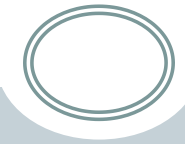
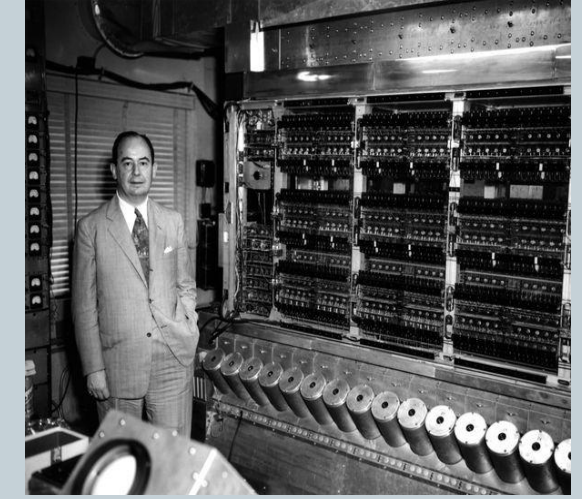
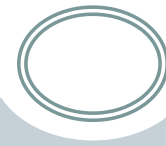


# Generations of Computers



G-9-ICT LESSON 3

# Introduction



# Introduction



- The evolution of computers is divided into 5 main generations.
- The computers of each of these generations have different features.
- Every generation of computers is characterized by the major technological development that changed the way computer operates.
- Each new generation resulted in the following changes:
  - Increase in speed, storage, capacity and reliability ↑
  - Decrease in size and cost ↓

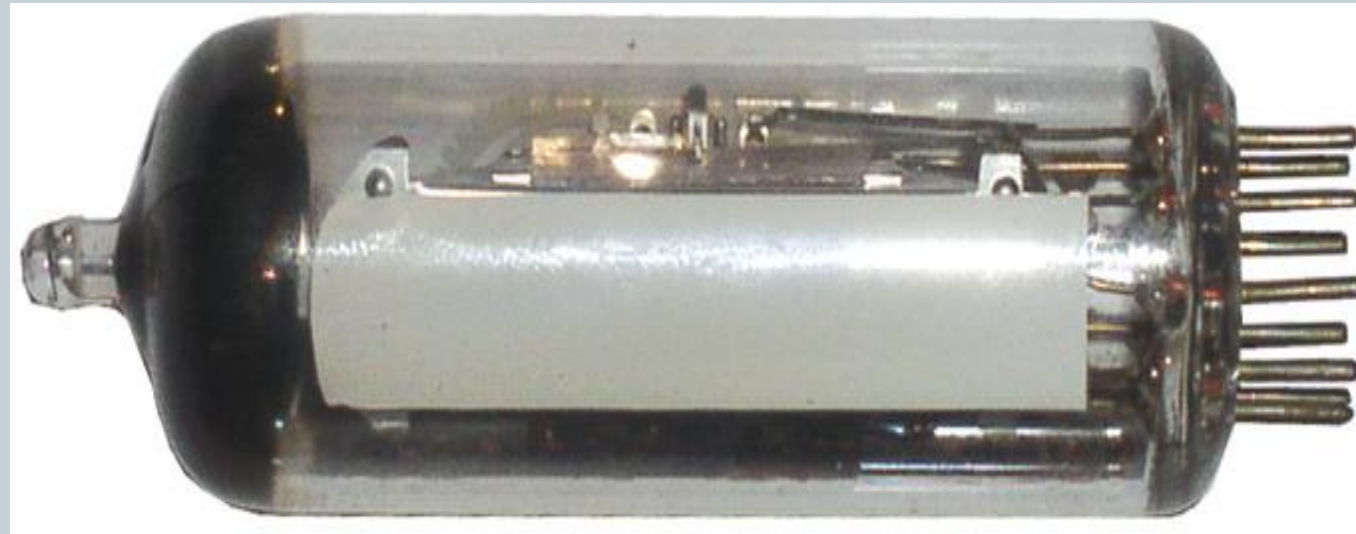
# First Generation Computers (1940–1956)



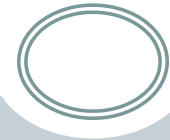
- First business computer made in USA was called Universal Automatic Computer (**UNIVAC**).
- It used vacuum tube circuits for processing.
- The vacuum tube circuits contained a filament that was heated to emit electrons.
- The main features of the first generation computers were as follows:
  - They used vacuum tubes.
  - They had a very big size.
  - They consumed huge electricity.
  - They were prone to failures.
  - They generated a lot of heat.
  - They only supported machine language.

# First Generation Computers (1940–1956)...

- Vacuum Tube



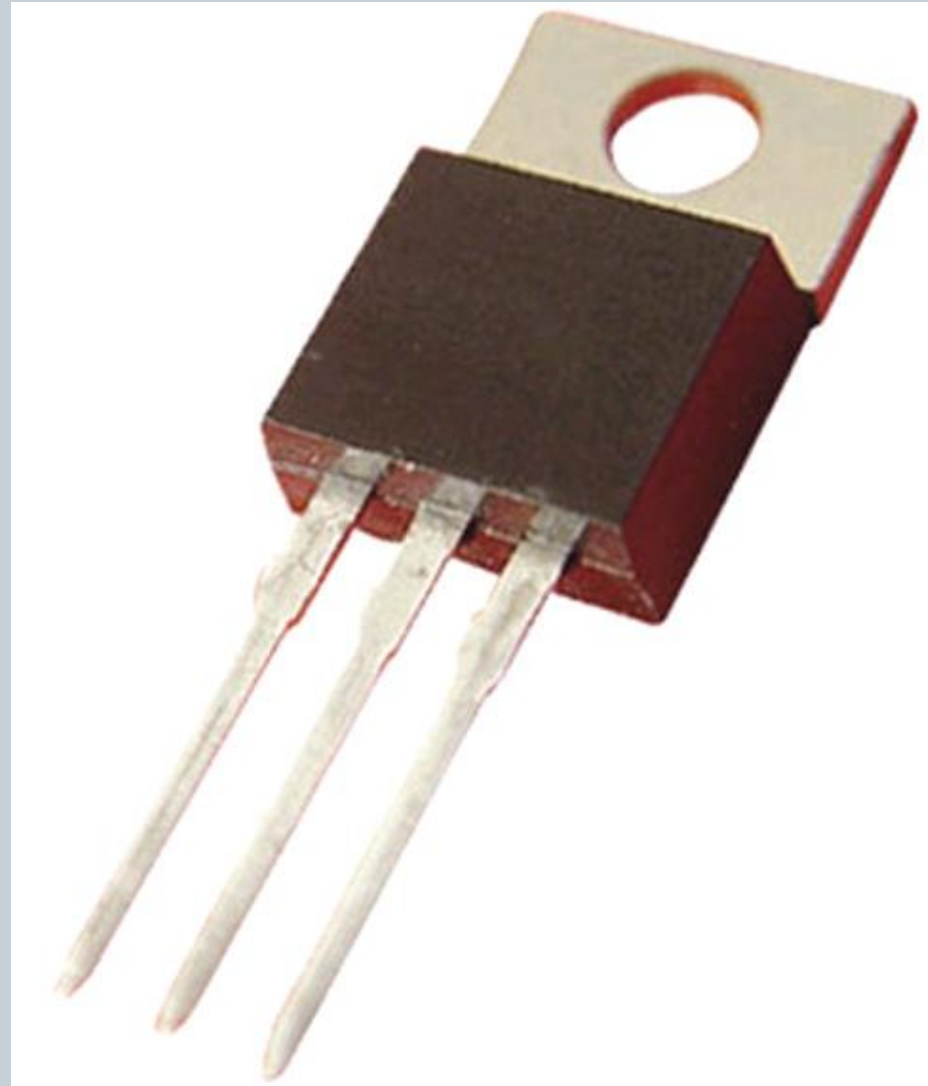
# Second Generation Computers (1956–1964)



- Bell Labs of U.S.A. invented transistors that were used instead of vacuum tubes.
- Transistors are electronic circuits that are small in size; they do not emit electrons and do not require any heating.
- The main features of the second generation computers were as follows:
  - They used transistors instead of vacuum tubes.
  - They were smaller in size as compared to the first generation computers.
  - They generated lesser heat.
  - They were more reliable and faster than the first generation computers.
  - They used core memories, magnetic tapes and disks.
  - They used lesser electricity.
  - They could be programmed by using machine as well as assembly language.

# Second Generation Computers (1956–1964)

- Transistor





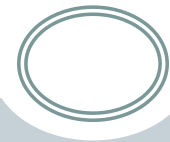
# Third Generation Computers (1964–1971)



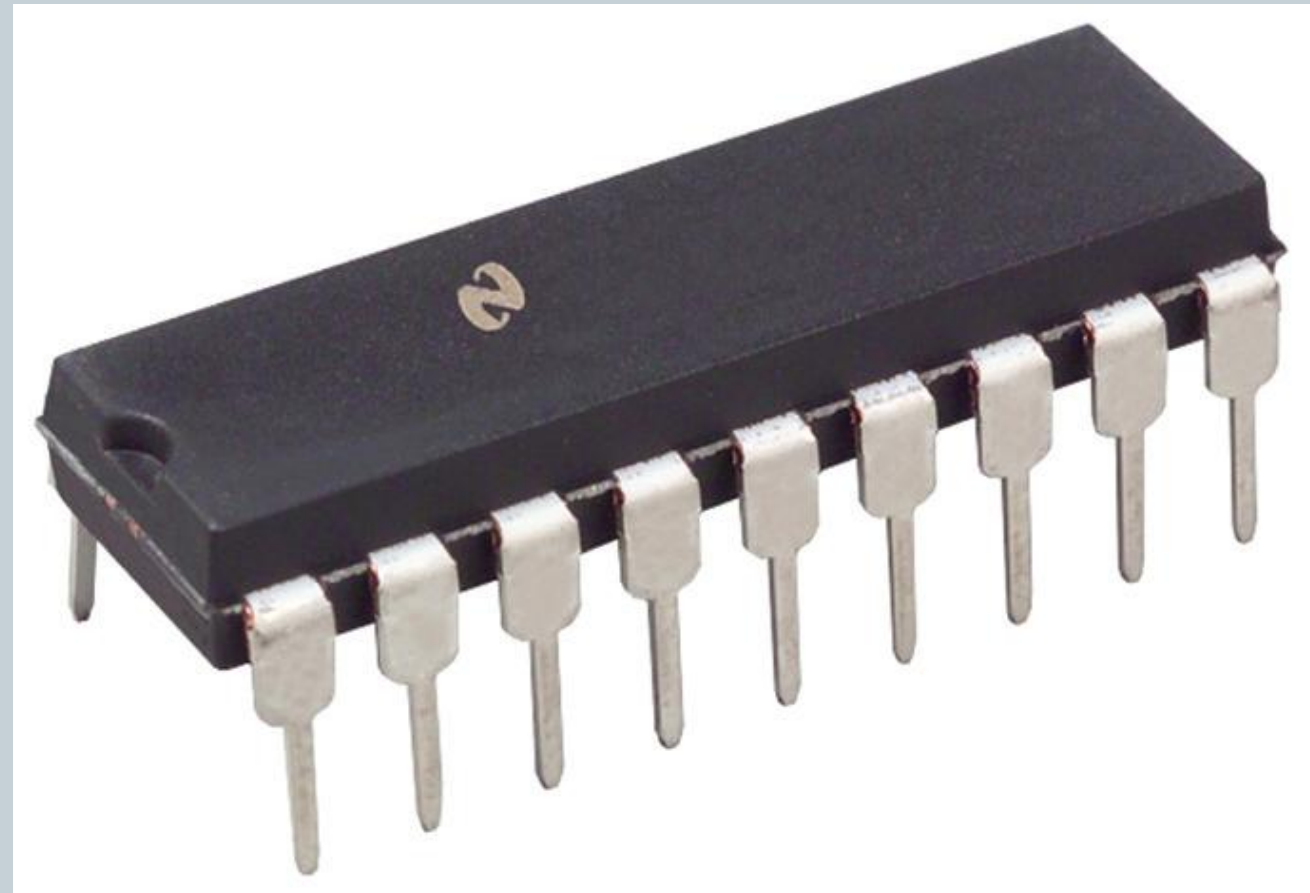
- The Third Generation Computers used Large Scale Integrated (LSI) circuits for processing.
- LSI circuits integrate several circuit components into a single chip.
- The main features of the third generation computers were as follows:
  - They used integrated circuits.
  - They had a small size as compared to the second generation computers.
  - They consumed less electricity.
  - They were faster and reliable than the second generation computers.
  - They supported high level language.



# Third Generation Computers (1964–1971)



- Large Scale Integrated Circuit(LSI)



# Fourth Generation Computers (1971–Present)

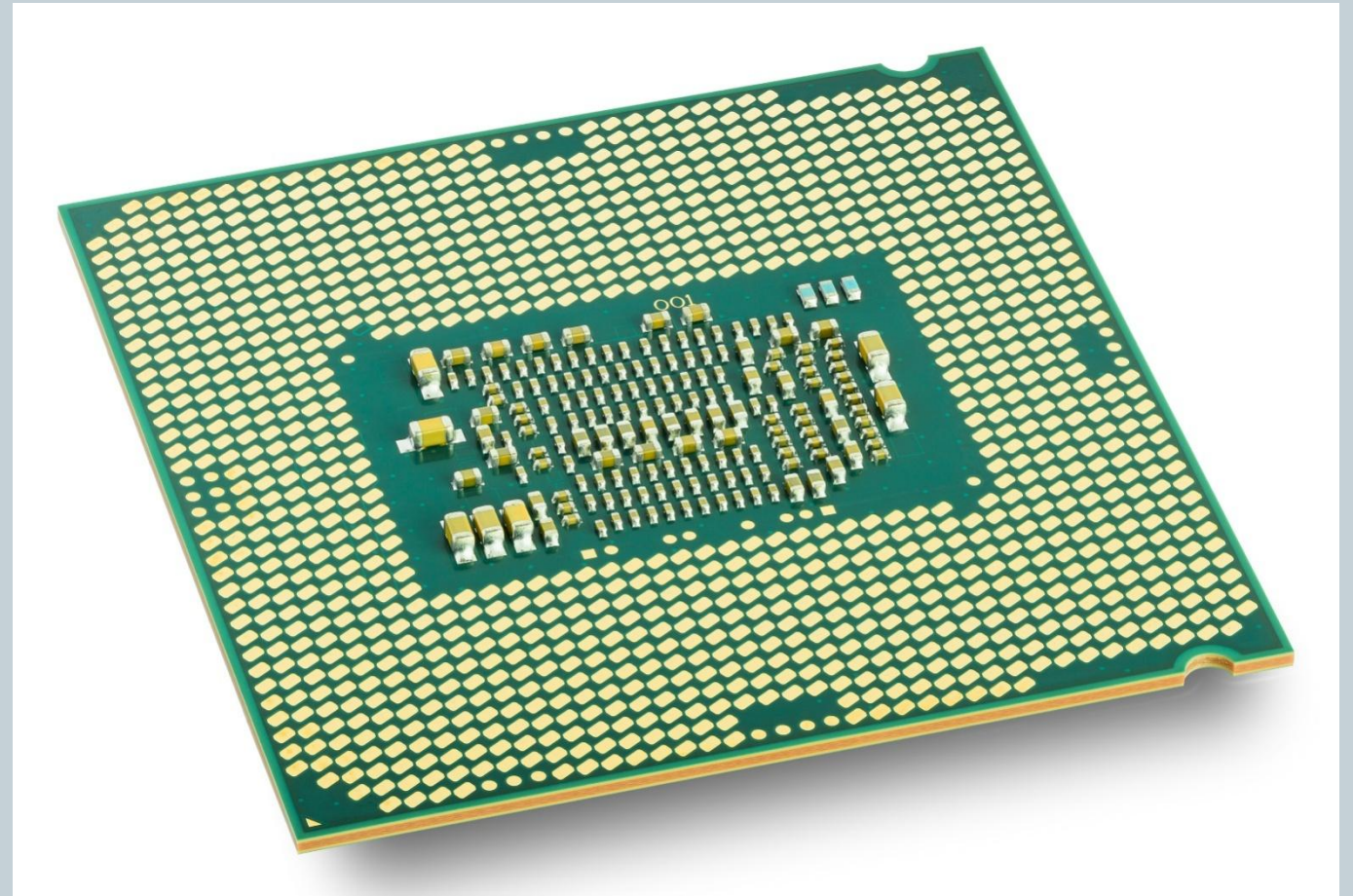


- Fourth Generation Computers use Very Large Scale Integrated (VLSI) chips.
- Most of the computers we use today are fourth generation computers
- The main features of the fourth generation computers are:
  - They contain high-speed microprocessors.
  - They contain huge storage volumes in the form of magnetic and optical storage.
  - They contain main memories up to GBs (Gigabytes).
  - They are accompanied by great developments in the fields of networks.



# Fourth Generation Computers (1971–Present)

- Very Large Scale Integrated Circuit

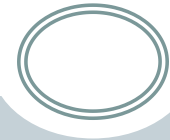


# Fifth Generation Computers (Future)



- In fifth generation, VLSI technology became ULSI (Ultra Large Scale Integration) technology.
- This results in the production of microprocessor chips having ten million electronic components.
- This generation is based on parallel processing hardware and AI (Artificial Intelligence) software.
- AI is an emerging branch in computer science, which interprets the means and method of making computers think like human beings.
- AI will have ability to think, learn and adapt to changes.

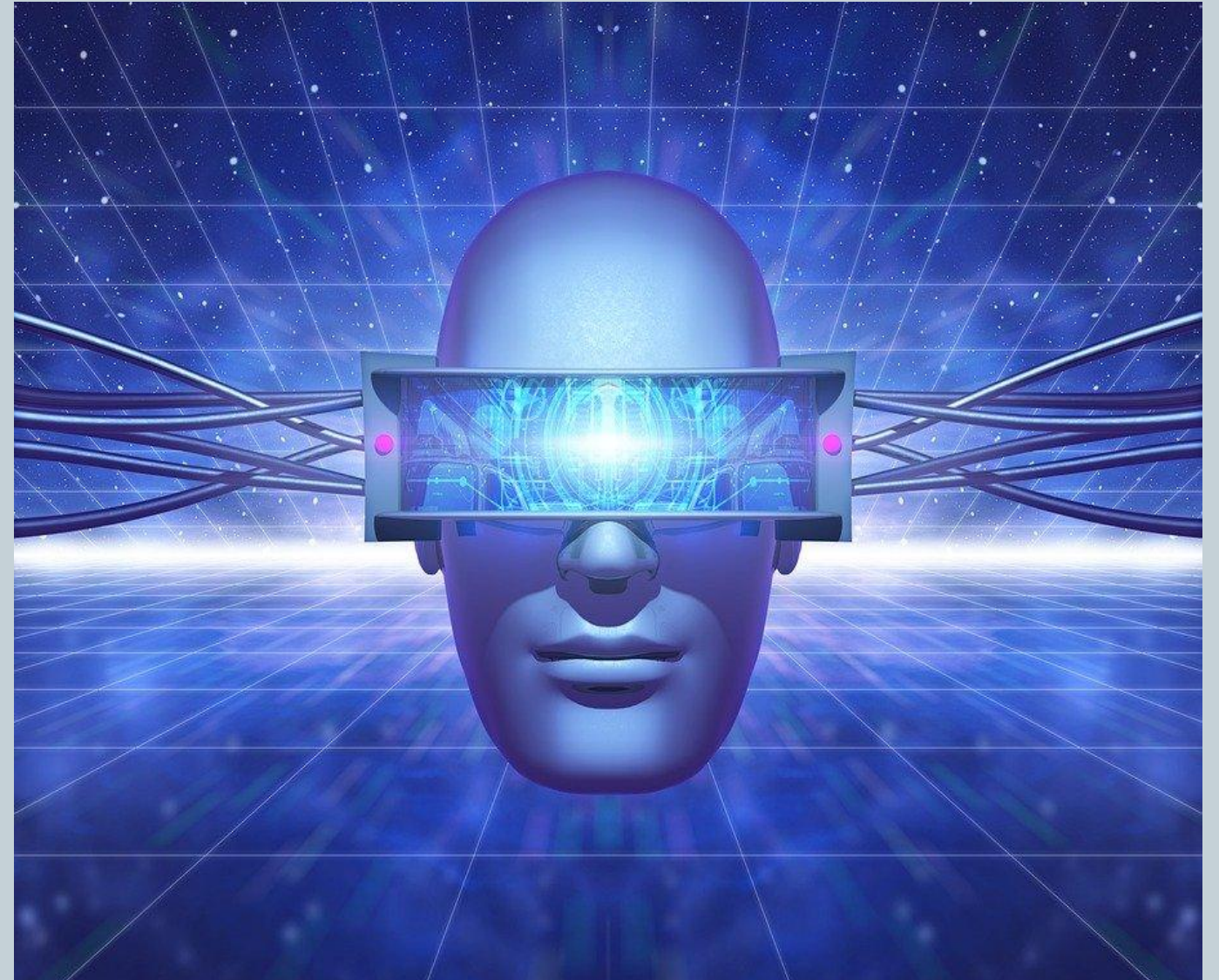
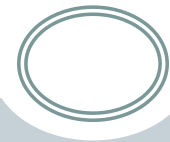
# Fifth Generation Computers (Future)...



This slide contains video  
Content which can be  
Accessed from  
[https://www.youtube.com  
/watch?v=YPoAjRxyBQQ](https://www.youtube.com/watch?v=YPoAjRxyBQQ)



# Fifth Generation Computers (Future)...



# Questions?

