bar with the text 'Introduction to Computer Networks' in white. Below the header, there is a navigation bar with icons for home, back, forward, and search, followed by the text 'Computer Science > Introduction to Computer Networks (PPT)'. To the right of the navigation bar are two search icons. The main content area contains a question mark icon and the text: '★ Determine the number of links(cab topology.)'. The slide is numbered 11 / 267.



The screenshot shows a presentation slide with the following details:

- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search Function:** A magnifying glass icon with a plus sign inside.
- Table:** A table with four columns labeled (N), (=N), (NOPD), and (TN). The first three columns have numerical values (2, 3, 4) in their first three rows, and 'N' in their last row. The fourth column has a value of 2 in all four rows.

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are present.
- Content:**
 - Solution:** (Here N=6)
 - Topology:** Ring Topology
 - Equation:** No. of cables = N
 - Equation:** No of cables = 6
 - Equation:** TNOP = N × NOPD
 - Text:** Here N=6, NOPD=2
 - Equation:** TNOP = 6 × 2 = 12

Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

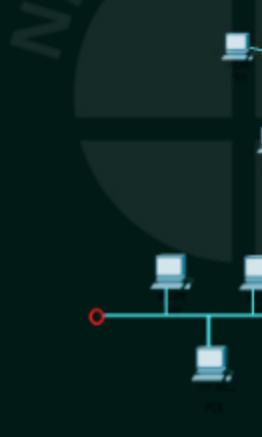
11 / 267

a. Star X

b. Bus X

c. Ring X

d. Mesh Mesh



The screenshot shows a presentation slide with the following details:

- Navigation Bar:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section Header:** QUESTION 3
- Page Information:** Introduction to Computer Networks / 11 / 267
- Search Icons:** Magnifying glass and other search-related icons.
- Solution Section:** A blue box labeled "Solution:" contains the following text:
 - No. of cables : N
 - No. of cables : 5
 - No. of ports = $2 \times N$
 - No. of ports = 2×5
 - No. of ports = 10

The screenshot shows a presentation slide with the following details:

- Title:** Introduction to Computer Networks (PPT)
- Page Number:** 11 / 267
- Table Data:**

(N)	(=N)	(NOPD)	(T)
2	2	1	
3	3	1	
4	4	1	
N	N	1	

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Information:** 11 / 267
- Search:** A magnifying glass icon with a plus sign.
- Text on Slide:**

(ii) How many ports are needed for
(iii) How many ports are there in the

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon.
- Help:** A question mark icon.

The slide content is a list of learning objectives:

- ★ Understand the basics of IP address
- ★ Know how to see the IP address in r
- ★ Identify valid and invalid IP address

TD Address

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

address.

LAN 1 - New Delhi

172.15.150.2

172.15.150.3

172.15.150.4

MAC: 70-20-84-00-ED-FC

The screenshot shows a presentation slide with a dark green header bar. The header contains the title 'IP Address (IPv4)' in yellow text. Below the header, the navigation bar includes icons for home, back, forward, and search, followed by the text 'Computer Science > Introduction to Computer Networks (PPT)'. A dropdown menu is open, showing 'Introduction to Computer Networks' with a downward arrow icon. To the right of the menu are page navigation controls: '11 / 267', a magnifying glass icon for search, and a refresh/circular arrow icon.

address.

- ★ Logical address.
- ★ Can change based on the location.
- ★ Assigned by manually or dynamically.
- ★ Represented in decimal and it has 4 bytes.
- ★ 0.0.0.0 to 255.255.255.255 (32 bits)

The screenshot shows a presentation slide with the following details:

- Page Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search Function:** A magnifying glass icon with a plus sign.
- Print Function:** A magnifying glass icon with a minus sign.
- Content:** A list of six IP addresses:
 - a. 24.25.26.8
 - b. 10.3.156.256
 - c. 0.0.0.0
 - d. 255.255.255.255
 - e. 100.2.6.345.456
 - f. 16.2e.45.67

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with icons for home, back, forward, and search, followed by the text "Computer Science > Introduction to Computer Networks (PPT)". Below this, the title "Introduction to Computer Networks" is displayed with a dropdown arrow. In the center, there is a progress bar showing "11 / 267". To the right of the progress bar are two search icons. The main content area contains three bullet points, each preceded by a star icon:

- ★ Understand the basics of MAC address
- ★ Understand the difference between MAC and IP address
- ★ See the MAC address in real devices

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'MAC Address' is displayed in yellow. The main content area contains the following text:
Every node in the LAN is identified with
IP Address = Location of a person.
MAC Address = Name of the person.

MAC Addresses

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

LAN 1 - New Delhi

Ethernet port

172.15.150.2
MAC: 70-20-84-00-ED-FC

172.15.150.3

172.15.150.4

The diagram illustrates a local area network (LAN) named "LAN 1 - New Delhi". At the top, there is a central switch represented by a grey rectangle with four ports. Three solid lines connect the switch to three computer icons below it, each labeled with an IP address: 172.15.150.2, 172.15.150.3, and 172.15.150.4. Below these three computers, a fourth computer icon is connected to the switch by a dashed line. In the top right corner of the slide, there is an "Ethernet port" icon, which is a blue cylinder with a green dot representing a connection point.

The screenshot shows a presentation slide with the following details:

- Title Bar:** MAC Address
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon with a plus sign.
- Icon:** A small circular icon with a question mark.

The main content of the slide is a bulleted list of six points:

- ★ Unique.
- ★ Cannot be changed.
- ★ Assigned by the manufacturer.
- ★ Represented in hexadecimal.
- ★ Example: 70-20-84-00-ED-FC (48)
- ★ Separator: hyphen(-), period(.), a

MAC Address

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

LAN 1 - New Delhi

172.15.150.2

172.15.150.3

172.15.150.4

MAC: 70-20-84-00-ED-FC

The diagram illustrates a local area network (LAN) structure. At the top center is a light blue rectangular box labeled "LAN 1 - New Delhi". Four green circular dots represent network nodes, each connected by a line to the central box. Below the central box, three computer icons are labeled with their respective IP addresses: "172.15.150.2", "172.15.150.3", and "172.15.150.4". At the bottom of the central box, the MAC address "MAC: 70-20-84-00-ED-FC" is displayed. A single line extends from the right side of the central box to a small circular icon containing the letters "Et", representing an external connection point.

The screenshot shows a presentation slide with the following content:

IP Address Vs MAC Address

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

Needed for communication.

32 bits.

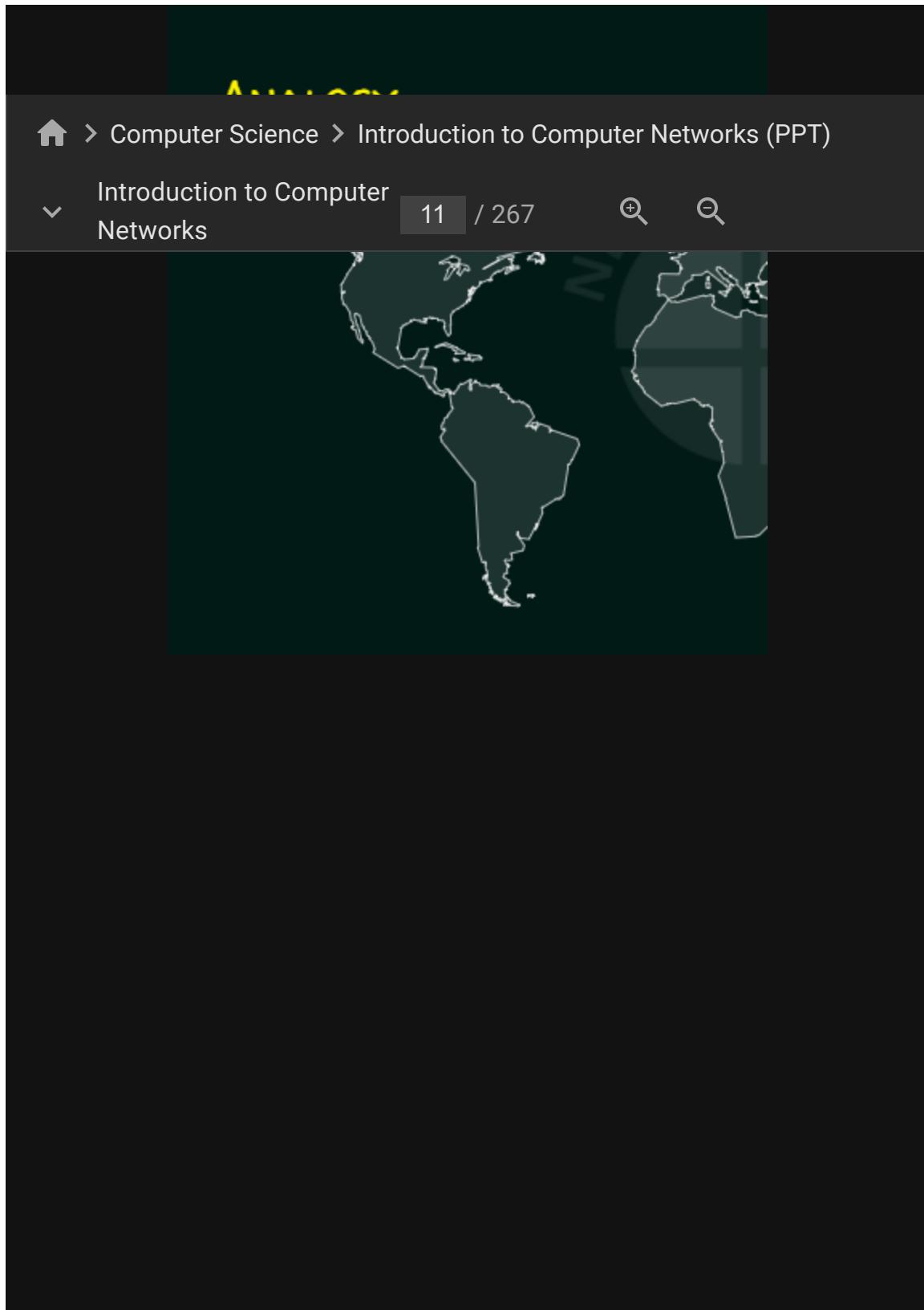
Represented in Decimal.

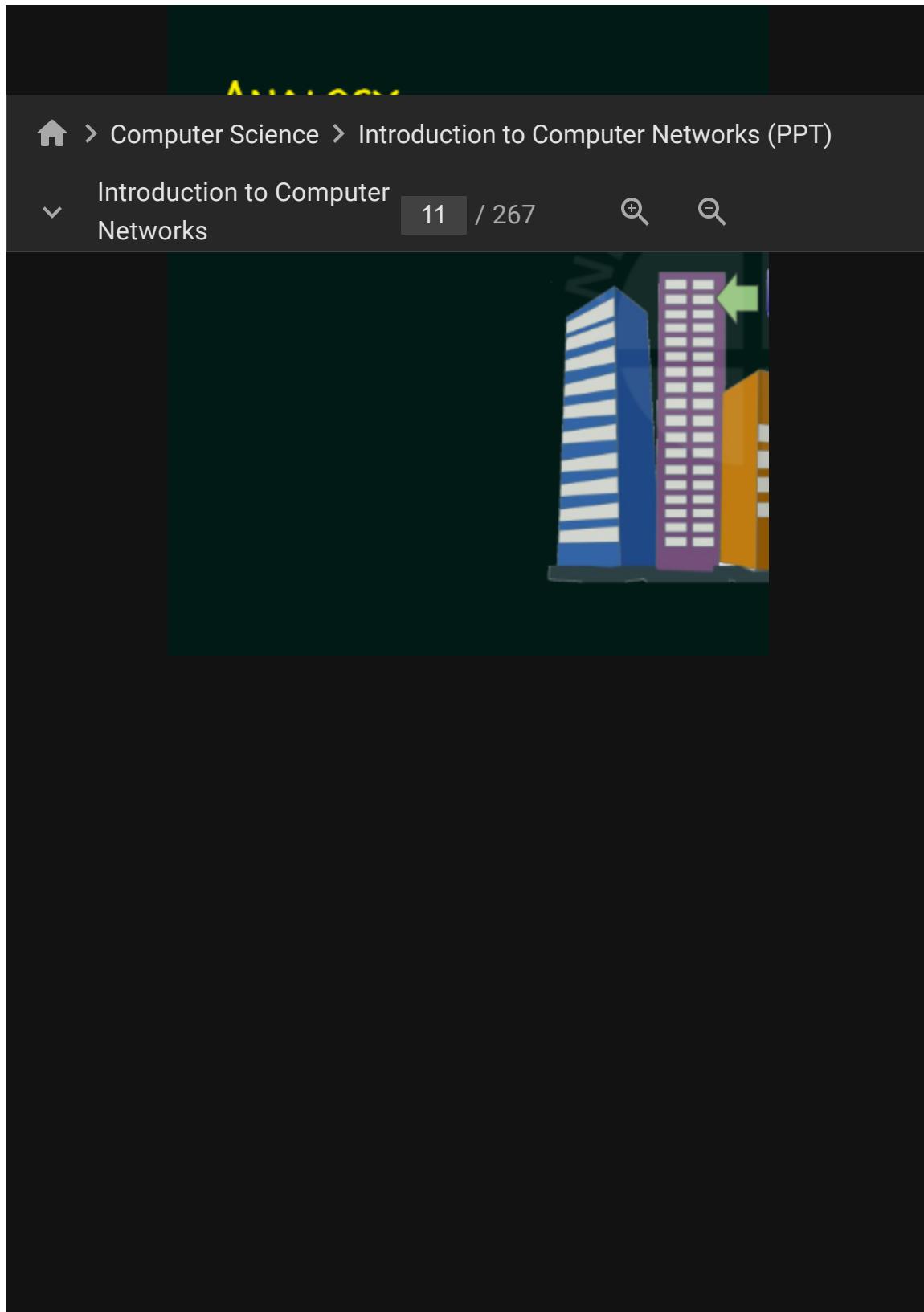
Router needs IP Address to forward data.

Example: 10.10.23.56

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'Introduction to Computer Networks' is displayed with a dropdown arrow. The slide content area contains three bullet points, each preceded by a star symbol:

- ★ Understand the basics of Port address.
- ★ Know three key points to ponder.
- ★ See port number in real devices.





The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'Introduction to Computer Networks' is displayed with a dropdown arrow. The slide itself has a green header containing the text 'Reaching our Apartment = Reaching the right person'. The main content area contains the text 'Reaching the right person = Reaching the right computer'. There are also some faint, overlapping shapes and text in the background.

The screenshot shows a presentation slide with the following content:

Ports Assignment on Ports Number

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

Example:

- ★ Every process in a node is uniquely assigned a port number.
- ★ Port = Communication endpoint.
- ★ Fixed port numbers and dynamic port numbers.

Fixed port numbers : 25, 80, 443, etc.

OS assigned dynamic port numbers.

Basic Applications on Basic Netw.

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Firefox Explorer-Google

Media Player

Google Chrome YouTube

The slide displays a diagram illustrating basic applications on a network. Three ovals represent different applications: 'Firefox Explorer-Google' (top, cyan), 'Media Player' (middle, cyan), and 'Google Chrome YouTube' (bottom, pink). Arrows point from each oval to a central computer icon, representing how these applications interact with the network.

Ports Assignment on Port No.

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

The diagram illustrates the assignment of specific ports to different network applications:

- Port no: 46567 - Internet Explorer-Gmail
- Port no: 62323 - Firefox Explorer-Google
- Port no: 60083 - Media Player
- Port no: 64323 - Google Chrome YouTube

Each application is represented by a rounded rectangle containing its name and associated service, connected to a central point by arrows.

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title '3 Key points to remember' is displayed in yellow. To the left of the title, there is a dropdown menu with the text 'Introduction to Computer Networks'. On the right side of the title, there is a page number '11 / 267' and two search icons. The main content area contains three bullet points, each preceded by a star symbol:

- ★ Attach source IP address and destination IP address
- ★ Attach source MAC address and destination MAC address
- ★ Attach source port number and destination port number

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are present.
- Content:** The slide contains the following text:
 - ★ Understand switching.
 - ★ Understand various switching techniques
 - message switching and packet switching

The screenshot shows a presentation slide with the following details:

- Title Bar:** Computer Networks
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon.
- Help:** A question mark icon.

The slide content includes:

- Text:** data transmission if there are mult
- List:** ★ One-to-One connection.

The screenshot shows a presentation slide with the following details:

- Title Bar:** Computer Networks
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** + Q
- Diagram:** A diagram showing two boxes: "Circuit Switching" and "Message Switching". They are connected by a horizontal line above them.

The screenshot shows a presentation slide with a dark green header bar. The header contains the title 'Circuit Switching' in yellow. Below the header, the navigation path is shown as 'Home > Computer Science > Introduction to Computer Networks (PPT)'. A dropdown menu for 'Introduction to Computer Networks' is open. The slide content includes a bullet point '★ Before data transfer, connection w...' and another bullet point '★ Example: Telephone network.' A blue box highlights the text '3 phases in circuit switching:' followed by a numbered list: 1. Connection establishment. 2. Data transfer 3. Connection Disconnection.

★ Before data transfer, connection w...

★ Example: Telephone network.

3 phases in circuit switching:

1. Connection establishment.
2. Data transfer
3. Connection Disconnection.

EXAMPLE FOR A BUSY NETWORK

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks / 267

Diagram illustrating a network topology:

```
graph LR; A[Computer] --- Bus[ ]; Bus --- S1[Switch]; Bus --- S2[Switch]; S1 --- S3[Switch]; S1 --- S4[Switch]; S3 --- Hub[Hub]; S4 --- Hub; Hub --- S2[Switch]; Hub -.-> DashedLine(( ));
```

EXAMPLE FOR A SOURCE ROUTING

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

The diagram illustrates a network topology where a 'Sender' node at the top left initiates a connection to four intermediate nodes. These intermediate nodes are then connected to a final destination node on the right. Solid lines represent the primary path, while dashed lines indicate alternative routes or backup paths between the intermediate nodes and the destination.

EXAMPLE FOR A SOURCE ROUTING

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks / 267

The diagram illustrates a network topology consisting of several hosts (represented by computer icons) and routers (represented by blue cubes). A path is highlighted from a host on the left to a host on the right, showing a sequence of routers and intermediate hosts. The path starts at the top-left host, connects through a router to another router, then to a host, and finally to the target host on the far right. Other hosts in the network are shown with dashed lines connecting them to the routers, indicating they are part of the same network.

EXAMPLE FOR A SOURCE ROUTING

Home > Computer Science > Introduction to Computer Networks (PPT)

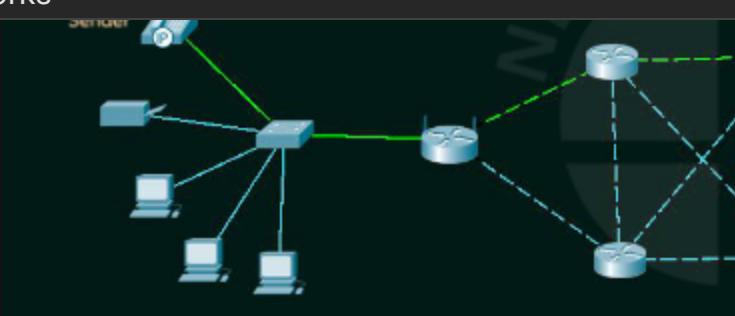
Introduction to Computer Networks / 267

The diagram illustrates a network topology consisting of several hosts (represented by computer icons) and routers (represented by blue cubes). A path is highlighted from a host on the left to a host on the right, showing a sequence of routers and intermediate hosts. The path starts at the top-left host, connects through a router to another router, then to a host, then to another router, and finally to the destination host on the far right. Other hosts in the network are shown with dashed lines connecting them to the routers, indicating they are part of the same network.

EXAMPLE FOR A SOURCE ROUTING

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks / 267



The diagram illustrates a network topology consisting of several hosts (represented by computer icons) and routers (represented by blue cylinder icons). A path is highlighted from a host on the left to a host on the right, showing a sequence of routers and intermediate hosts. The path starts at the top-left host, connects to a central router, then to another router, and finally to the bottom-right host. Other hosts in the network are shown with dashed lines connecting them to the routers, indicating they are part of the same network.

EXAMPLE FOR A BUSY NETWORK

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks / 267

The diagram illustrates a network topology. On the left, there is a central switch node connected to four computer nodes. This central switch is also connected to another switch node. This second switch is connected to three additional computer nodes. Dashed lines from the second switch indicate further connections to other nodes, suggesting a larger network structure.

The screenshot shows a presentation slide with the following details:

- Title Bar:** ADVANTAGES OF PACKET SWITCHING
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon.
- Help:** A question mark icon.

The main content of the slide is a bulleted list:

- ★ Message is transferred as a complete unit
- and forward mechanism at the intermediate nodes
- ★ Not suited for streaming media and video conferencing

EXAMPLE FOR MESSAGE SWAP

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Sender

The diagram illustrates a network topology for message swapping. It shows a 'Sender' computer at the bottom left connected to a local network of four computers. One computer in the local network is highlighted in yellow. This yellow-highlighted computer is connected to a router, which is then connected to a larger network. The larger network consists of a central switch and three other routers. The message is shown as a dashed line being forwarded from the local network through the first router, then to the central switch, and finally to the destination computer, which is also highlighted in yellow.

EXAMPLE FOR DATA ROUTING

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Sender

The diagram illustrates a network topology for data routing. It shows a 'Sender' computer connected to a central switch. This switch is connected to three other switches. One of these switches is connected to a destination computer at the top left. Another switch is connected to a third switch, which is then connected to a final destination computer at the top right. A dashed line from the first switch also extends towards the top right destination computer, indicating a potential alternate route.

EXAMPLE FOR MESSAGE SWAP

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

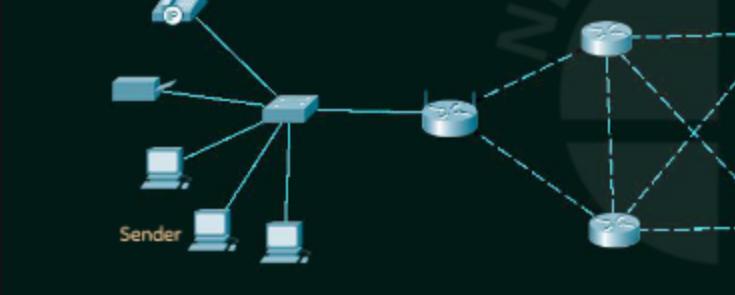
Sender

EXAMPLE FOR MESSAGE SWAP

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Sender



PACKET SWITCHING

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

- ★ Each packet is sent individually.
- ★ Each packet will have source sequence number.
- ★ Sequence numbers will help the receiver
 - Reorder the packets.
 - Detect missing packets and
 - Send acknowledgments.

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below this, a dropdown menu is open, showing 'Introduction to Computer Networks'. To the right of the menu, there is a page number '11 / 267' and two search icons. The main content area of the slide is titled '2. Virtual Circuit Approach.' in white text.

PACKET SWITCHING – DATAGRAMS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

SWITCHING.

- ★ Each independent entity is called a node.
- ★ Datagrams contain destination information. Every intermediate device uses this information to forward the datagram towards its destination.
- ★ In Datagram Packet Switching approach, the source and destination addresses are explicitly mentioned in each datagram.
- ★ Intermediate nodes take the routing decisions based on the destination address present in the datagram header.

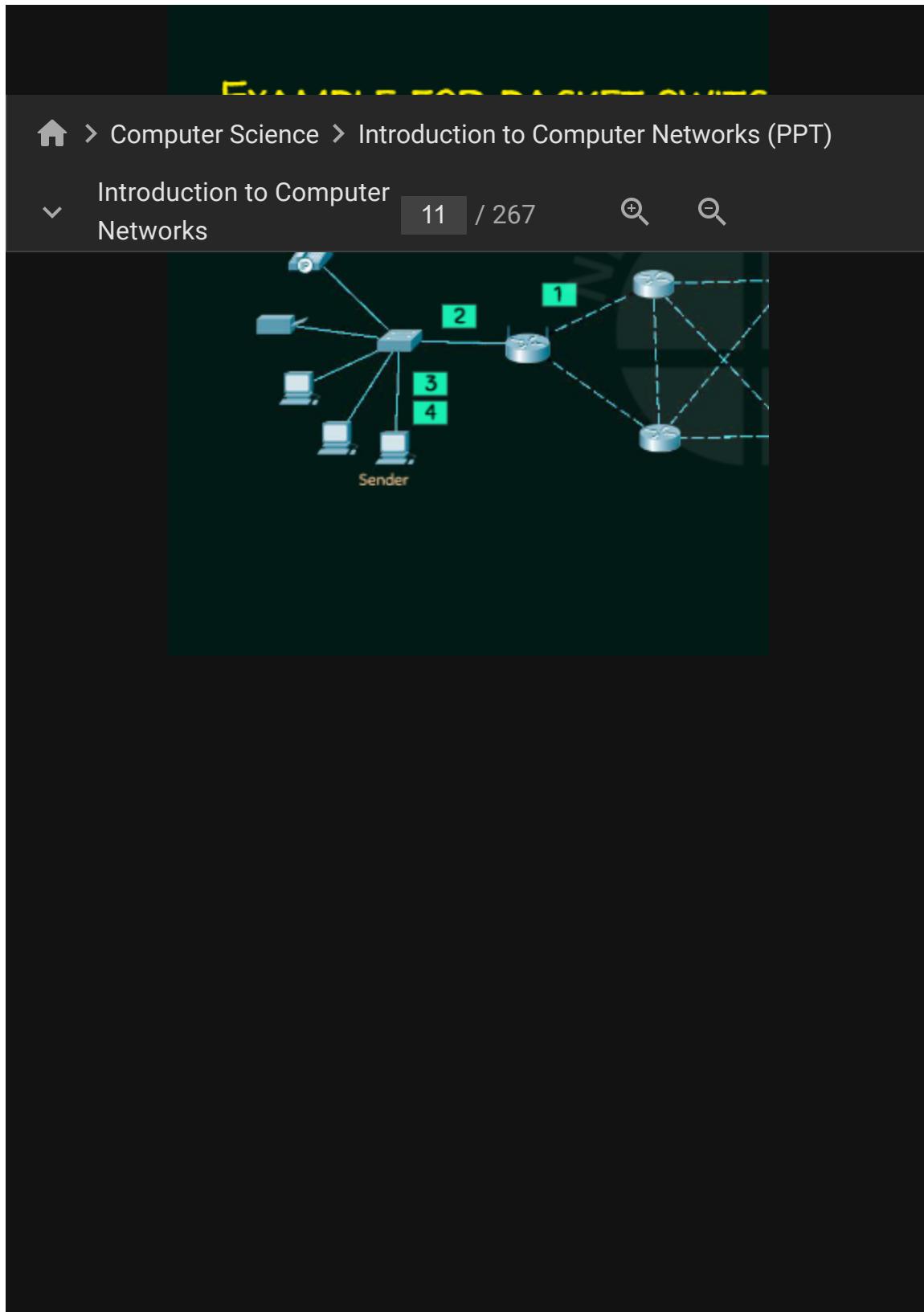
EXAMPLE FOR PACKET SWAPPING

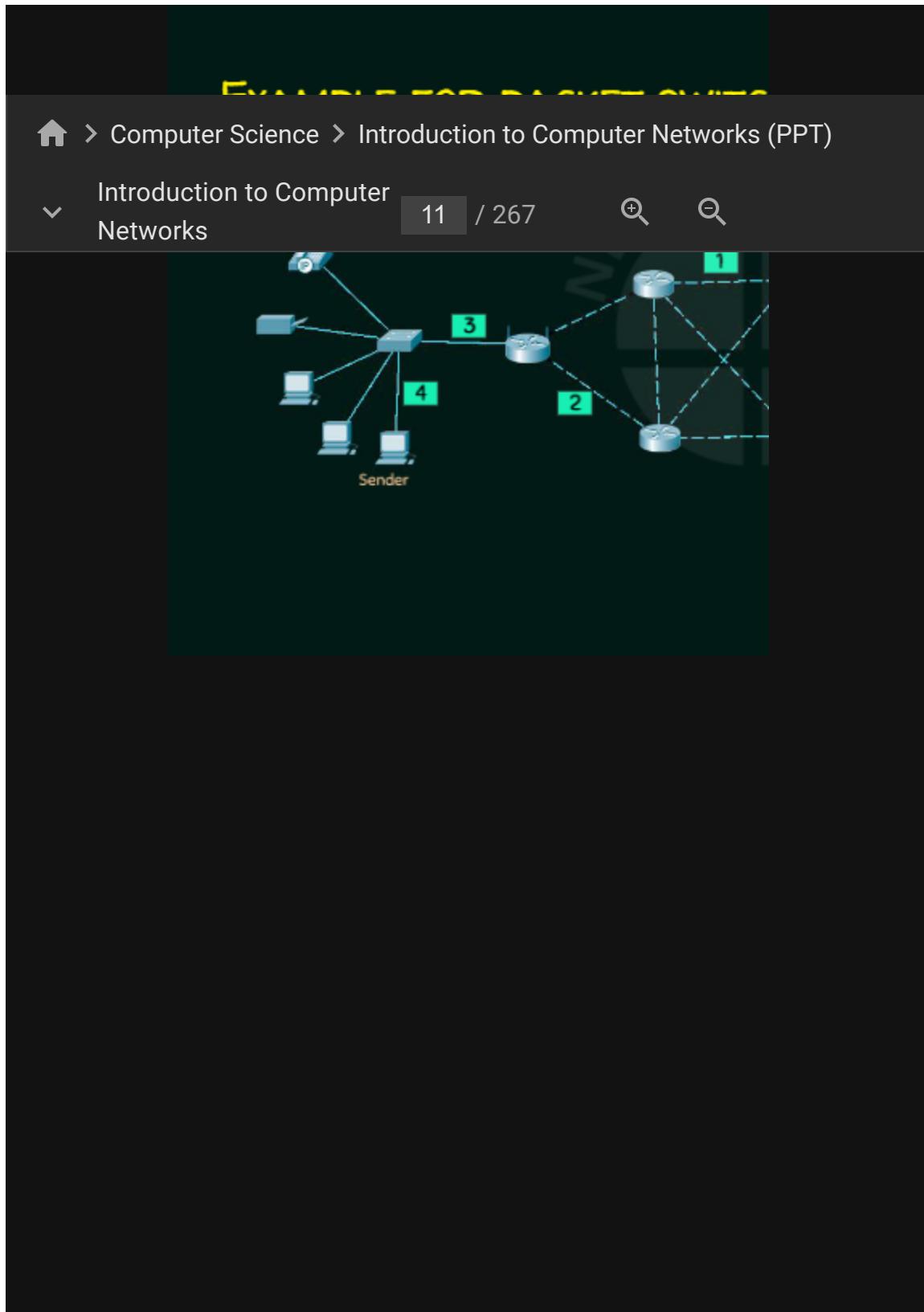
Home > Computer Science > Introduction to Computer Networks (PPT)

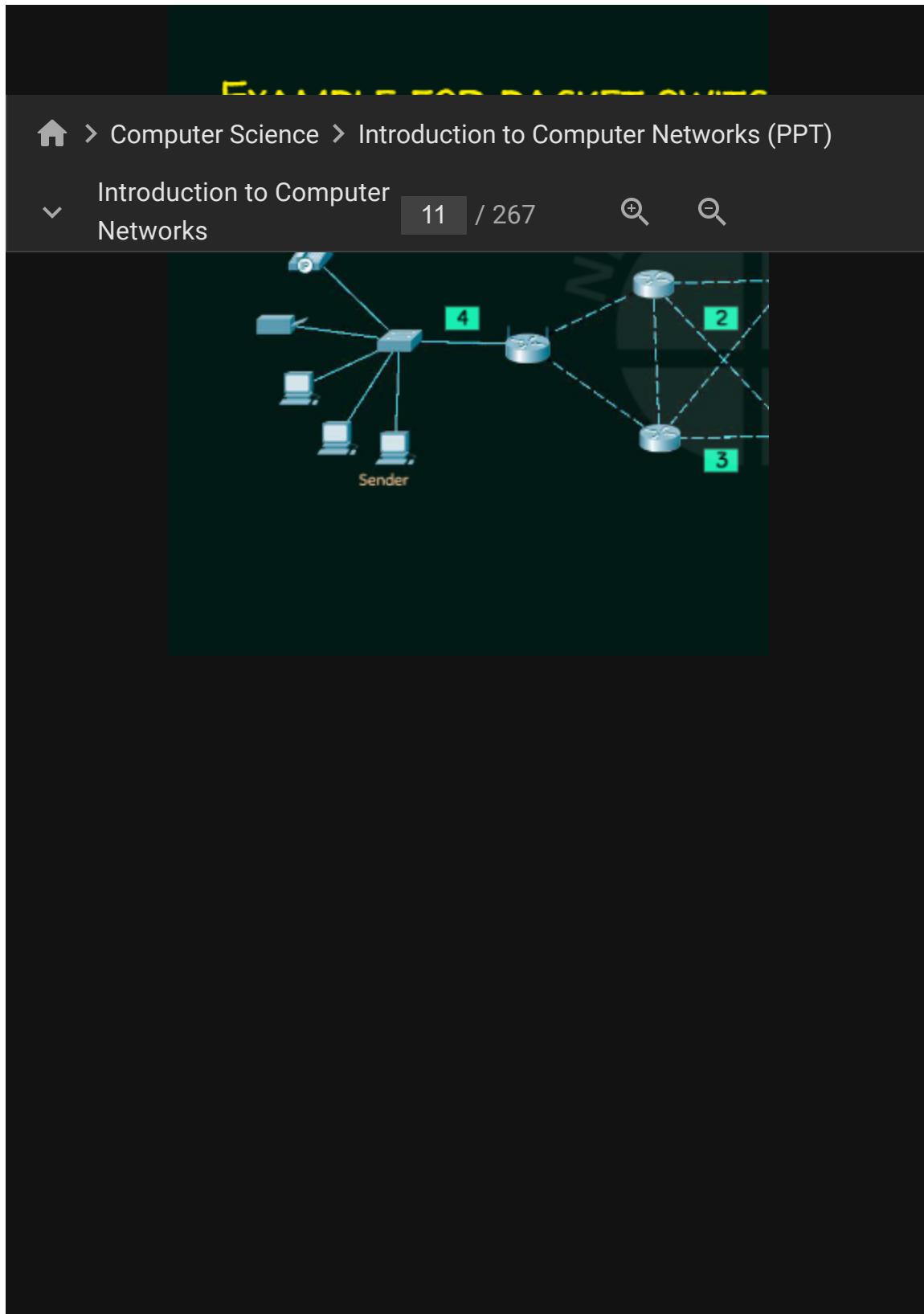
Introduction to Computer Networks 11 / 267

Sender

The diagram illustrates a network topology for packet switching. On the left, a 'Sender' node contains four green boxes labeled 1, 2, 3, and 4. These are connected to a central switch. From the switch, a single line leads to a central router. From this router, two dashed lines lead to two separate routers on the right. These two routers are also connected to each other by a dashed line.





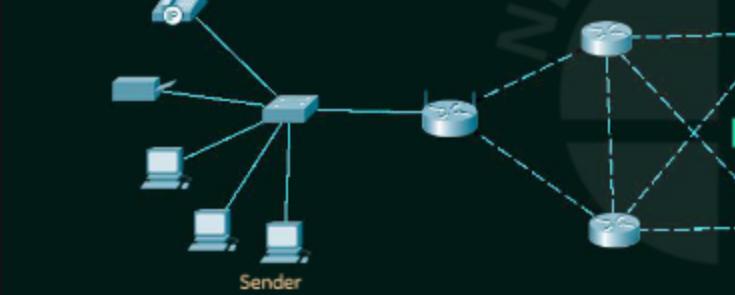


EXAMPLE FOR BROADCAST CHANNEL

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Sender



EXAMPLE FOR BROADCAST CHANNEL

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Sender

The diagram illustrates a broadcast network topology. A central node labeled "Sender" is connected to four other nodes. These four nodes are also interconnected among themselves. All connections are represented by solid blue lines. Dashed blue lines extend from the top-left and bottom-right nodes towards the right, indicating that they can receive broadcast messages from the sender and from each other.

EXAMPLE FOR BROADCASTING

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Sender

The diagram illustrates a broadcast communication scenario in a network. A 'Sender' node at the bottom left is connected to four other nodes. One of these nodes is connected to a central switch. This switch is also connected to two other nodes, which are further connected to a final switch at the top right. Dashed lines from the final switch indicate broadcast signals reaching all nodes in the network.

EXAMPLE FOR BROADCAST CHANNEL

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Sender

The diagram illustrates a network topology where a single source node, labeled "Sender", is connected to multiple destination nodes via a series of switches. The connections are represented by solid lines, while dashed lines indicate the broadcast range of the network, showing how signals can reach multiple destinations simultaneously.

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, the text 'Computer Science > Introduction to Computer Networks (PPT)', a dropdown menu 'Introduction to Computer Networks', page numbers '11 / 267', and search icons.

The main content of the slide is titled 'Virtual Circuit Switching' in blue text. Below the title, there is a bulleted list of three points:

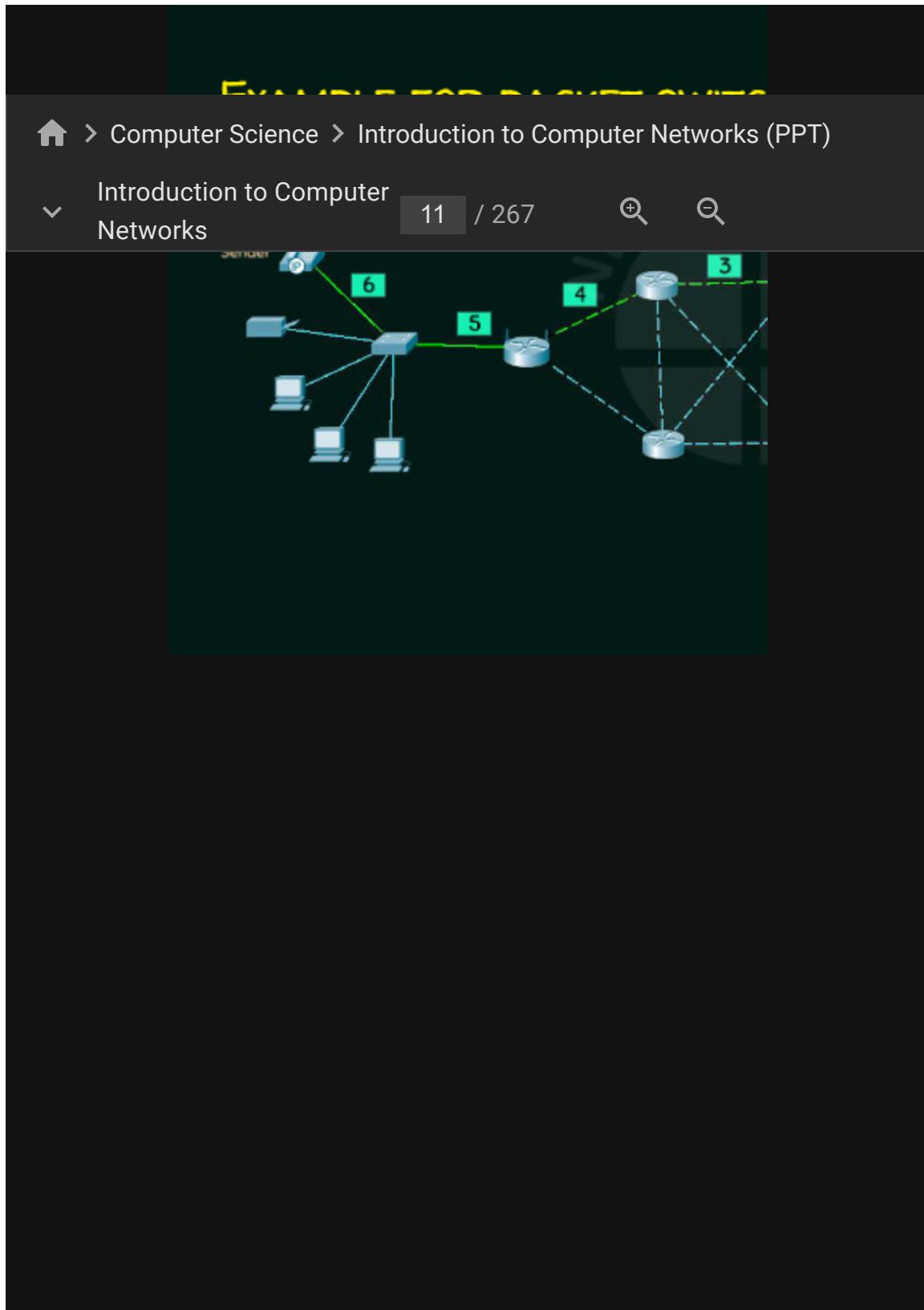
- ★ In the case of Virtual circuit switching, the connection is established before the messages are transmitted.
- ★ Call request and call accept packets are used to establish a connection between sender and receiver.
- ★ In this approach, the path is fixed for the duration of the connection.

EXAMPLE FOR BACKUP SYSTEM

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks / 267

The diagram illustrates a network topology. On the left, there is a host icon with a blue arrow pointing to a switch. This switch is connected to three other hosts. A second switch is connected to two hosts. Both switches are connected to a central router. The router is also connected to another switch, which is further connected to two hosts. Dashed lines indicate additional connections that are not physically realized.



EXAMPLE FOR DATA LINK LAYER

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Diagram illustrating a network topology. On the left, four computer icons (laptops and desktops) are connected to a central switch. This switch is connected to a second switch, which is further connected to two additional switches. These two final switches are interconnected, forming a mesh-like structure.

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below this, the title 'Computer Networks' is displayed in large, bold, yellow letters. A subtitle 'Switching Techniques' is shown in smaller, green letters. The main content area contains two orange-bordered boxes: 'Circuit Switching' on the left and 'Message Switching' on the right. Both boxes have white text and are connected by a thin horizontal line at the top. The page number '11 / 267' is located in the top right corner of the slide area.

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon with a plus sign.
- Help:** A question mark icon.

The slide content is a list of learning objectives:

- ★ Understand layering in computer networks
- ★ Understand the benefits of layering
- ★ Know the introduction of OSI reference model

The screenshot shows a presentation slide with the following details:

- Page Header:** Introduction to Computer Networks | Neso Academy
- Page Number:** 11 / 267
- Section:** Computer Science > Introduction to Computer Networks (PPT)
- Section Title:** Introduction to Computer Networks
- Text Content:** components (Layers).
- Section:** Advantages:
- List:**
 - ★ It provides more modular design.
 - ★ Easy to troubleshoot.

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'Protocols' is displayed in yellow. To the left of the main content area, there is a sidebar with a downward arrow and the text 'Introduction to Computer Networks'. On the right side of the slide, there are two search icons. The main content area contains a bullet point: ★ The protocols in each layer go communication.

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below this, a title bar displays 'Introduction to Computer Networks' with a dropdown arrow, and the page number '11 / 267'. To the right of the page number are two search icons. The main content area features a large white star icon followed by the text '★ The TCP/IP Model.'.

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below this, a dropdown menu shows 'Introduction to Computer Networks'. On the right side of the navigation bar are icons for search and refresh. The main content area has a title 'The OSI Model' in yellow. Below the title is a list of bullet points:

- ★ It is a model for understanding and designing computer networks that is flexible, robust, and interoperable.
- ★ Developed by the International Standards Organization (ISO).
- ★ The OSI model is not a protocol.
- ★ It is only a guideline and hence it is not mandatory.

The screenshot shows a presentation slide with the following details:

- Title:** The OSI Model
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon.
- Download:** A document icon.

The slide content includes:

- Text:** communication between different to the logic of the underlying hardware
- List:** ★ The OSI model was never fully implemented

The TCP/IP Model

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

- ★ The TCP/IP protocol suite was developed by the Defense Advanced Research Projects Agency (DARPA) in the late 1970s.
- ★ Therefore, the layers in the TCP/IP model are different from those in the OSI model.
- ★ TCP/IP is a hierarchical protocol model, consisting of four layers, each of which provides a specific function.

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are present.
- Content:** Three bullet points under the heading "★ Understand the OSI reference model":
 - ★ Understand the OSI reference model
 - ★ List various layers in the OSI reference model
 - ★ Understand how each layers interact

The screenshot shows a presentation slide with the following details:

- Title Bar:** The title bar at the top of the slide reads "Advantages of a Network".
- Breadcrumbs:** The breadcrumb navigation indicates the path: Home > Computer Science > Introduction to Computer Networks (PPT).
- Section Title:** The main section title is "Introduction to Computer Networks".
- Page Number:** The page number is 11, and there are 267 pages in total.
- Search Function:** There are search icons for magnifying glass and a question mark.
- Text Content:** The visible text on the slide includes "more manageable components (Locally", "★ More modular design and easy to t", and "★ Easier to troubleshoot".

The screenshot shows a presentation slide with the following details:

- Title Bar:** Two OSI Models
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon.
- Help:** A question mark icon.

The main content of the slide is displayed in two parts:

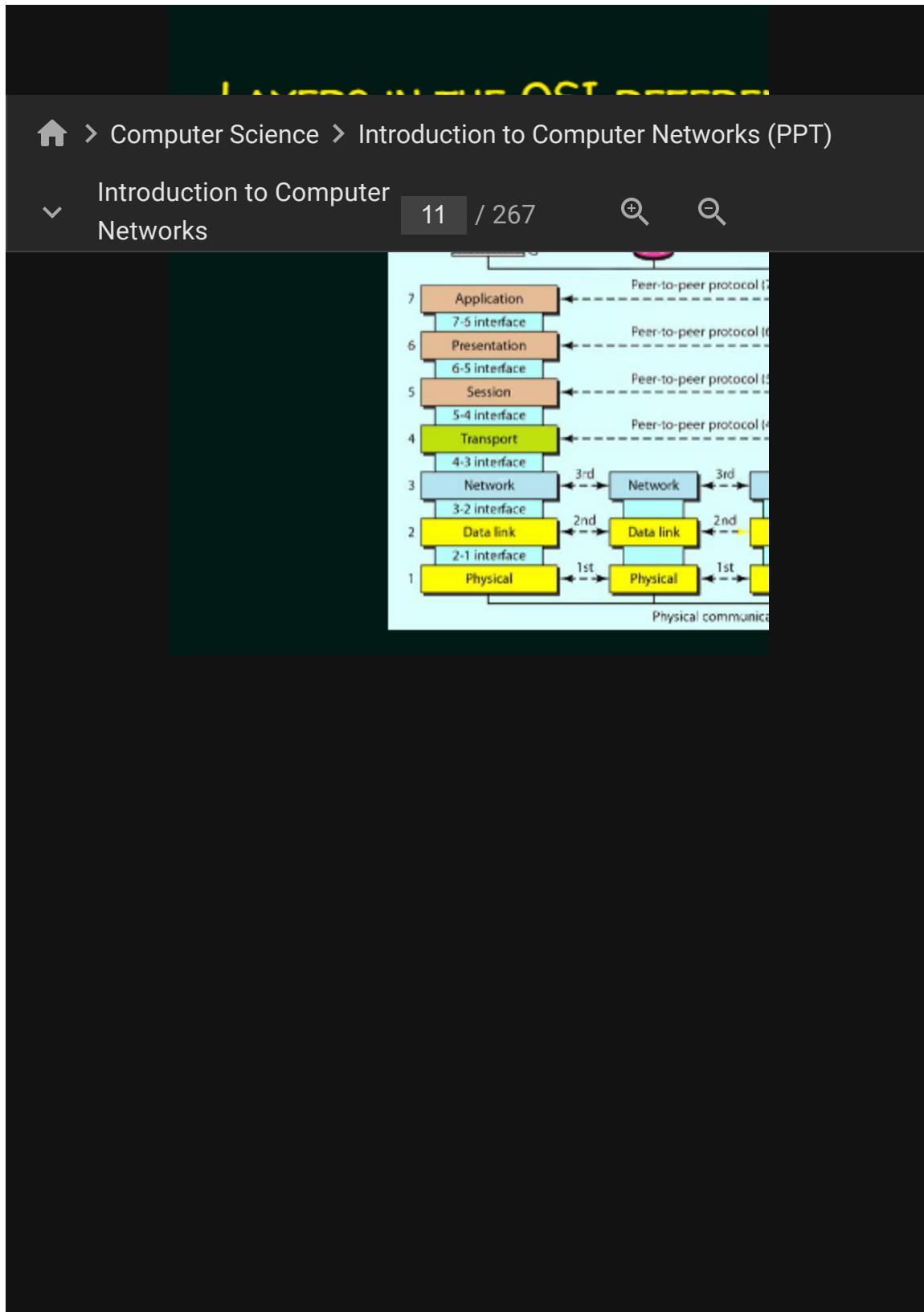
Part 1 (Top): different systems without requiring
underlying hardware and software.

Part 2 (Bottom): (Text partially obscured by a large red rectangular redaction box)

The screenshot shows a presentation slide with the following details:

- Title:** LAYERED MODEL OF COMPUTER NETWORKS
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A search bar with a magnifying glass icon.
- Content:** A diagram of the OSI model layers. The layers are represented by colored rectangles stacked vertically:
 - Presentation Layer (Blue)
 - Session Layer (Green)
 - Transport Layer (Light Green)
 - Network Layer (Yellow-green)
 - Data Link Layer (Yellow)
 - Physical Layer (Orange)

The image shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below this is a search bar with a magnifying glass icon and a dropdown menu showing 'Introduction to Computer Networks'. The main content area features a title 'How to Develop Good Habits' in large, bold, yellow letters. Below the title is a list of six items, each in a colored box: 'Sausage' (green), 'Throw' (light green), 'Not' (yellow-green), 'Do' (yellow), and 'Please' (orange). There is also a small red box next to 'Please'.



The screenshot shows a presentation slide with the following elements:

- Navigation:** Home icon, Computer Science icon, and a breadcrumb trail: Computer Science > Introduction to Computer Networks (PPT).
- Section Title:** Introduction to Computer Networks
- Page Information:** 11 / 267, magnifying glass icons for search and filters.
- Content List:** A bulleted list of chapters:
 - ★ Chapter 2: Data Link Layer
 - ★ Chapter 3: Network Layer
 - ★ Chapter 4: Transport Layer
 - ★ Chapter 5: Application Layer
 - ★ Chapter 6: Network Security

A Computer Networks

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

Application Layer Application Layer

Session Layer Presentation Layer

Presentation Layer Session Layer

Transport Layer Network Layer

Network Layer Transport Layer

Data Link Layer Data Link Layer

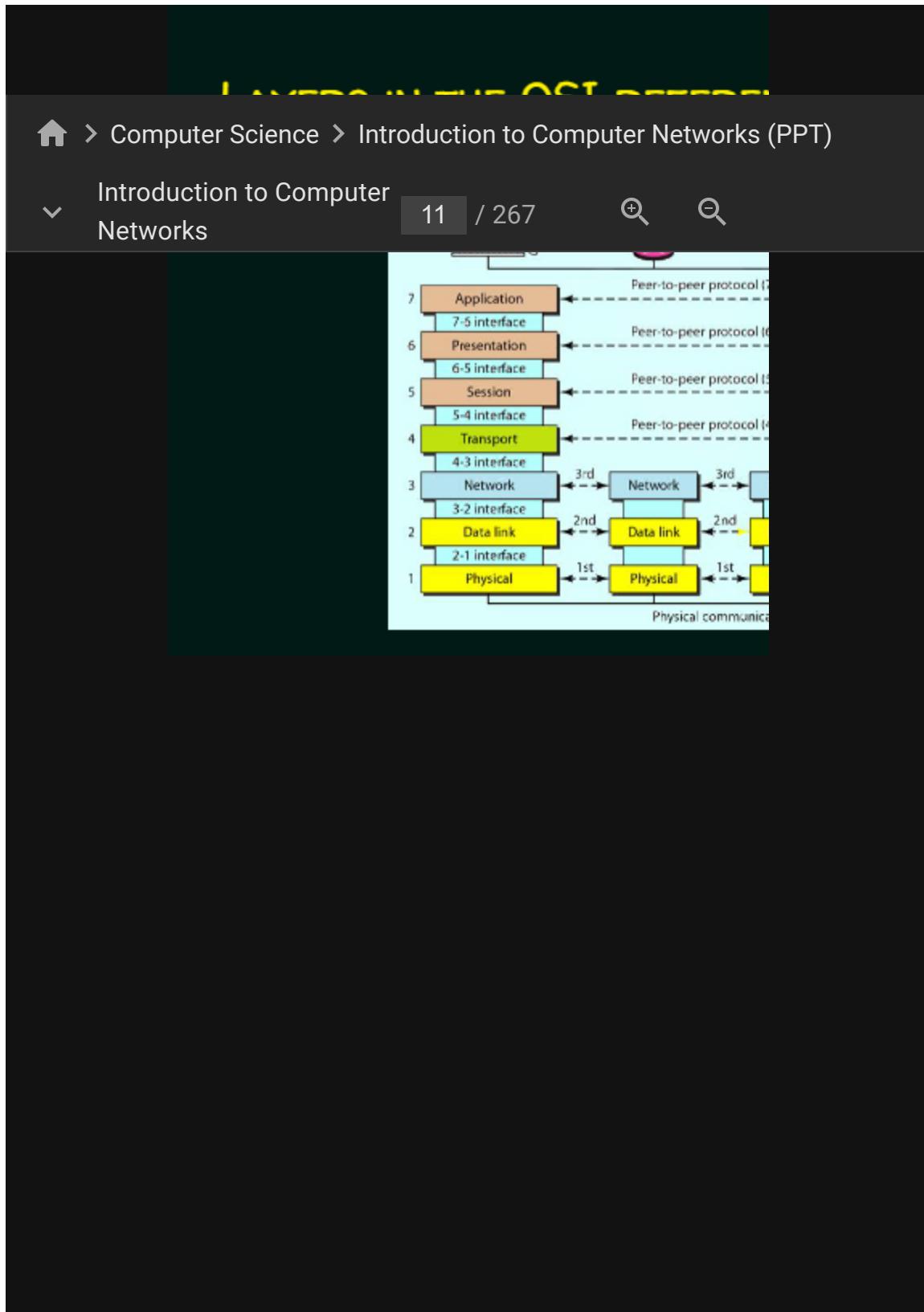
Physical Layer Physical Layer

A B

The screenshot shows a presentation slide with the following details:

- Title Bar:** The title bar is dark green with the text "Introduction to Computer Networks" in white.
- Breadcrumbs:** The breadcrumb navigation shows the path: Home > Computer Science > Introduction to Computer Networks (PPT).
- Section Title:** The main section title is "Introduction to Computer Networks".
- Page Number:** The page number is 11, and there are 267 pages in total.
- Search Function:** There are two search icons: one for magnifying glass and one for a document.
- Content:** The content area contains three bullet points, each starting with a star and followed by the text "Understand the services offered by".

★ Understand the services offered by
★ Understand the services offered by
★ Understand the services offered by



The screenshot shows a presentation slide with the following details:

- Title:** LAYERED MODEL OF COMPUTER NETWORKS
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are present.

The main content is a diagram of the Seven Layers of Network Architecture, arranged vertically from top to bottom:

- Presentation Layer
- Session Layer
- Transport Layer
- Network Layer
- Data Link Layer
- Physical Layer

LAYERED MODEL OF COMPUTER NETWORKS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

The diagram illustrates the layered model of computer networks, consisting of seven layers arranged vertically:

- Presentation Layer (blue)
- Session Layer (green)
- Transport Layer (light green)
- Network Layer (yellow-green)
- Data Link Layer (yellow)
- Physical Layer (orange)

A yellow arrow points from the Presentation Layer towards the right side of the slide.

LAYERED MODEL OF COMPUTER NETWORKS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

The diagram illustrates the layered model of computer networks, consisting of seven layers arranged vertically:

- Presentation Layer (light blue)
- Session Layer (yellow, highlighted)
- Transport Layer (light green)
- Network Layer (light green)
- Data Link Layer (yellow)
- Physical Layer (orange)

An arrow points from the Session Layer to the right, indicating its function in establishing and managing network sessions.

LAYERED MODEL OF COMPUTER NETWORKS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

The diagram illustrates the layered model of computer networks, showing seven layers stacked vertically. From bottom to top, the layers are: Physical Layer (orange), Data Link Layer (yellow), Network Layer (light green), Transport Layer (green, highlighted with a yellow border), Session Layer (medium green), Presentation Layer (light blue), and Application Layer (light orange). An arrow points from the Transport layer towards the right, labeled "TL INFO - odfk".

LAYERED MODEL OF COMPUTER NETWORKS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

The diagram illustrates the layered model of computer networks, consisting of seven layers arranged vertically:

- Presentation Layer (light blue)
- Session Layer (medium blue)
- Transport Layer (dark blue)
- Network Layer** (yellow-green, highlighted with a yellow border and arrow pointing to the right)
- Data Link Layer (orange)
- Physical Layer (red)

NL INFO - TL IN

LAYERED MODEL OF COMPUTER NETWORKS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

The diagram illustrates the layered model of computer networks. It consists of seven horizontal bars, each representing a layer. From top to bottom, the layers are: Presentation Layer (light blue), Session Layer (medium blue), Transport Layer (dark blue), Network Layer (light green), Data Link Layer (yellow, highlighted with a yellow border), Physical Layer (orange), and DL INFO - NL INFO (grey). An arrow points from the Data Link Layer bar towards the right.

The diagram illustrates the OSI model layers as a vertical stack of colored rectangles. From top to bottom, the layers are:

- Presentation Layer (light blue)
- Session Layer (medium blue)
- Transport Layer (dark blue)
- Network Layer (green)
- Data Link Layer (yellow)
- Physical Layer (orange)

An orange arrow points from the Physical Layer rectangle to the right, where a sequence of binary digits (101010010010...) is displayed.

LAYERED MODEL OF COMPUTER NETWORKS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

The diagram illustrates the OSI model layers. It shows a stack of seven horizontal bars, each representing a layer. From top to bottom, the layers are: Presentation Layer (light blue), Session Layer (medium blue), Transport Layer (dark blue), Network Layer (purple), Data Link Layer (yellow), and Physical Layer (orange). A bracket on the left side groups the top five layers (Presentation, Session, Transport, Network, and Data Link) together. Below the stack, a horizontal line extends to the right, containing the binary sequence '10101001001001'. A bracket underlines the last four digits of this sequence, specifically '1001'.

LAYERED MODEL OF COMPUTER NETWORKS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

SERVICES PROVIDED BY THE LAYERED MODEL

- ★ File Transfer
- ★ Mail Services
- ★ Director Services

Physical Layer

Data Link Layer

Network Layer

Transport Layer

Session Layer

Presentation Layer

Device A

LAYERED MODEL OF COMPUTER NETWORKS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Presentation Layer → It is concerned with presentation of information etc.

Session Layer

Transport Layer

Network Layer

Data Link Layer

Physical Layer

Device A

The diagram illustrates the layered model of computer networks. It consists of seven horizontal bars, each representing a layer. From bottom to top, the layers are: Physical Layer (orange), Data Link Layer (yellow), Network Layer (light green), Transport Layer (medium green), Session Layer (dark green), Presentation Layer (light blue), and Application Layer (dark blue). An arrow points from the 'Presentation Layer' bar to a text box containing the text: 'It is concerned with presentation of information etc.' To the right of the diagram, there is a small icon labeled 'Device A' which depicts a computer monitor, keyboard, and mouse.

LAYERED MODEL OF COMPUTER NETWORKS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Presentations

PDF

Print

Share

Embed

Feedback

Report

Introduction to Computer Networks

11 / 267

Search

Search

Services provided by layers

STAR SERVICES PROVIDED BY THE LAYERS

- ★ Translation
- ★ Encryption
- ★ Compression

Device A

The diagram illustrates the layered model of computer networks. It consists of seven horizontal bars, each representing a layer. From bottom to top, the layers are: Physical Layer (orange), Data Link Layer (yellow), Network Layer (light green), Transport Layer (medium green), Session Layer (dark green), Presentation Layer (light blue), and Application Layer (dark blue). An arrow points from the Presentation Layer bar to the right, labeled 'SERVICES PROVIDED'. Below this arrow, three star icons are listed: 'Translation', 'Encryption', and 'Compression'. To the right of the diagram, there is a small icon of a computer monitor and keyboard labeled 'Device A'.

LAYERED MODEL OF COMPUTER NETWORKS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

The diagram illustrates the layered model of computer networks, showing seven layers stacked vertically:

- Presentation Layer (top, light blue)
- Session Layer (yellow, highlighted)
- Transport Layer (light green)
- Network Layer (light green)
- Data Link Layer (yellow)
- Physical Layer (bottom, orange)

An arrow points from the Session Layer to a list of services:

- interaction a
- SERVICES PROVIDED
- ★ Dialog control
- ★ Synchronisation

LAYERED MODEL OF COMPUTER NETWORKS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Presentations

interaction and
SERVICES PROVIDED
★ Dialog control
★ Synchronization

The diagram illustrates the layered model of computer networks, showing seven layers stacked vertically:

- Presentation Layer (light blue)
- Session Layer (yellow, highlighted)
- Transport Layer (light green)
- Network Layer (light yellow-green)
- Data Link Layer (yellow)
- Physical Layer (orange)

A yellow arrow points from the Session Layer to the right, indicating its interaction and services provided.

Device A

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are present.
- Content:** A bulleted list of four items, each starting with a star and followed by "Understand the services offered by".

The content of the slide is as follows:

- ★ Understand the services offered by

The screenshot shows a presentation slide titled "LAYERED MODEL - OSI MODEL". The slide navigation bar indicates it is slide 11 of 267. The main content displays the seven layers of the OSI model as a vertical stack of colored rectangles:

- Presentation (light blue)
- Session (medium blue)
- Transport (light green)
- Network (medium green)
- Data Link (yellow)
- Physical (orange)

APPLICATION LAYER → A →

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Presentation Layer

Session Layer

Transport Layer

Network Layer

Data Link Layer

Physical Layer

SERVICES PROVIDED

- ★ File Transfer
- ★ Mail Services
- ★ Director



The slide displays the seven layers of the OSI model in a vertical stack. From top to bottom, the colors of the bars are teal, green, light green, yellow-green, yellow, and orange. To the right of the layers, there is a sidebar titled 'SERVICES PROVIDED' which lists three services with star icons: File Transfer, Mail Services, and Director. Below the sidebar is an icon of a computer monitor labeled 'Device A'.

Presentation Layer

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Presentations

Information exchange between applications

Provides standard interface for application layer

Protocol Data Units (PDUs)

- Text, graphics, audio, video, etc.

Services provided by presentation layer

- ★ Translation
- ★ Encryption
- ★ Compression

Protocol stack diagram:

```
graph TD; L1[Physical Layer] --- L2[Data Link Layer] --- L3[Network Layer] --- L4[Transport Layer] --- L5[Session Layer] --- L6[Presentation Layer]; L6 --> Services[information exchange, SERVICES PROVIDED, Translation, Encryption, Compression]
```

Device A

The screenshot shows a presentation slide with the following details:

- Title:** Computer Networks
- Page Number:** 11 / 267
- Search Function:** Two search icons are present.
- Diagram:** A vertical stack of seven colored boxes representing the OSI model layers. From top to bottom, the layers are:
 - Presentation Layer (light blue)
 - Session Layer (yellow, highlighted with a yellow border)
 - Transport Layer (light green)
 - Network Layer (light green)
 - Data Link Layer (yellow)
 - Physical Layer (orange)A yellow arrow points from the Session Layer box to the right.
- Text on the right:** "interaction a
SERVICES PRO
★ Dialog co
★ Synchron"
- Image on the right:** A small icon of a computer monitor and keyboard labeled "Device A".

LAYERED MODEL OF COMPUTER NETWORKS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

The diagram illustrates the layered model of computer networks, showing seven layers stacked vertically. From top to bottom, the layers are: Presentation Layer, Session Layer, Transport Layer, Network Layer, Data Link Layer, and Physical Layer. The Transport Layer is highlighted with a yellow border. To the right of the diagram, a yellow arrow points to the Transport Layer, with the text "It is responsible for end-to-end delivery of entire message" written next to it.

LAYERED MODEL OF COMPUTER NETWORKS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

SERVICES PROVIDED BY THE TRANSPORT LAYER

- ★ Port addressing
- ★ Segmentation and reassembly
- ★ Connection management
- ★ End-to-End delivery
- ★ Error correction

The diagram illustrates the OSI model layers as stacked horizontal rectangles. From top to bottom, the layers are: Presentation Layer (light blue), Session Layer (medium blue), Transport Layer (dark blue, highlighted with a yellow border and a yellow arrow pointing to the services list), Network Layer (light green), Data Link Layer (medium green), and Physical Layer (orange). To the right of the Transport layer, a vertical list of services is provided:

- ★ Port addressing
- ★ Segmentation and reassembly
- ★ Connection management
- ★ End-to-End delivery
- ★ Error correction

Device A

LAYER 3 - THE NETWORK LAYER

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Presentations

It is responsible for source to the destination delivery of data. It provides logical address to the network layer.

SERVICES PROVIDED BY THE NETWORK LAYER:

- ★ Logical addressing
- ★ Routing.

Device A

LAYERED MODEL OF COMPUTER NETWORKS

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Node to Node SERVICES PROVIDED

- ★ Framing.
- ★ Physical.
- ★ Flow Control.
- ★ Error Control.
- ★ Access Control.

The diagram illustrates the layered model of computer networks. It shows seven layers stacked vertically: Presentation Layer (light blue), Session Layer (medium blue), Transport Layer (dark blue), Network Layer (light green), Data Link Layer (yellow), Physical Layer (orange), and a small unlabeled red layer at the bottom. A yellow arrow points from the Data Link layer towards the right side of the slide, which contains a list of services provided at the node-to-node level. On the far right, there is a small icon of a computer monitor and keyboard labeled "Device A".

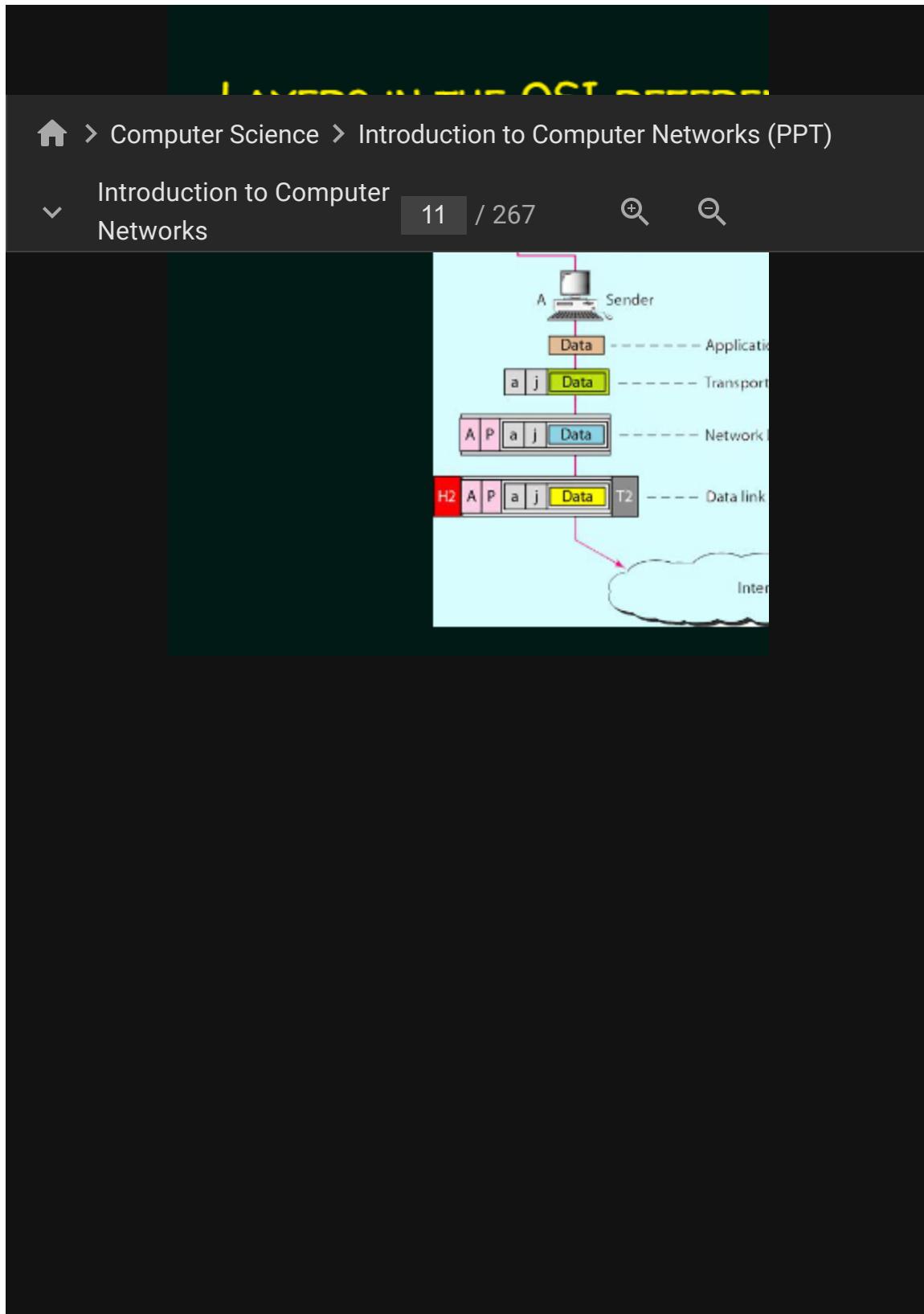
LAYERS IN THE OSI REFERENCE MODEL

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

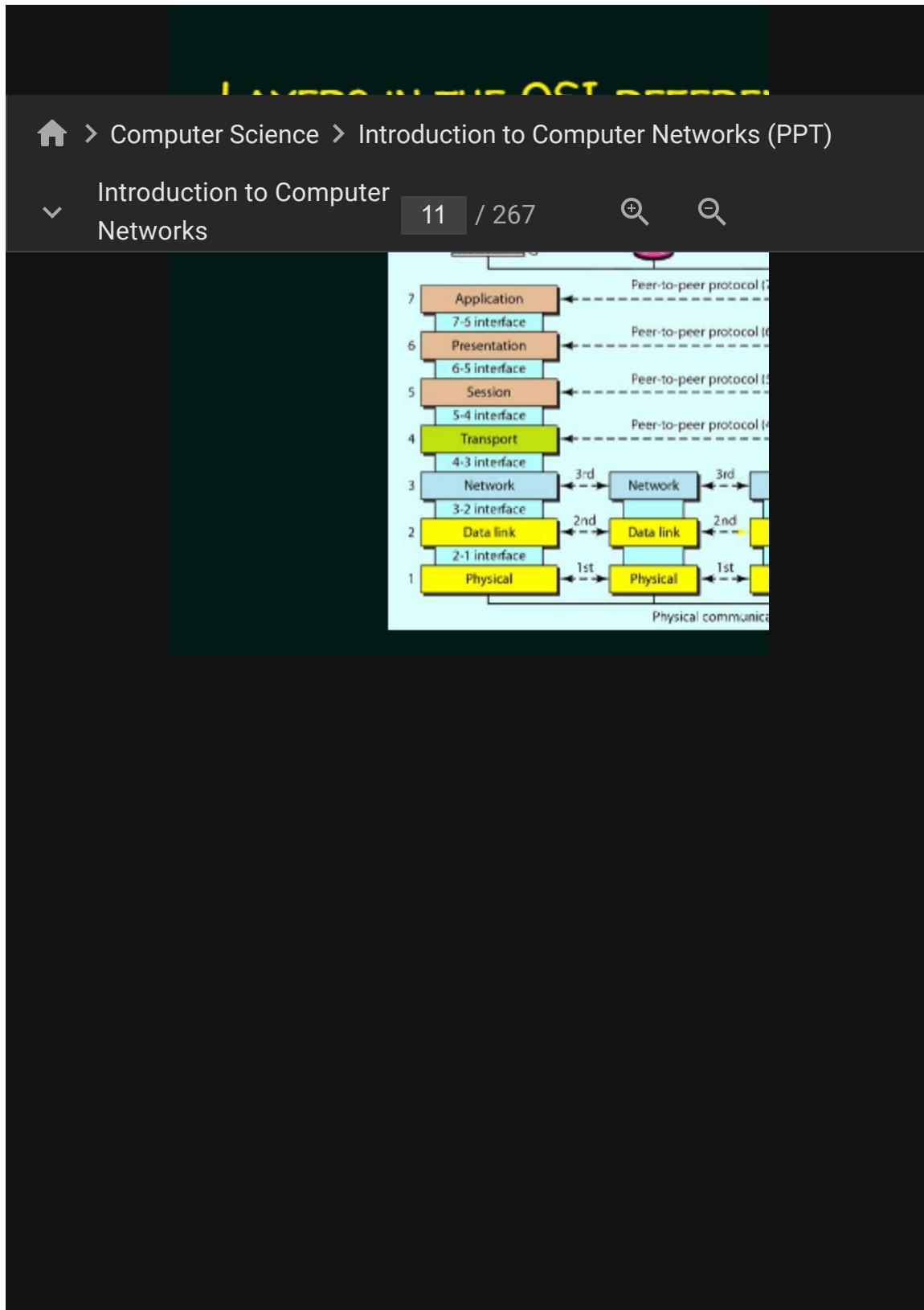
The diagram illustrates the seven layers of the OSI Reference Model. The layers are represented by colored rectangular boxes stacked vertically. From bottom to top, the colors are orange (Physical), yellow (Data Link), light green (Network), medium green (Transport), dark green (Session), light blue (Presentation), and teal (Physical). An orange arrow points from the Physical layer box to the right, indicating its connection to the list of specifications on the right.

Layer	Specifications
Presentation Layer	specifications
Session Layer	SERVICES PROVIDED
Transport Layer	★ Physical layer
Network Layer	★ Representation
Data Link Layer	★ Data rate
Physical Layer	★ Synchronization
	★ Line configuration
	★ Physical addressing



The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, the text 'Computer Science > Introduction to Computer Networks (PPT)', and a dropdown menu 'Introduction to Computer Networks'. To the right of the menu are icons for search and refresh. Below the navigation bar, the slide has a title 'OBJECTIVES' in yellow. Underneath the title, there are two bullet points, each preceded by a star symbol:

- ★ Recall the services offered by each layer of the OSI reference model.
- ★ Understand the working of OSI reference model.



The screenshot shows a presentation slide with the following content:

Computer Networks by Neso

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Presentations

Layer	Description
Presentation Layer	Translation, Encryption
Session Layer	Dialog control and Sync.
Transport Layer	Port Addressing, Segmentation and Error Control
Network Layer	Logical Addressing and Routing
Data Link Layer	Framing, Physical Addressing and Control.
Physical Layer	Physical characteristics, Synchronization of bits, Transmission mode.

WADERS OF THE OCT -----

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Transmissio

010 0101010101101010000010000

D2

H2

T2

H7 D7

H6 D6

H5 D5

H4 D4

H3 D3

H2 D2

H1 D1

WORKING OF THE OSI -----

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

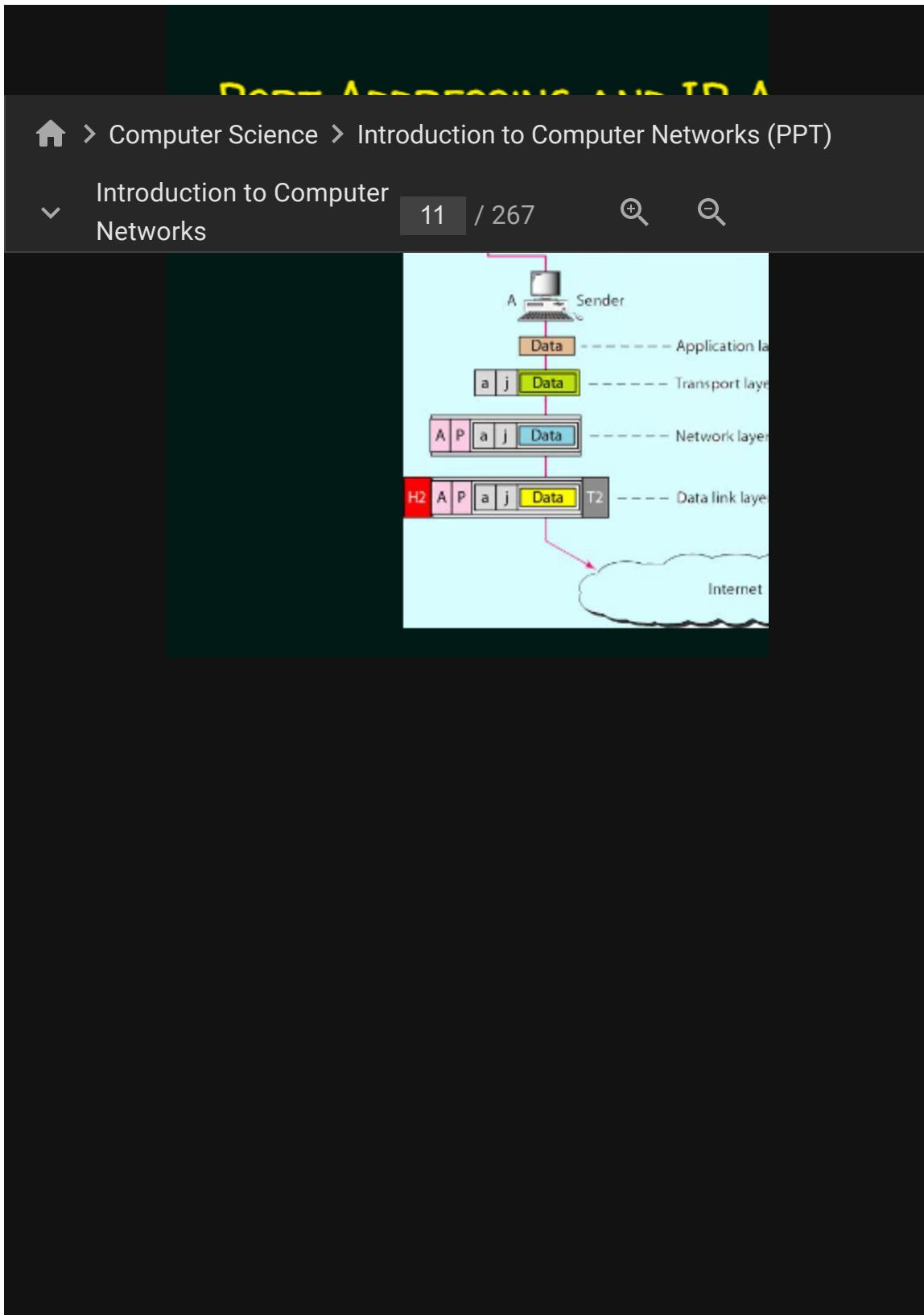
The diagram illustrates the flow of data through the OSI model layers:

- Application Layer:** A computer labeled "A" is connected to a "Data" box.
- Transport Layer:** The "Data" box is shown with a yellow "Data" field and a green "a j" field.
- Network Layer:** The transport layer data is shown with a pink "A P" field, a green "a j" field, and a blue "Data" field.
- Data Link Layer:** The network layer data is shown with a red "H2" field, a pink "A P" field, a green "a j" field, a yellow "Data" field, and a grey "T2" field.
- Physical Layer:** The data link layer frame is transmitted over a "Link Layer" to an "Interface".

Legend for dashed lines:

- Application layer boundary
- Transport layer boundary
- Network layer boundary
- Data link layer boundary

The screenshot shows a presentation slide from a website. At the top, there's a navigation bar with a house icon, the text 'Computer Science > Introduction to Computer Networks (PPT)', and a dropdown menu 'Introduction to Computer Networks'. To the right of the menu are icons for search and refresh. Below the navigation bar, the slide number '11 / 267' is displayed. The main content of the slide begins with a star symbol followed by the text 'Understand the role of Port Addressing in Computer Network w'. The rest of the slide content is cut off by a dark red vertical bar.

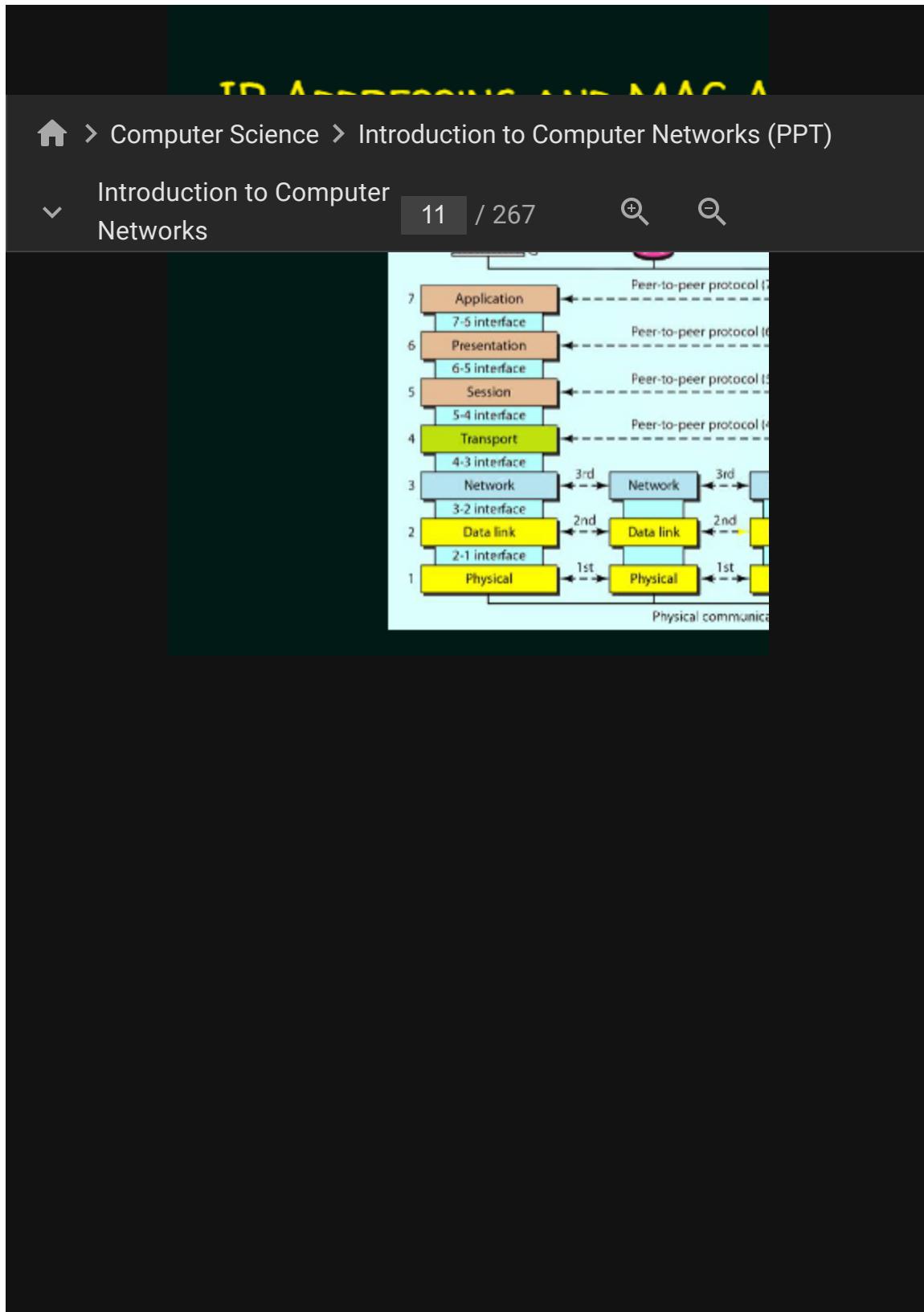


TD ADDRESSING AND MAC A

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

The diagram illustrates the flow of data packets across two LAN environments, LAN 1 and LAN 3. In LAN 1, a packet with source MAC address 20:10:A:P and destination MAC address T2 passes through the Data link layer. In LAN 3, the same packet is received by a computer labeled 'Receiver' with MAC address P:95. The packet is processed by the Data link layer, which strips off the MAC addresses and re-adds them with the new MAC address 95:66:A:P. The original MAC addresses are labeled as being changed. The packet then reaches the Network layer and upper layers, eventually being received by the 'Receiver'.



The screenshot shows a presentation slide with the following details:

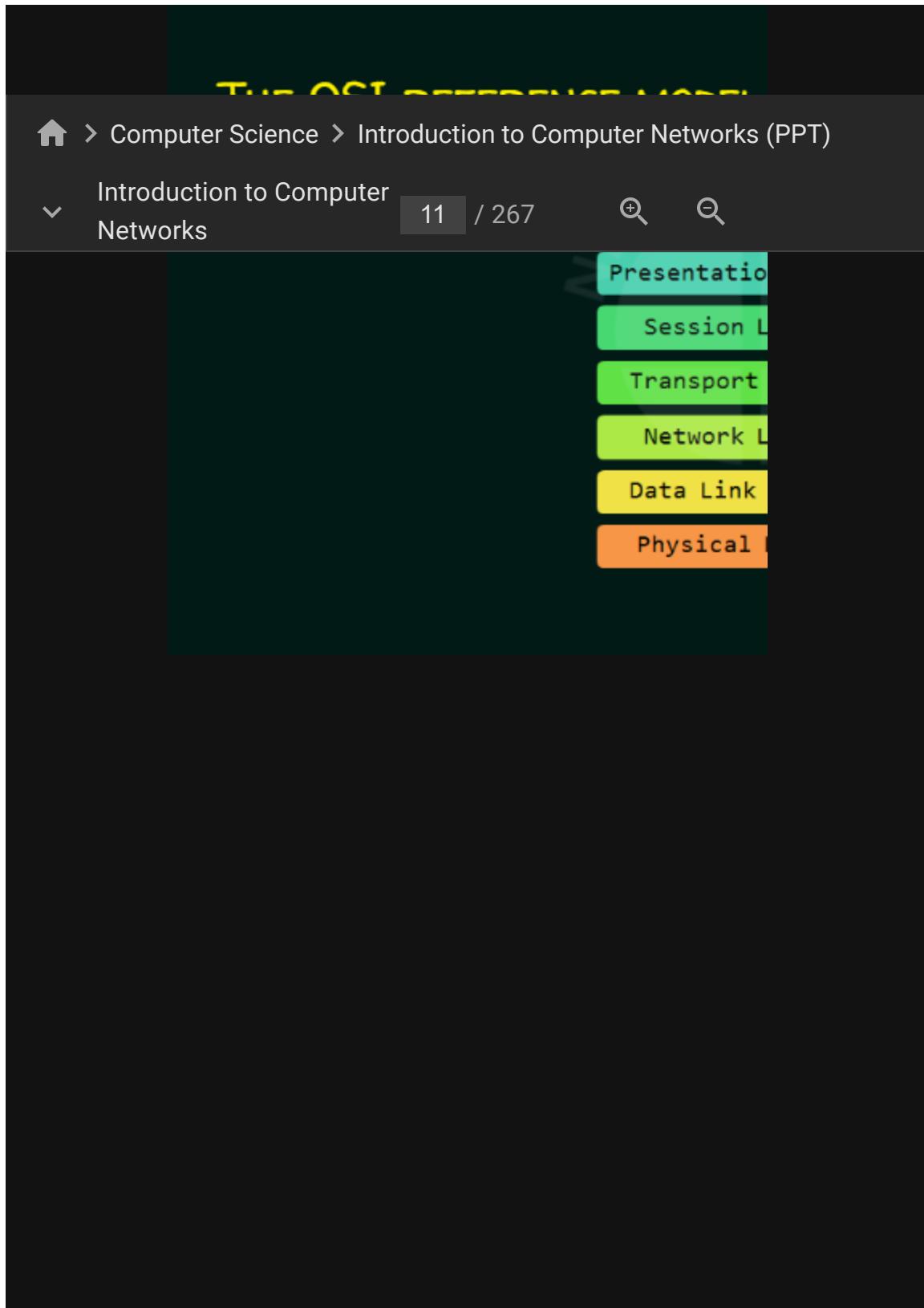
- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are present.
- Content:** A list of learning objectives:
 - ★ Understand the TCP/IP Protocol suite.
 - ★ Compare OSI and TCP/IP models.
 - ★ Understand the list of protocols in TCP/IP.
 - ★ Know about Protocol Data Unit (PDU).

The OSI Reference Model

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

Presentatio
Session L
Transport
Network L
Data Link
Physical L



The screenshot shows a presentation slide titled "OSI Reference Model". The slide has a dark background with a green header bar. The header bar contains the title "OSI Reference Model" in white, a navigation icon, and a search icon. Below the header, there is a breadcrumb navigation path: a house icon followed by "Computer Science > Introduction to Computer Networks (PPT)". To the right of the path is a dropdown menu labeled "Introduction to Computer Networks" with a downward arrow, and a page number "11 / 267". There are also two magnifying glass icons for search.

The main content of the slide is a diagram of the OSI Reference Model, which consists of seven horizontal layers stacked vertically. Each layer is represented by a white rectangular box with a thin blue border. The layers are labeled from top to bottom: "Presentation", "Session", "Transport", "Network", "Data Link", and "Physical". To the right of each layer, there is a color-coded vertical bar and a list of associated protocols. The "Presentation" layer is yellow and lists "HTTP, DNS, D". The "Session" layer is light green and lists nothing. The "Transport" layer is light blue and lists "TCP, UDP". The "Network" layer is light purple and lists "IPv4, IPv6, ICMPv4, ICMPv6". The "Data Link" layer is pink and lists "PPP, Frame Relay, Ethernet". The "Physical" layer is light teal and lists "Fiber, Twisted Pair, Coaxial".

The TCP/IP Model

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

Control

Transport

Internet

Network Access

Supports communication between diverse networks.

Determines the best route for data transmission.

Controls the hardware access to the network.

The diagram illustrates the TCP/IP model as a stack of four horizontal layers. From top to bottom, the layers are: Control, Transport, Internet, and Network Access. Each layer is represented by a white rectangular box with a thin blue border. To the right of each layer, there is a corresponding description in a smaller white box with a thin black border. The 'Control' layer's description is partially cut off. The 'Transport' layer's description reads 'Supports communication between diverse networks.' The 'Internet' layer's description reads 'Determines the best route for data transmission.' The 'Network Access' layer's description reads 'Controls the hardware access to the network.'

The TCP/IP protocol suite

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

The diagram illustrates the TCP/IP protocol stack, divided into four horizontal layers:

- Application Layer**: Contains protocols like DHCP, HTTP, and DNS.
- Transport Layer**: Contains protocols like UDP and TCP.
- Internet Layer**: Contains protocols like IP, NAT, and ARP.
- Network Access Layer**: Contains protocols like PPP and MAC.

The screenshot shows a presentation slide with the following details:

- Title:** Protocol Data Unit (PDU)
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons (magnifying glass and theta)

The slide content includes a diagram of the OSI model layers:

Application Layer
Transport Layer
Network Layer
Data Link Layer
Physical Layer

Protocol Data Unit (PDU)

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

The diagram illustrates the structure of Protocol Data Units (PDUs) through four nested layers:

- Data:** The innermost layer consists of three separate "Data" boxes.
- Transport header:** A single "Transport header" box is positioned above the "Data" boxes.
- Network header:** A single "Network header" box is positioned above the "Transport header" box.
- Frame header:** A single "Frame header" box is positioned above the "Network header" box.

Below the frame structure, the binary representation of the data is shown as:
1100010101000101100101001010101001

A screenshot of a presentation slide titled "Introduction to Computer Networks". The slide has a dark background with a green header bar containing the title. Below the header, there is a breadcrumb navigation: a house icon followed by "Computer Science > Introduction to Computer Networks (PPT)". To the right of the navigation is a dropdown menu with "Introduction to Computer Networks" and a search bar with two icons. The main content area contains a 2x2 grid table:

Transport – Segment	Transport – Frame
Network – Frame	Network – Packet
Data Link – Packet	Data Link – Segment
Physical – Bit	Physical – Bit
A	B

The screenshot shows a presentation slide from Neso Academy. The title bar indicates the page is 'Computer Science > Introduction to Computer Networks (PPT)'. The slide content is organized into sections:

- ★ Know the basic networking commands**
- IPCONFIG
 - IPCONFIG/ALL
 - NSLOOKUP
 - PING
 - TRACERT

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'Introduction to Computer Networks' is displayed with a dropdown arrow. To the right of the title are page navigation controls showing '11 / 267'. Further right are two search icons. The main content area contains three bullet points, each preceded by a star symbol:

- ★ Download and work with Cisco Packets
- ★ Know the basics of Cisco Packet Tracer
- ★ Establish an example peer-to-peer network

The screenshot shows a presentation slide with the following details:

- Title Bar:** 'Introduction to Computer Networks' (PPT)
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section Header:** 'Introduction to Computer Networks'
- Page Number:** 11 / 267
- Search:** Two search icons (magnifying glass and theta)
- Content:** A bulleted list:
 - ★ An innovative and powerful network
 - practice, discovery and troubleshooting
 - ★ Helps to understand networks practice

The screenshot shows a presentation slide with the following details:

- Title Bar:** The title bar is dark green with the text "Introduction to Computer Networks" in white.
- Breadcrumbs:** The breadcrumb navigation shows the path: Home > Computer Science > Introduction to Computer Networks (PPT).
- Section Title:** The main section title is "Introduction to Computer Networks".
- Page Number:** The page number is 11 / 267.
- Search Function:** There are two search icons: a magnifying glass and a question mark.
- Content:** The slide contains a bulleted list of learning objectives:
 - ★ Know the basics of Cisco Packet Tracer.
 - ★ Know about hub.
 - ★ Simulate LAN using hub.
 - ★ Understand the pros and cons of hub.

The screenshot shows a presentation slide with a dark background. At the top, there's a navigation bar with icons for home, back, forward, and search. Below the bar, the title 'Hub' is displayed in yellow. The main content area has a white background and contains the following text and list:

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

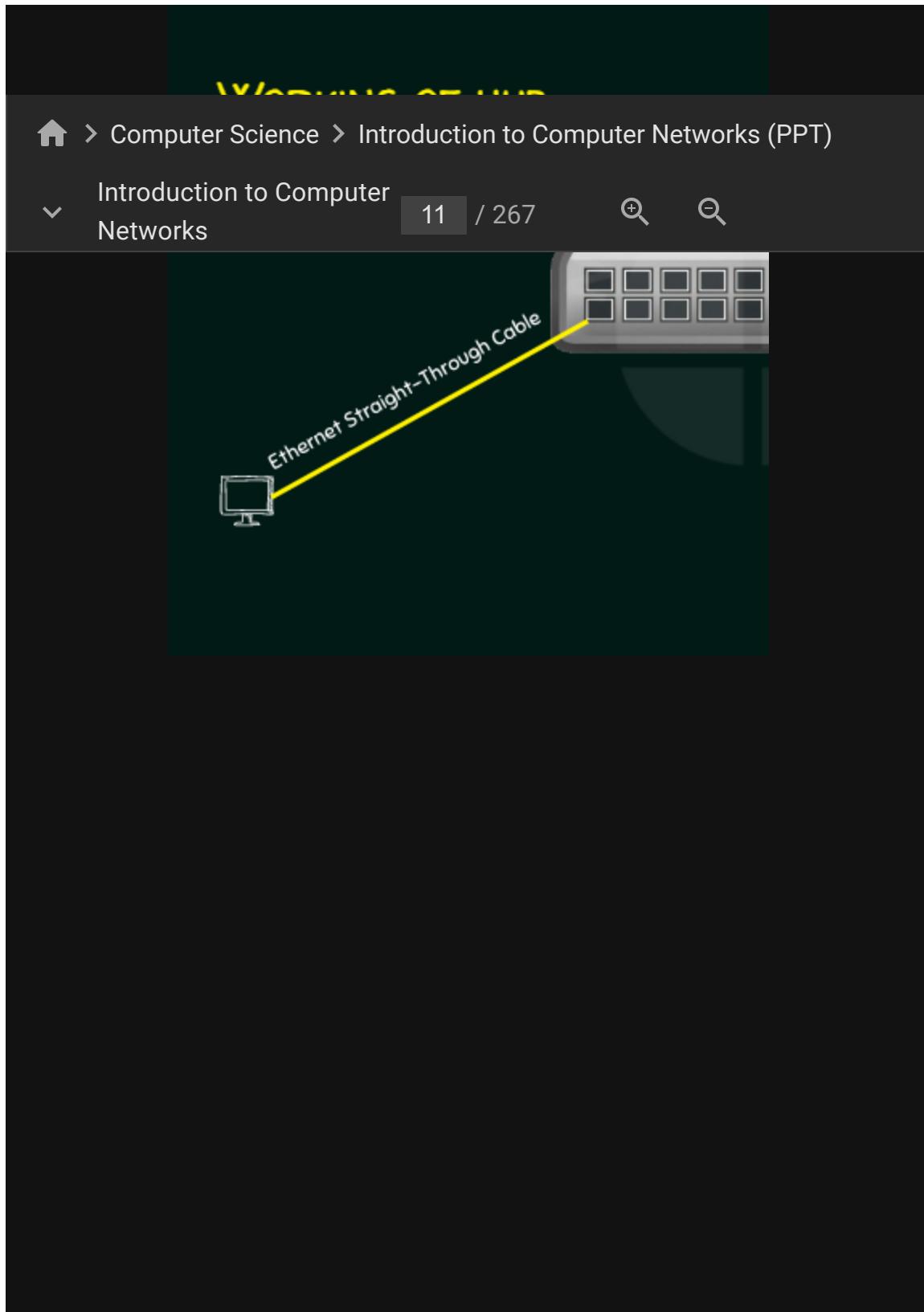
★ Hub works at the physical layer of the network.

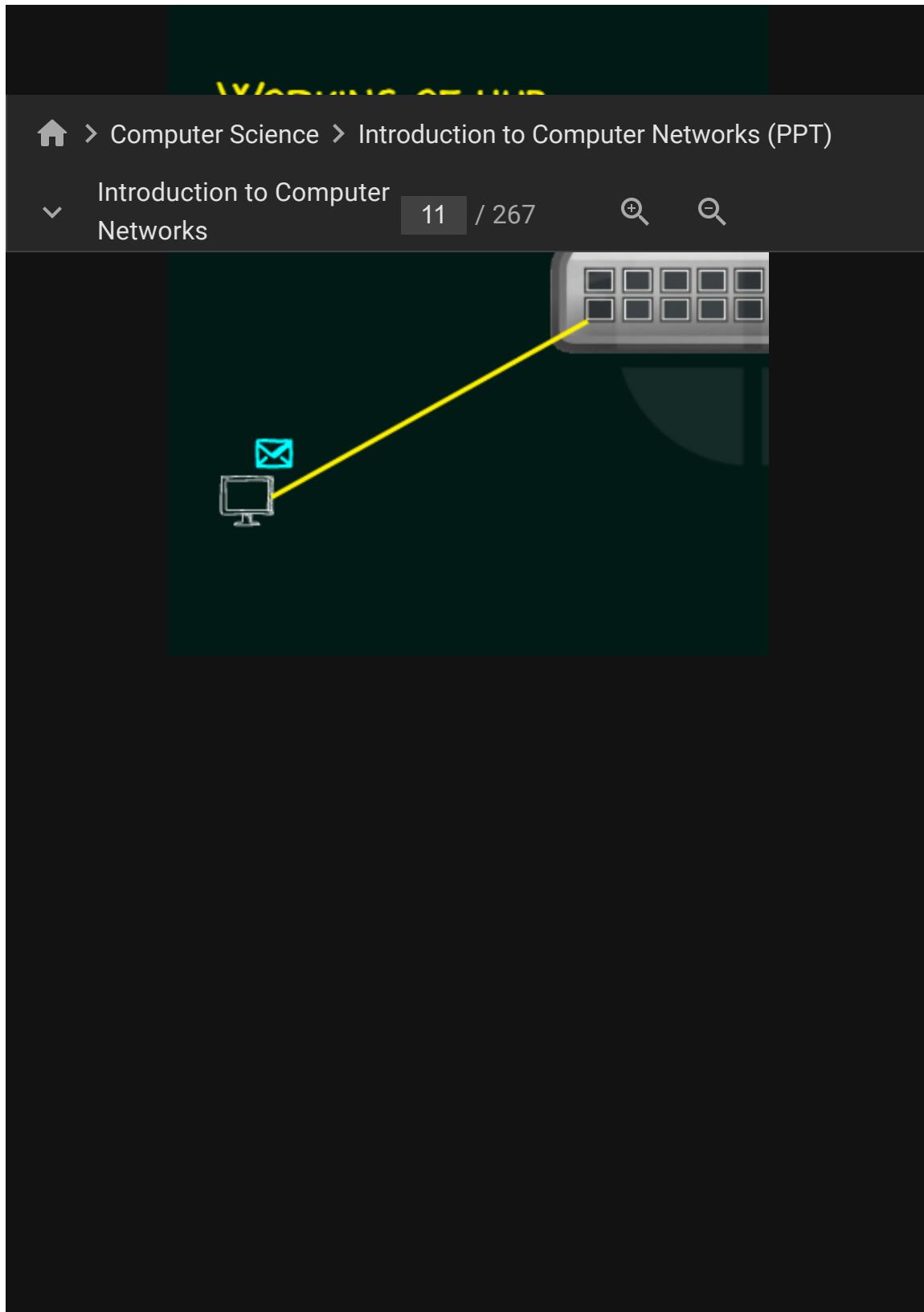
★ Used to set up LAN.

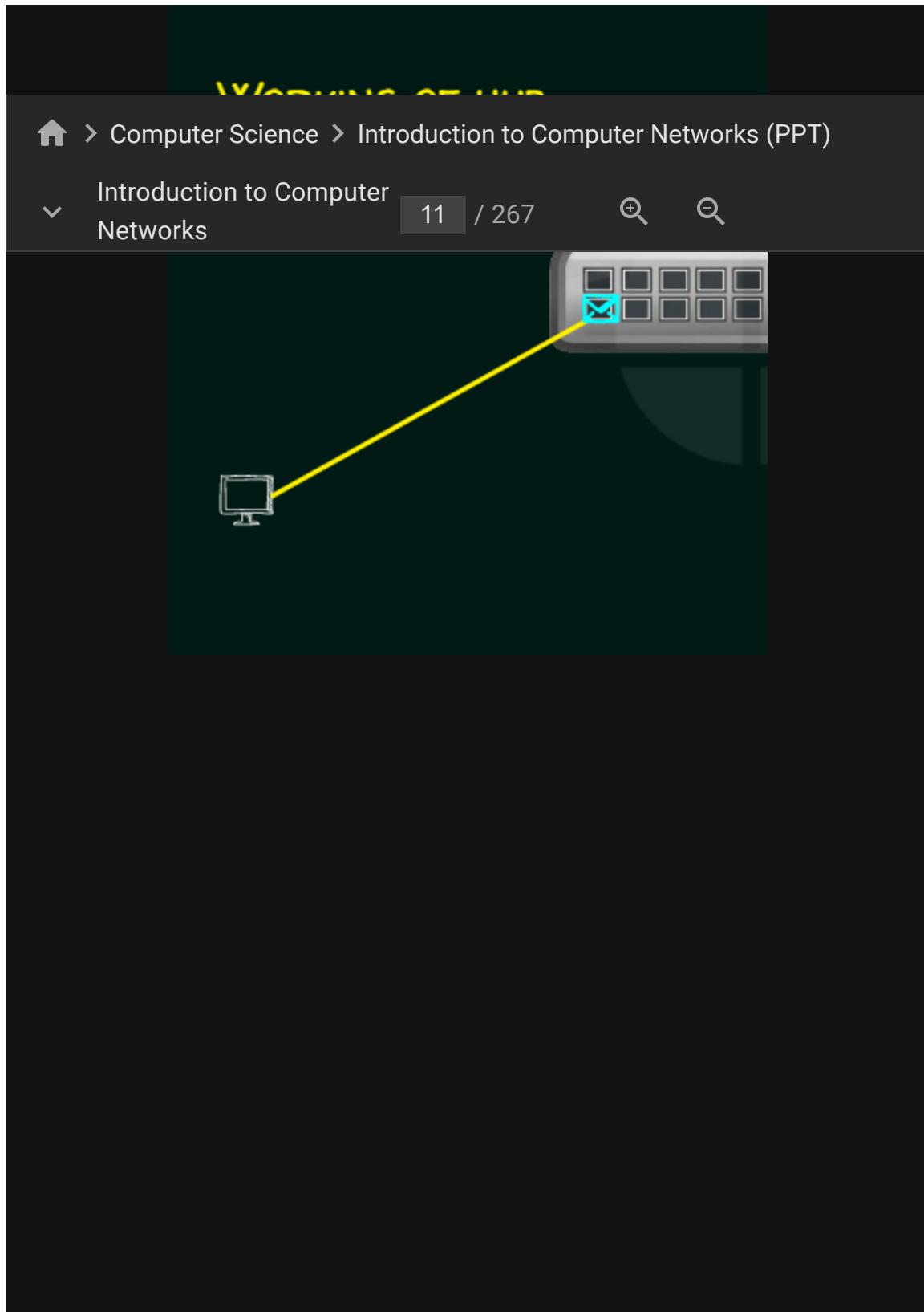
★ Has multiple ports.

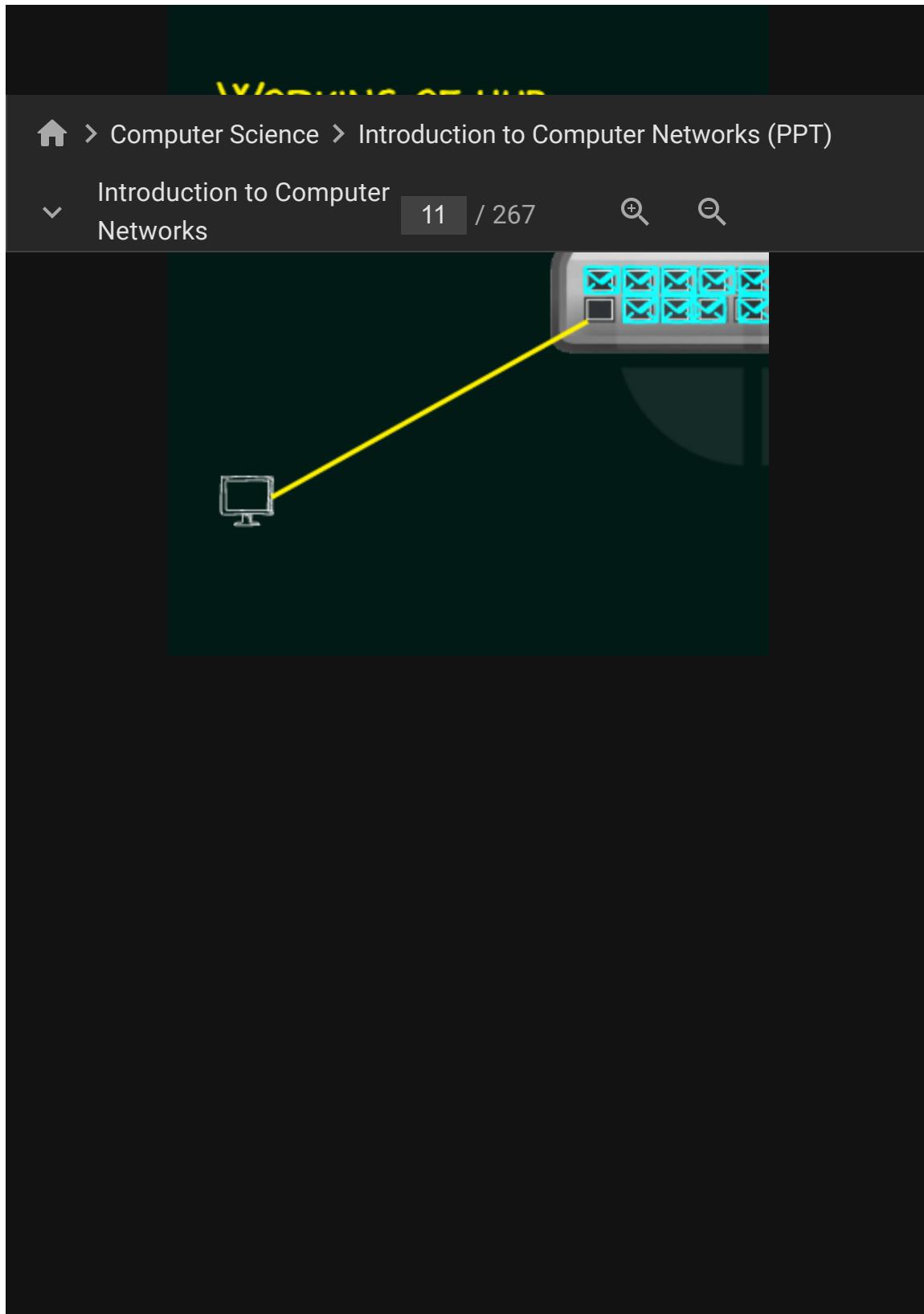
★ Star topology.

★ When a packet arrives at one port, it is sent out through all other ports so that all segments of the LAN can see the packet.









The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with icons for home, back, forward, and search, followed by the text 'Hub - Pros and Cons'. Below the navigation bar, the slide title is 'Hub - Pros and Cons'. Underneath the title, there is a breadcrumb navigation path: Home > Computer Science > Introduction to Computer Networks (PPT). To the right of the path, there is a dropdown menu for 'Introduction to Computer Networks' and a page number indicator '11 / 267' with magnifying glass icons for search.

PROS

- ★ Cheaper than switches.
- ★ Works good for smaller network.

CONS

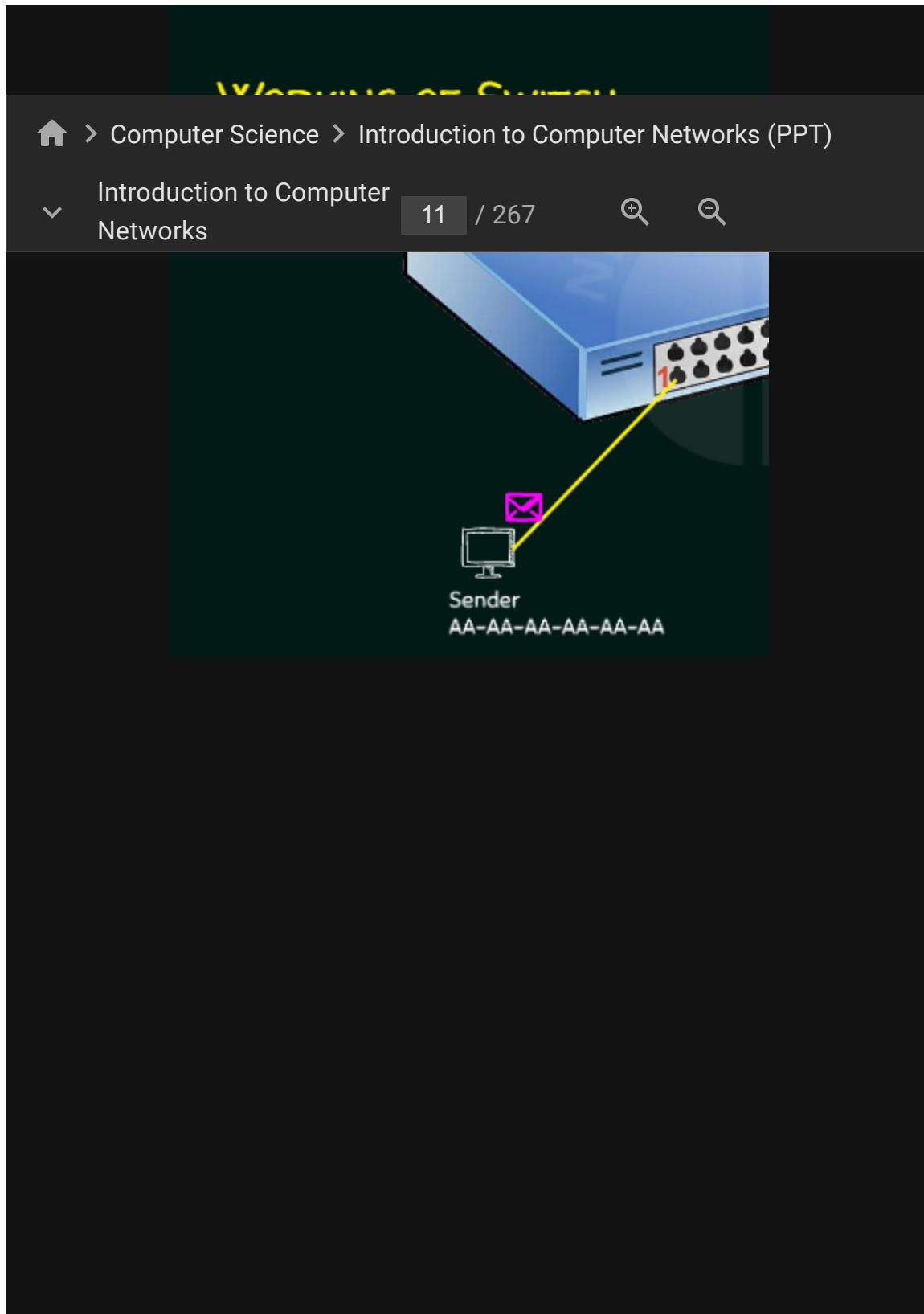
- ★ Issues with broadcast.
- ★ No memory.
- ★ Normally runs in half duplex mode.

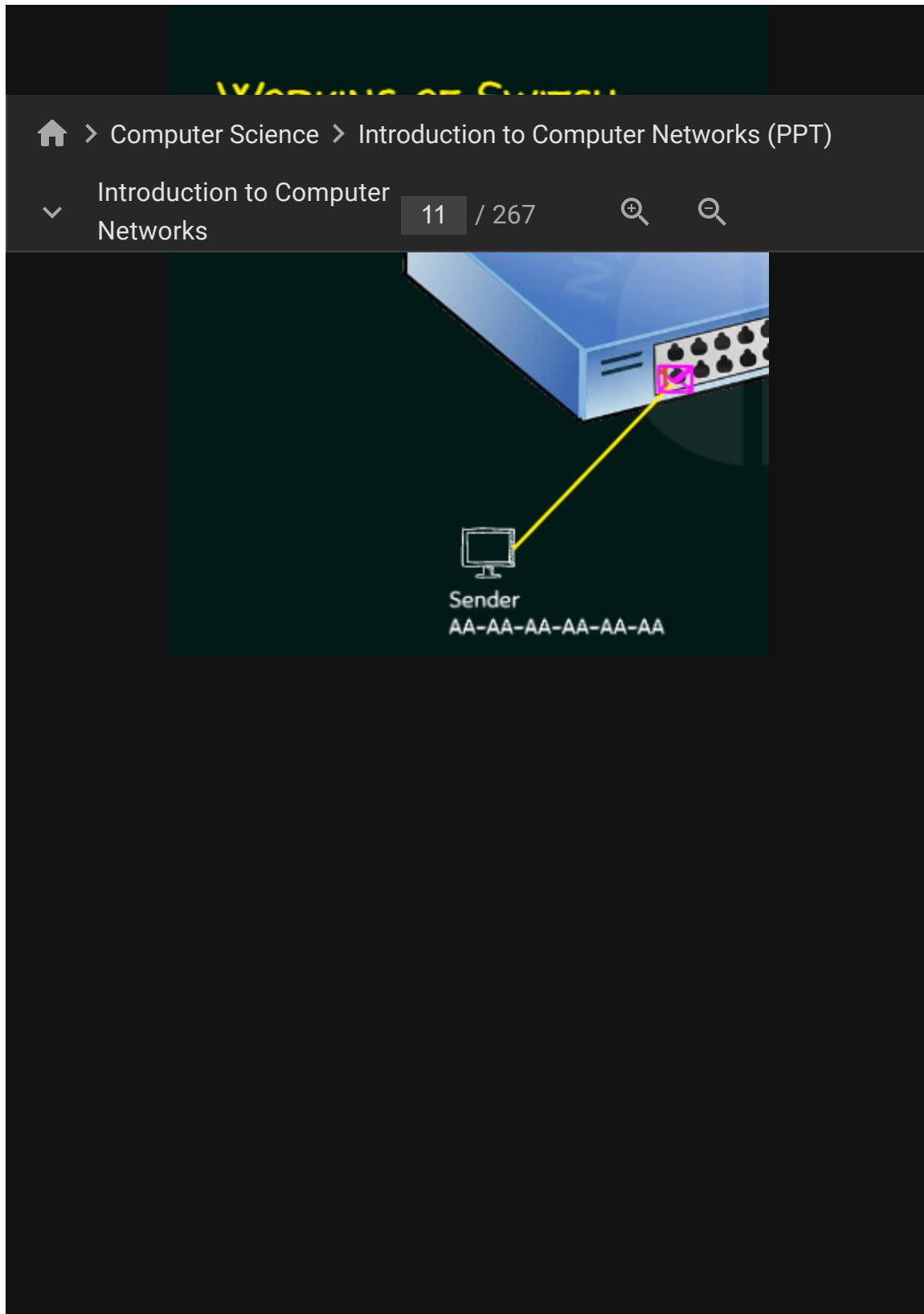
The screenshot shows a presentation slide with the following details:

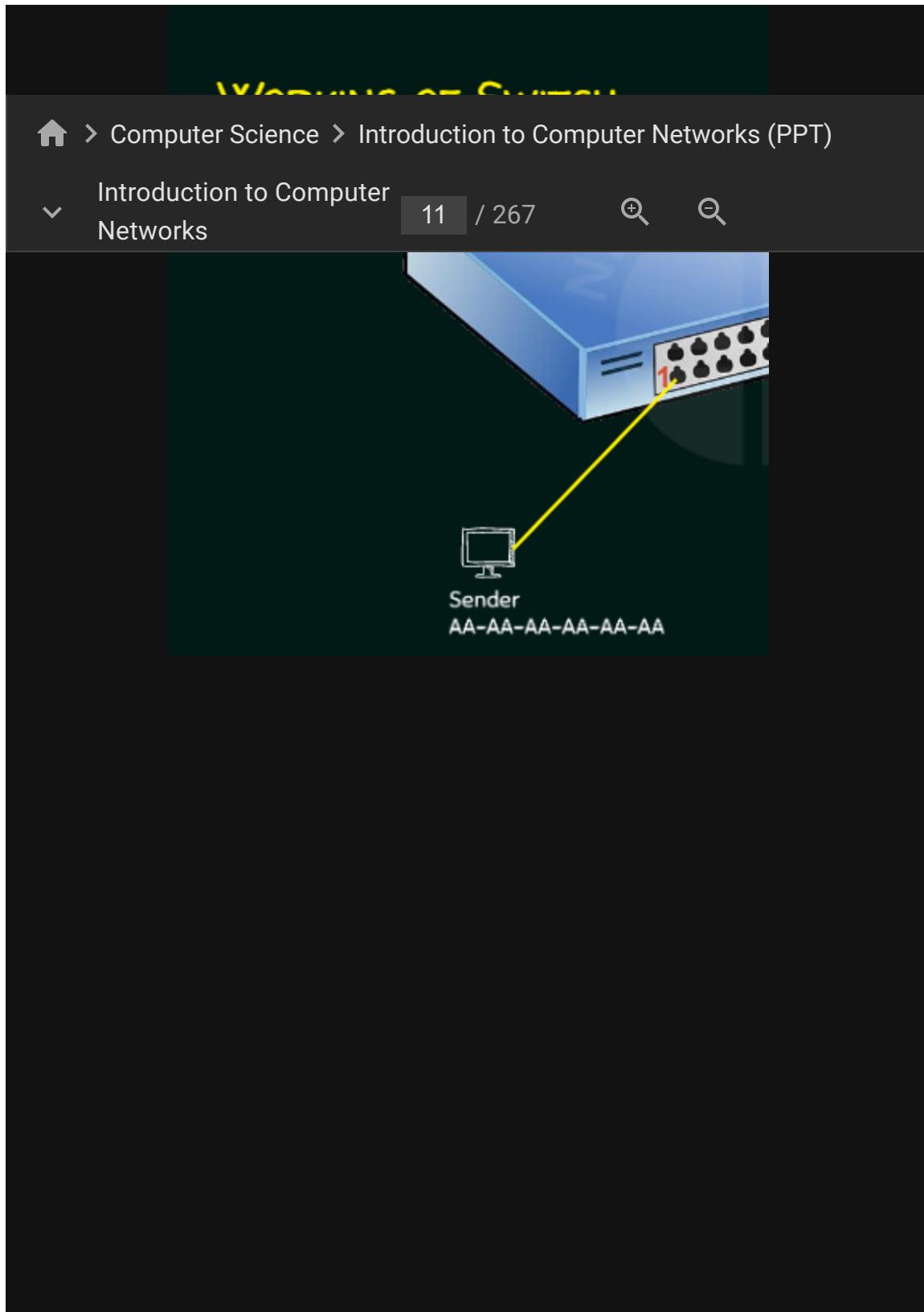
- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are present.
- Content:** A list of learning objectives:
 - ★ Learn the Cisco Packet Tracer using.
 - ★ Simulate LAN using switch.
 - ★ Understand the difference between

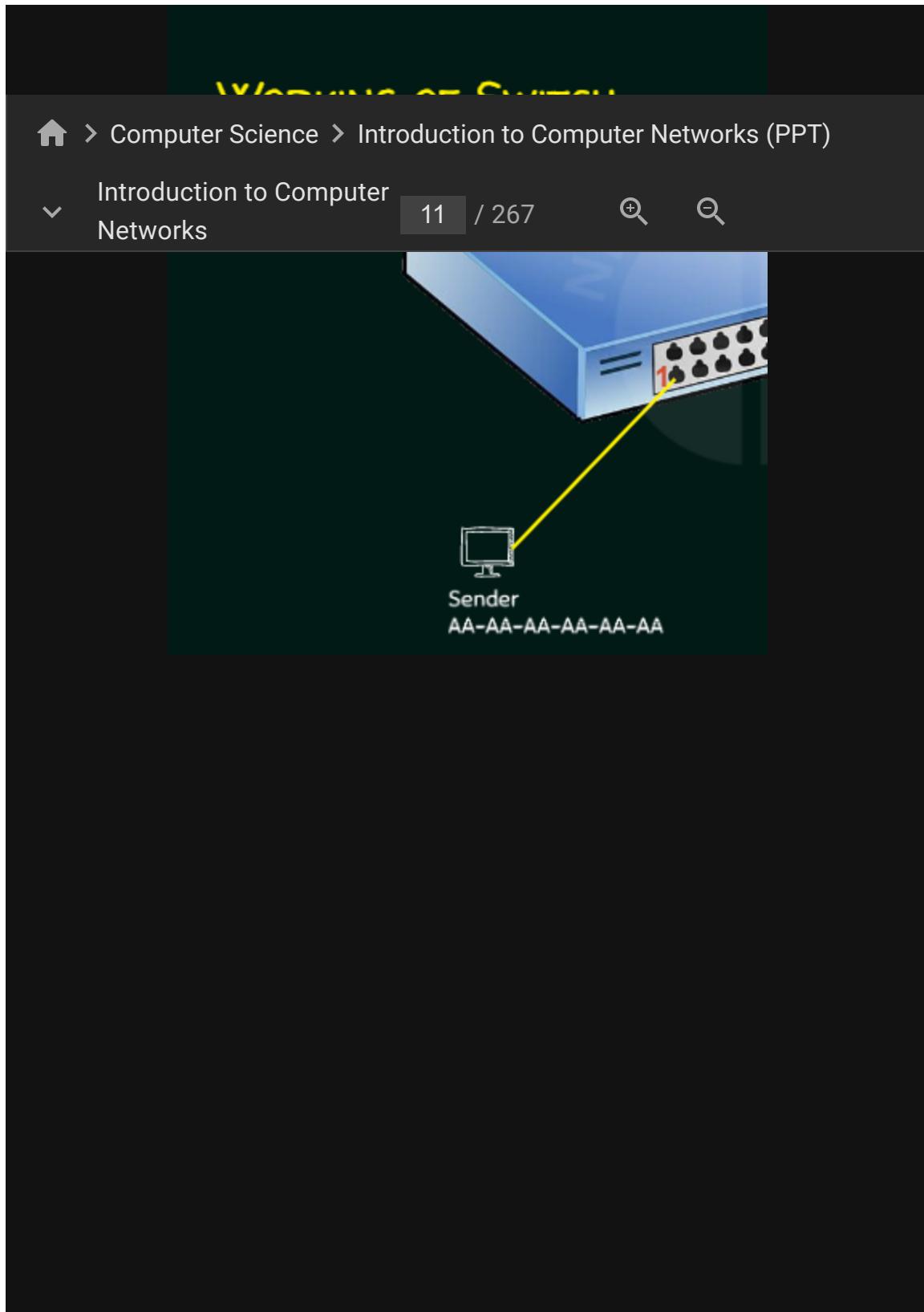
The screenshot shows a presentation slide with the following details:

- Title:** Switches
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A search bar with a magnifying glass icon.
- Text:** "computer network to establish a local area network."
- List:**
 - ★ Unlike hub, switch has memory.
 - ★ Stores MAC ADDRESS TABLE.
 - ★ Layer 2 Device for setting up LAN.









HUB VERSUS SWITCH

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

works at physical layer.	V
Has no memory.	H
Not an intelligent device.	Ir
Floods the network due to broadcasting.	C
Security risks are high.	S
Less efficient.	M
Half Duplex.	F

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A magnifying glass icon.
- Help:** A question mark icon.

The slide content is a list of learning objectives:

- ★ Know the basics of routers.
- ★ Understand how to connect two different networks theoretically.
- ★ Understand the difference between

The screenshot shows a presentation slide with the following details:

- Title Bar:** The title bar is dark green with the word "POWERPOINT" in yellow.
- Breadcrumbs:** The breadcrumb navigation shows: Home > Computer Science > Introduction to Computer Networks (PPT).
- Section Title:** The main section title is "Introduction to Computer Networks".
- Page Number:** The page number is 11 / 267.
- Search Function:** There are two search icons: one for magnifying glass and one for a document.
- Text Content:** The text on the slide reads: "computer networks."
★ A router is connected to at least two WANs or a LAN and its ISP's network
★ It is a layer 3 (Network layer) device
★ Stores routing table.

WAN AND LAN

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

LAN1
10.0.0.0
255.0.0.0

10.0.0.8
AA-AA-AA-AA-AA-AA

The diagram illustrates a local area network (LAN1) enclosed in a yellow cloud. Inside the cloud, there is a computer monitor icon and the IP address 10.0.0.8 followed by its MAC address AA-AA-AA-AA-AA-AA. An arrow points from this cloud to a blue sphere representing the Internet, which contains the IP address 10.0.0.10.

WAN AND LAN

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

LAN1
10.0.0.0
255.0.0.0

10.0.0.8
AA-AA-AA-AA-AA-AA

10.0.0.10

The diagram illustrates a local area network (LAN1) represented by a yellow cloud. Inside the cloud, the network identifier 10.0.0.0 and the subnet mask 255.0.0.0 are displayed. Below the cloud is a computer icon, which represents a host within the LAN. This host has an IP address of 10.0.0.8 and a MAC address of AA-AA-AA-AA-AA-AA. An arrow connects the cloud to the computer icon, indicating they are part of the same network. Another arrow points from the computer icon to the IP address 10.0.0.10, suggesting it is a destination or a gateway.

WAN AND LAN

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

LAN1
10.0.0.0
255.0.0.0

10.0.0.8
AA-AA-AA-AA-AA-AA

10.0.0.10

The diagram illustrates a local area network (LAN1) represented by a yellow cloud. Inside the cloud, the network identifier 10.0.0.0 and the subnet mask 255.0.0.0 are displayed. Below the cloud is a computer icon, which represents a host within the LAN. This host has an IP address of 10.0.0.8 and a MAC address of AA-AA-AA-AA-AA-AA. An arrow connects the cloud to the computer icon, indicating they are part of the same network. Another arrow points from the computer icon to the IP address 10.0.0.10, suggesting it is a destination or a gateway.

WAN AND LAN

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

LAN1
10.0.0.0
255.0.0.0

10.0.0.8
AA-AA-AA-AA-AA-AA

10.0.0.10

The diagram illustrates a local area network (LAN1) represented by a yellow cloud. Inside the cloud, the network identifier 10.0.0.0 and the subnet mask 255.0.0.0 are displayed. Below the cloud is a computer icon, representing a host within the LAN. This host has an IP address of 10.0.0.8 and a MAC address of AA-AA-AA-AA-AA-AA. An arrow connects the cloud to the computer icon. Another arrow points from the computer icon to an IP address 10.0.0.10, which is associated with a blue cloud, indicating that the host can communicate with other networks or hosts outside its local subnet.

SWITCH VERSUS ROUTER

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks 11 / 267

computer network.	O
Operates at Data Link Layer. (Layer 2 Device)	H
Has memory and stores MAC Address Table.	D
Decisions are taken based on MAC address.	F
Half/Full Duplex.	L
LAN.	

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'Router - Inevitable device in the Internet' is displayed in large, bold, yellow text. Underneath the title, there is a list of three bullet points, each preceded by a yellow star:

- ★ It is a layer 3 (Network layer) device.
- ★ Stores routing table.
- ★ Router – Inevitable device in the int

The slide number '11 / 267' is visible in the top right corner, along with two search icons.

WAN AND LAN

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

LAN1
10.0.0.0
255.0.0.0

10.0.0.8
AA-AA-AA-AA-AA-AA

The diagram illustrates a local area network (LAN) segment. A yellow cloud shape represents the network, labeled "LAN1" at the top. Inside the cloud, the IP address "10.0.0.0" and the subnet mask "255.0.0.0" are listed. Below the cloud, a small icon of a computer monitor on a stand is connected by a line to the bottom left corner of the cloud. Below this connection point, the IP address "10.0.0.8" and the MAC address "AA-AA-AA-AA-AA-AA" are displayed.

The screenshot shows a presentation slide with the following details:

- Title Bar:** The title bar is dark green with the text "Computer Networks" in white.
- Breadcrumbs:** The breadcrumb navigation shows the path: Home > Computer Science > Introduction to Computer Networks (PPT).
- Section Title:** The main section title is "Introduction to Computer Networks".
- Page Number:** The page number is 11, and there are 267 pages in total.
- Search Function:** There are two search icons: a magnifying glass and a question mark.
- Content:** The slide contains two bullet points:
 - ★ Understand the basics of repeater.
 - ★ Know the working of repeater using

The screenshot shows a presentation slide with a dark background. At the top, there's a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'Repeaters' is displayed in yellow. The main content area has a green header with the title. The slide contains the following text:
travel a long distance.
★ Repeater regenerates the signal over
★ It operates at the physical layer.
★ They do not amplify the signal

The screenshot shows a presentation slide with the following details:

- Title:** WAN vs LAN
- Breadcrumbs:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Section:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** A search bar with a magnifying glass icon.

The main content of the slide is a network diagram. It features a yellow cloud-like shape containing the text "LAN1" and its IP range "10.0.0.0 - 255.0.0.0". A yellow line extends from the top right of the cloud towards the top right corner of the slide area.

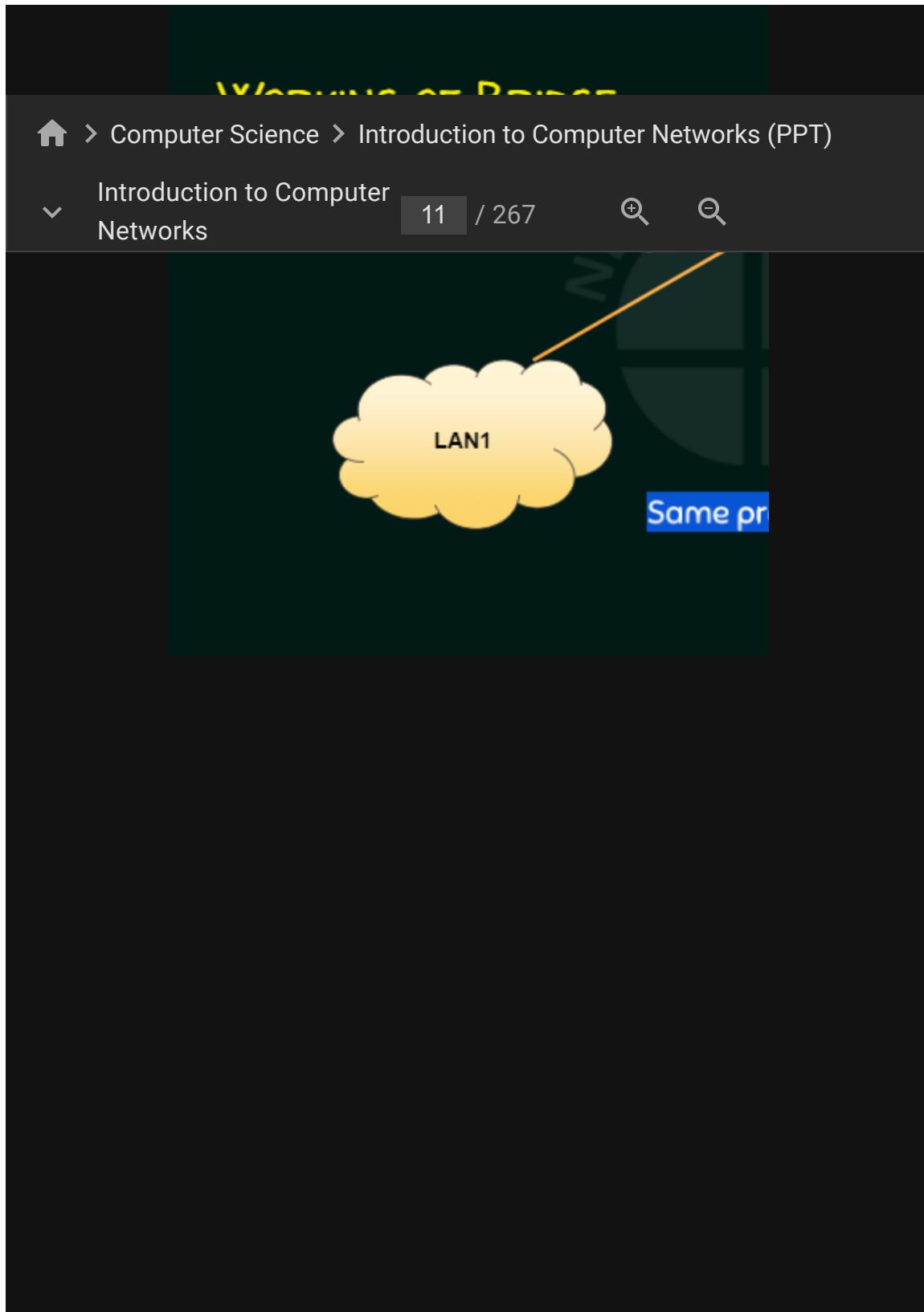
The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are present.
- Content:** A list of learning objectives:
 - ★ Understand the basics of bridge.
 - ★ Know the types of bridge.
 - ★ Understand the working of bridge.
 - ★ Understand the difference between

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below this, a section title 'Introduction to Computer Networks' is displayed with a dropdown arrow. To the right of the title are page navigation controls showing '11 / 267' and search icons. The main content area contains a bulleted list of three items, each starting with a star symbol.

- ★ It is a layer 2 device.
- ★ It is also used for interconnecting two or more local networks.
- ★ It is also a two

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'Types of Bridges' is displayed in yellow. The main content area contains the following text:
unaware of the bridge's existence
★ Reconfiguration of the stations



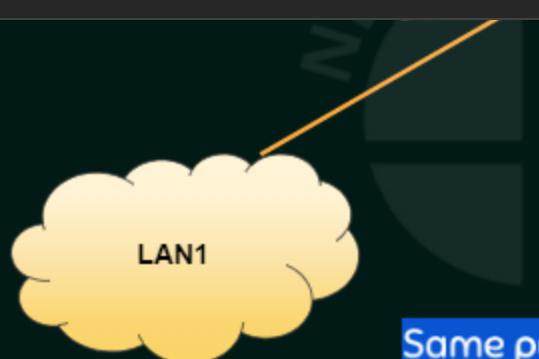
Powered by Neso Academy

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

11 / 267

Same pr



The slide displays a yellow cloud-shaped network diagram labeled "LAN1" in the center. A single orange line extends from the top right of the cloud towards the right edge of the slide. To the right of the cloud, the text "Same pr" is visible in blue. The slide has a dark background with a green header bar.

Powered by Neso Academy

Home > Computer Science > Introduction to Computer Networks (PPT)

Introduction to Computer Networks

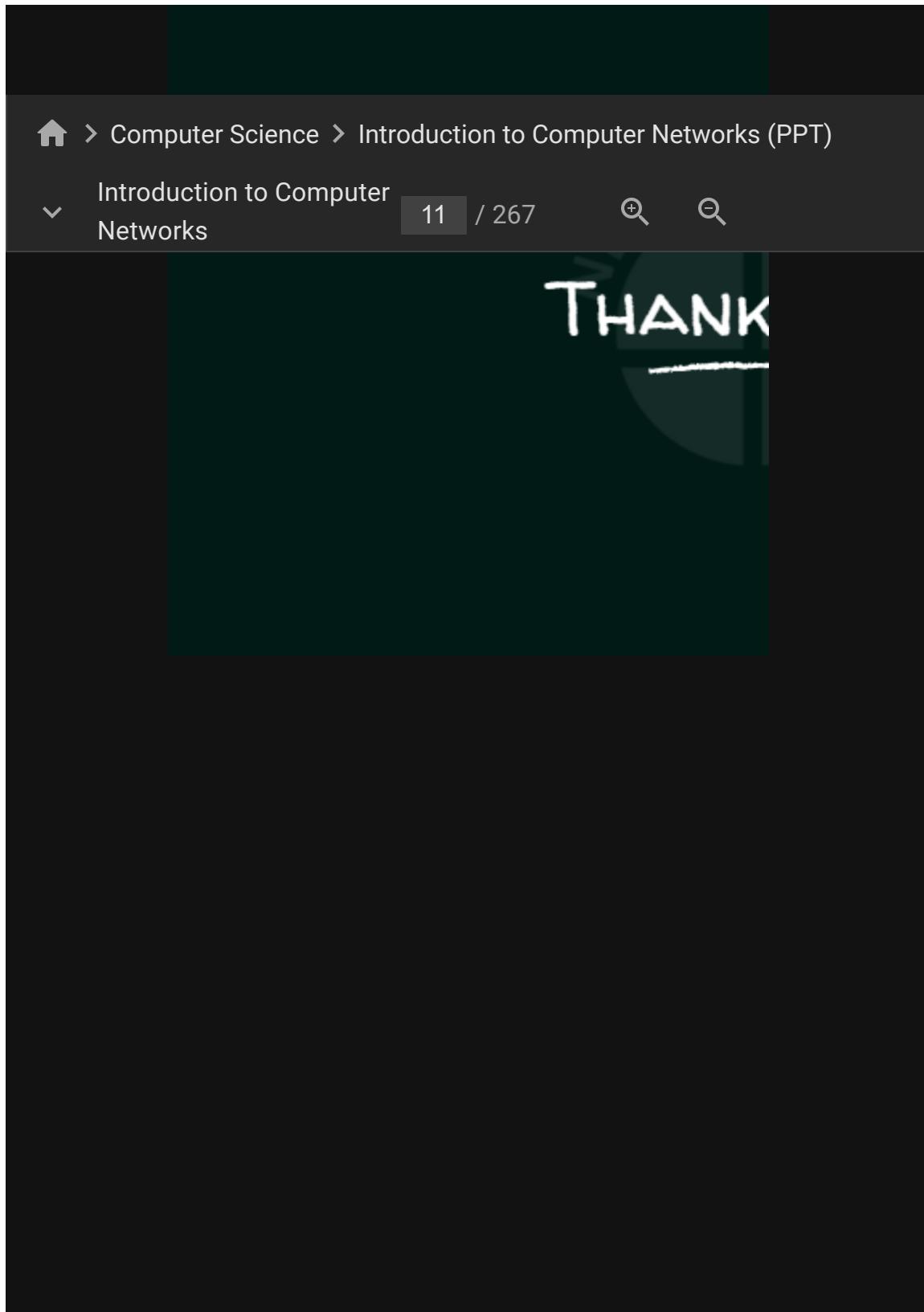
11 / 267

Different

A yellow cloud-shaped network diagram labeled LAN1. A yellow line extends from the top right of the cloud towards the right edge of the slide. To the right of the cloud, the word "Different" is written in blue text.

The screenshot shows a presentation slide with the following details:

- Navigation:** Home > Computer Science > Introduction to Computer Networks (PPT)
- Title:** Introduction to Computer Networks
- Page Number:** 11 / 267
- Search:** Two search icons are present.
- Content:** A list of learning objectives:
 - ★ Understand the basics of bridge.
 - ★ Know the types of bridge.
 - ★ Understand the working of bridge.
 - ★ Understand the difference between



The screenshot shows a presentation slide from Neso Academy. The title bar at the top has a dark green background with the text 'Neso Academy' in white. Below the title bar, the navigation path is shown as a series of arrows: Home > Computer Science > Introduction to Computer Networks (PPT). The main content area has a dark background with a large, semi-transparent watermark-like graphic of a person's head and shoulders. Overlaid on this graphic is a white text box containing the instruction: '★ LIST VARIOUS networking devices.' The page number '11 / 267' is displayed in the top right corner of the content area.

The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below this is a search bar with a magnifying glass icon and a dropdown menu showing 'Introduction to Computer Networks'. The main content area has a title 'List of various Network Devices' and a list of network devices, each preceded by a star icon.

List of various Network Devices

- ★ Switch
- ★ Bridge
- ★ Router
- ★ Multi-layer switch (Layer 3 Switch)
- ★ Brouter
- ★ Modem
- ★ Firewall (Security Device)

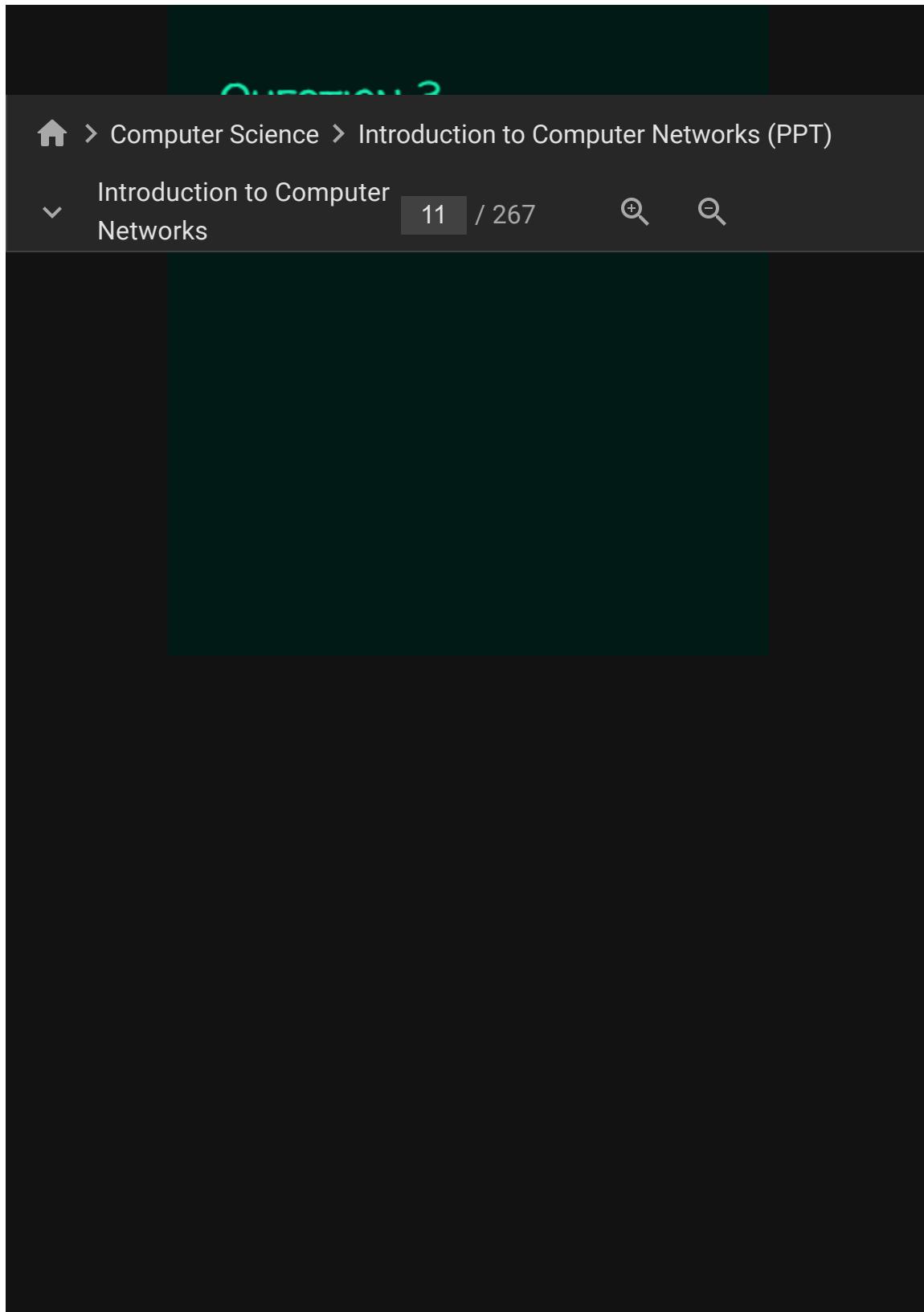
The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below the navigation bar, the title 'QUESTION' is displayed in a large, bold, white font. Underneath the title, there is a list of four options, each preceded by a small white letter (a, b, c, d). The options are: a. Bridge, b. Hub, c. NIC card, and d. (empty). In the top right corner of the slide area, there is a progress bar showing '11 / 267'. To the right of the progress bar are two search icons: a magnifying glass and a question mark.

- a. Bridge
- b. Hub
- c. NIC card
- d.

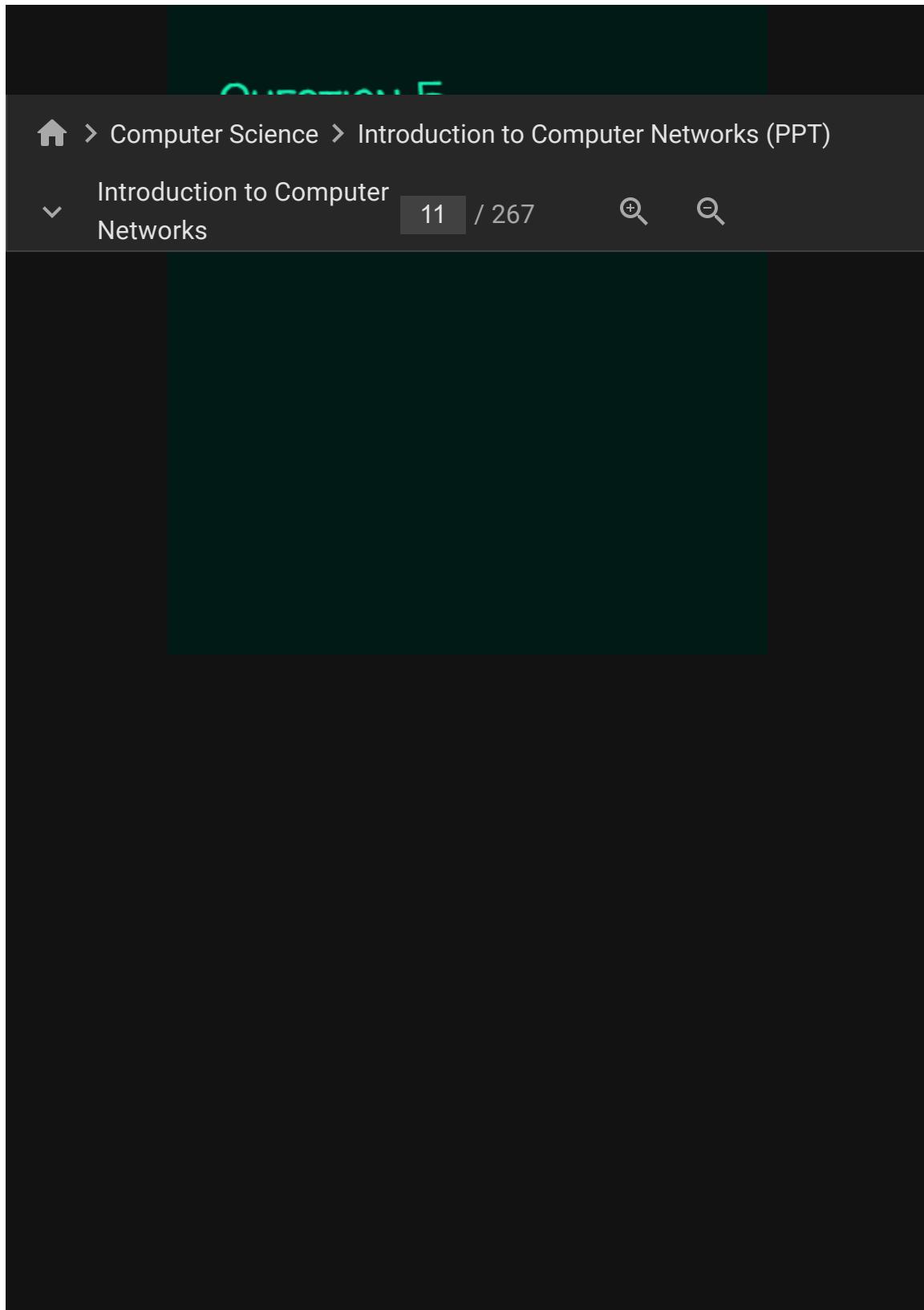
The screenshot shows a presentation slide with a dark background. At the top, there is a navigation bar with a house icon, a 'Computer Science' link, and a 'Introduction to Computer Networks (PPT)' link. Below this, the main title 'Introduction to Computer Networks' is displayed with a dropdown arrow. The slide content starts with the text 'a. Bridge' followed by 'b.' on a new line.

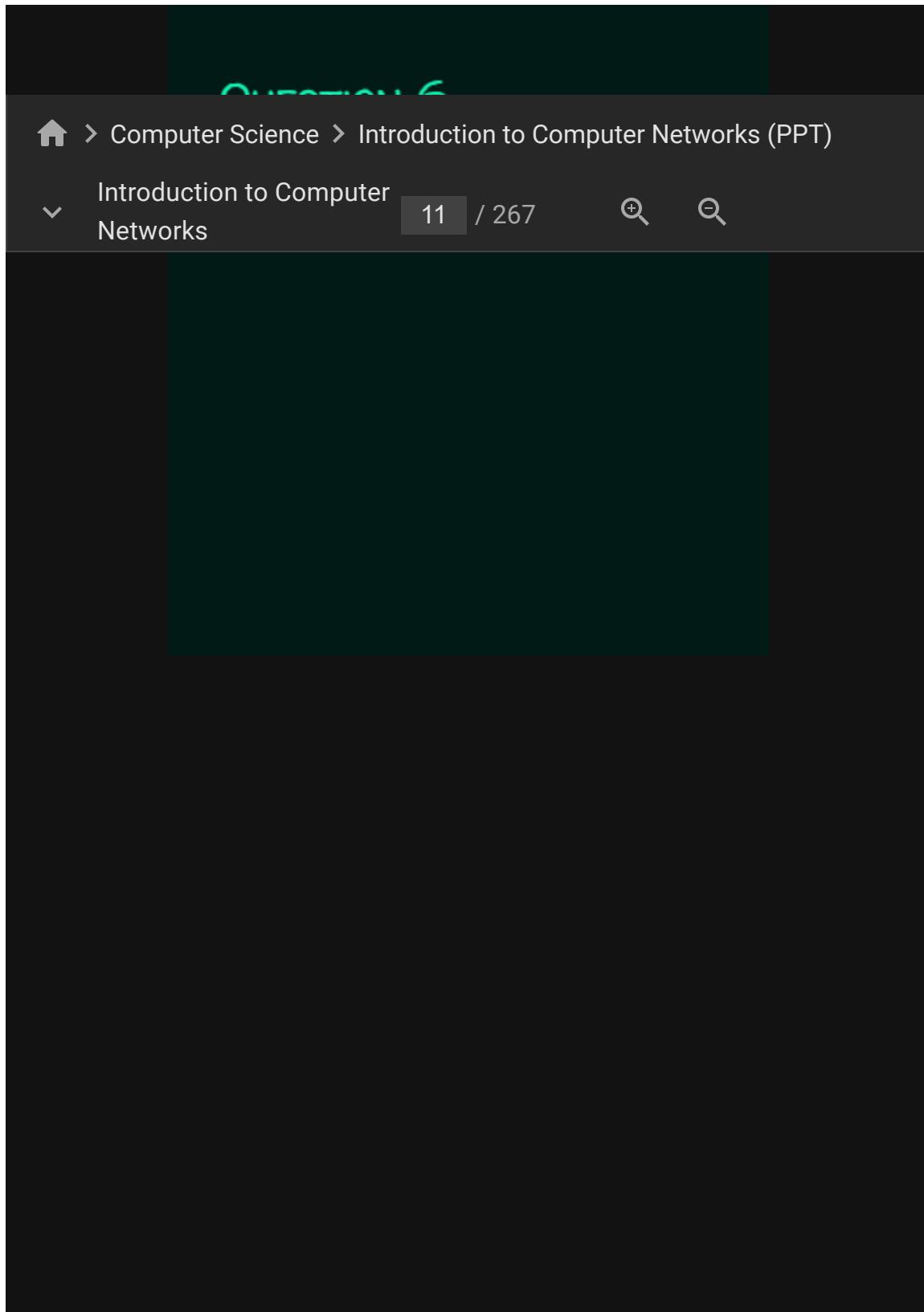
a. Bridge

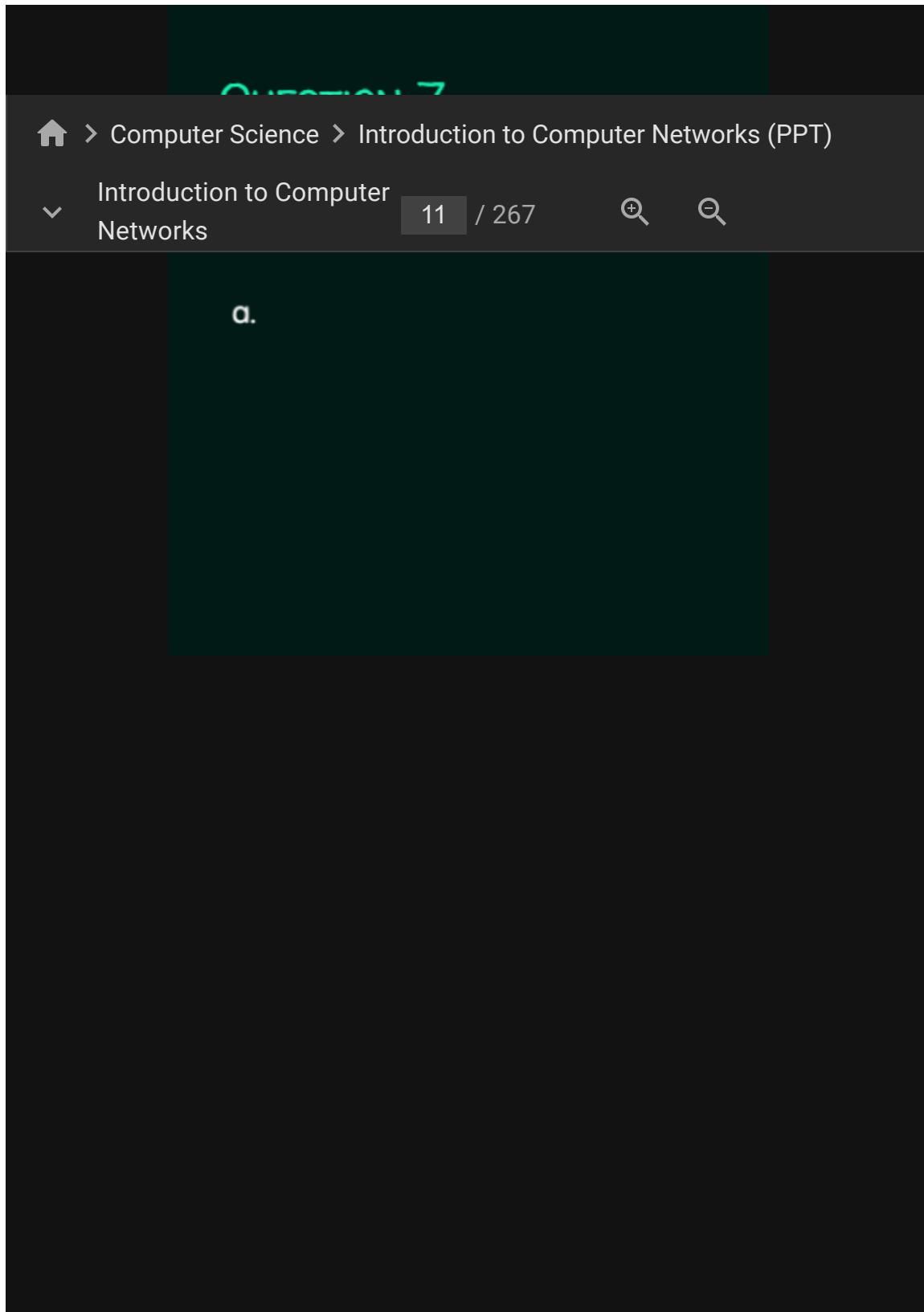
b.



A screenshot of a presentation slide. The title bar at the top has a dark green background with the word 'Answer' in white. Below the title bar, the navigation menu shows 'Computer Science > Introduction to Computer Networks (PPT)'. Underneath the menu, there is a section titled 'Introduction to Computer Networks' with a dropdown arrow icon. To the right of this section are two search icons: a magnifying glass and a question mark. A progress bar indicates the slide is number 11 out of 267. The main content area of the slide is dark and contains the word 'Answer' in a light color.

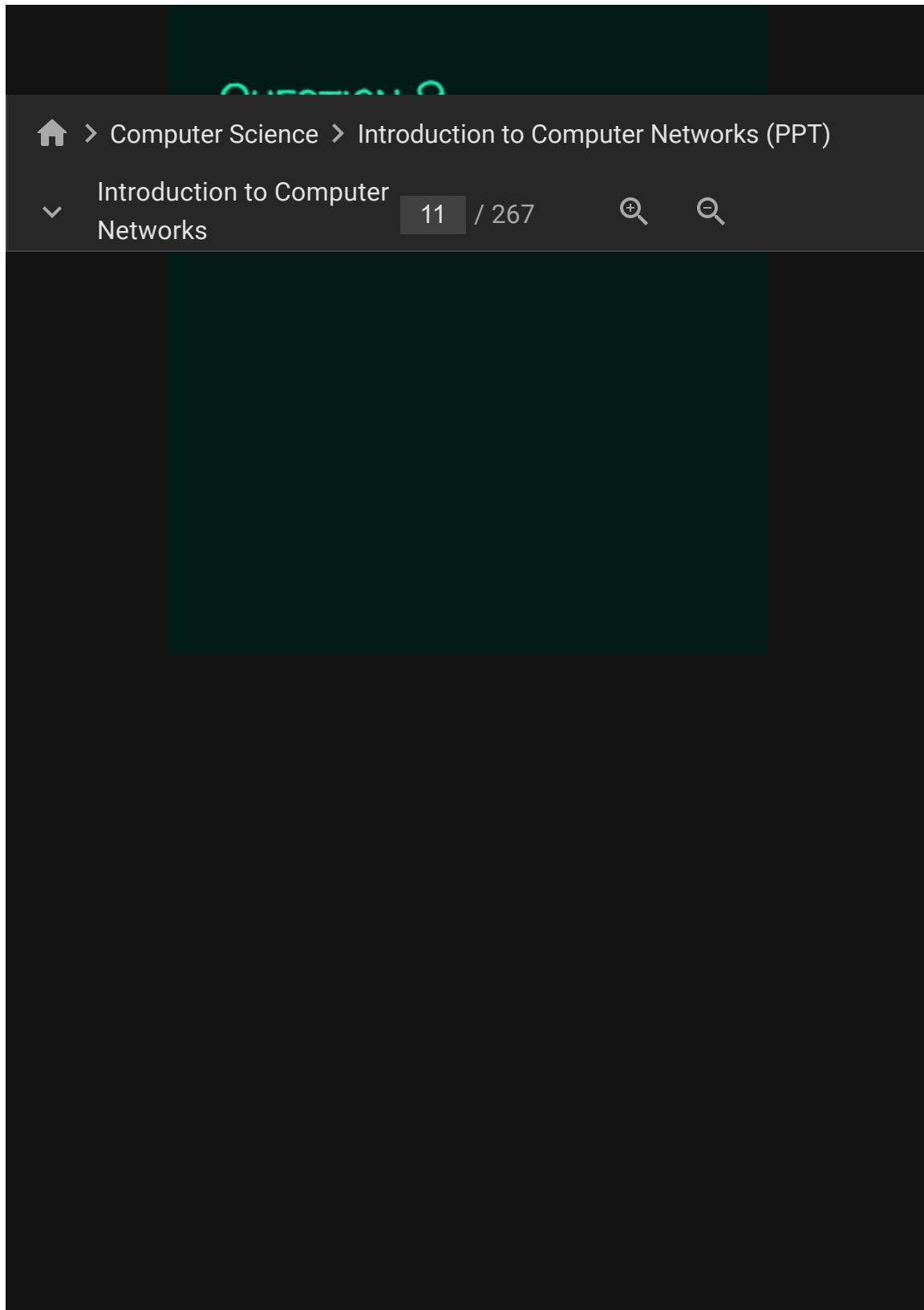




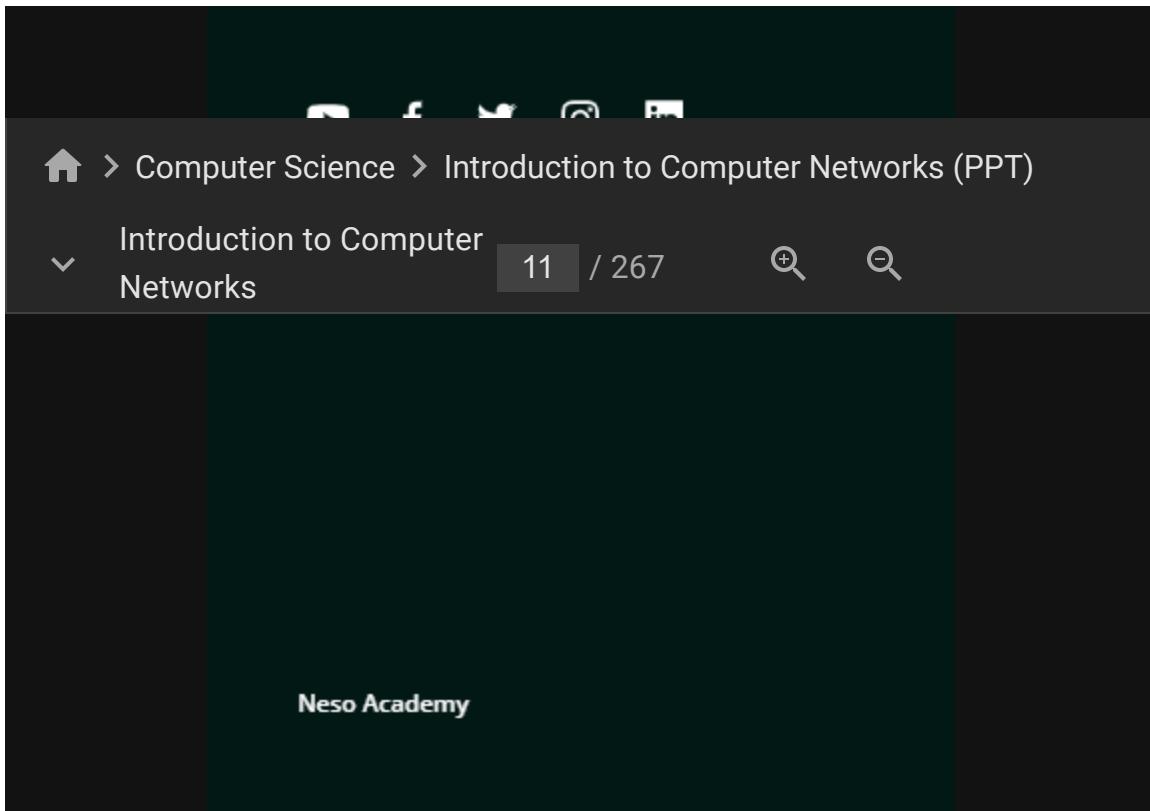


The screenshot shows a presentation slide with the following details:

- Title Bar:** The title bar is dark green with the text "Introduction to Computer Networks" in white.
- Breadcrumbs:** The breadcrumb navigation shows the path: Home > Computer Science > Introduction to Computer Networks (PPT).
- Section Title:** The main section title is "Introduction to Computer Networks".
- Page Number:** The page number is 11 / 267.
- Search Function:** There are two search icons: a magnifying glass and a question mark.
- Content:** The slide content includes two bullet points:
 - a. Hub
 - b.



The image shows a presentation slide with a dark background. At the top, a green bar contains the text "QUESTION 10" in white. Below this, a navigation bar includes a home icon, a breadcrumb trail ("Computer Science > Introduction to Computer Networks (PPT)"), a dropdown menu ("Introduction to Computer Networks"), a page number ("11 / 267"), and search icons.



The screenshot shows a presentation slide titled "Introduction to Computer Networks" with a subtitle "Computer Science". The slide number is 11 of 267. The Neso Academy logo is visible at the bottom left. Below the slide, there is a footer with the Neso Academy logo, the tagline "#redefiningeducation", a statement about offering world-class learning resources, and a "Made in India" badge with the Indian flag.

Neso Academy

#redefiningeducation

Neso Academy offers world-class learning resources on engineering courses, school syllabus, competitive exams, and many more.

Made in India 

[Links](#) [Courses](#)

[About us](#) [Computer Science](#)

Contact us Electrical
Electronics and Communication

Home > Computer Science > Introduction to Computer Networks (PPT)

▼ Introduction to Computer Networks 11 / 267

App

Social

© 2022 Neso Academy

[Terms of use](#) [Privacy policy](#)