

# EE102: Software Engineering I

## Section 3 – Computer Networks



## What is a computer network?

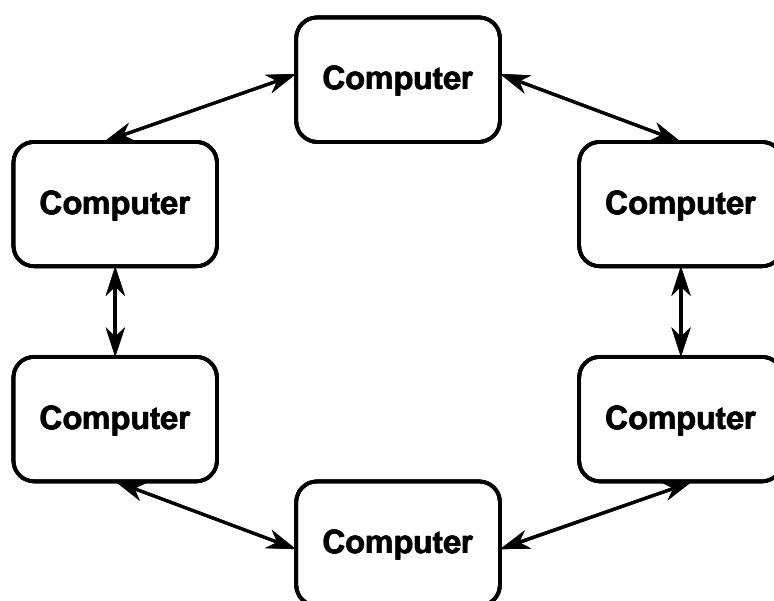
- Two or more inter-connected computers

## Why do we need networked computer?

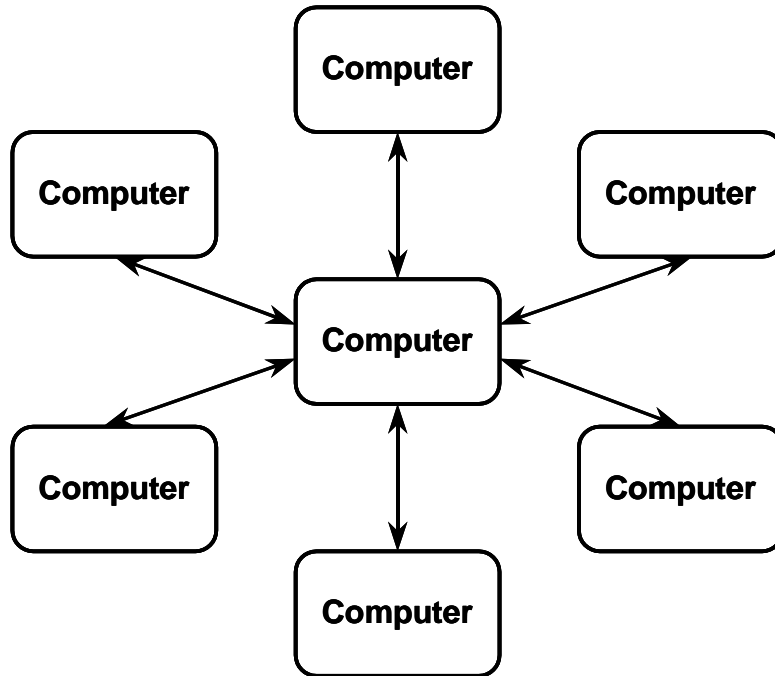
- Permit sharing of programs
- Enable data exchange
- Allow inter-communication between remote located people
- Allow processing to be distributed

## Network topologies:

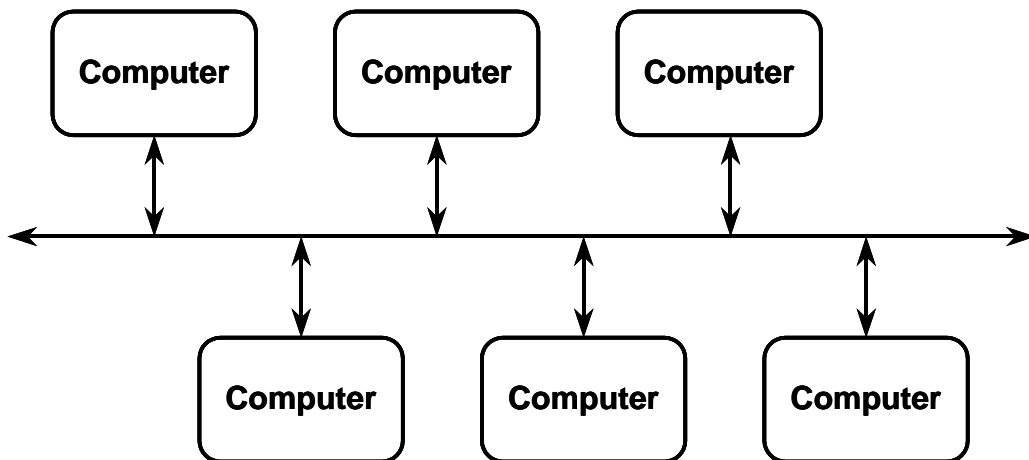
- Ring



- **Star**



- **Bus**



## Types of networks:

- **Local Area Network (LAN)**

- Connects computers in the same area (e.g. lab, building)
- Enabled local information exchange

- **Wide Area Network (WAN)**

- Connects computers from different locations (e.g. DCU network)
- Made more efficient work within organizations and companies
- Did not allow communication with other companies and organizations

- **Internet**

- Interconnects different networks, with computers having different OSs
- Started as an experimental project in 1970
- Funded by US Defense Advanced Research Projects Agency (DARPA)
- It still works inter-connecting millions of computers
- It is growing exponentially

## Types of services:

- **E-mail**

- Allow for composing electronic letters on computers
- Delivers the letters to destination computers
- No need for stamps, postboxes and postmen
- Very fast delivery (seconds!)
- Delivery regardless of location (world wide!)
- Allows for sending the same content to many recipients at once

- **Electronic publishing**

- Allows publishing information on one's computer to other users connected to Internet
- Very fast information exchange
- Electronic search and selection facilities
- Access to information regardless of location
- Improves efficiency (e.g. academic research)