INPUT OUTPUT CONFIGURATION

Subject: Computer Organization & Architecture

SAVIYA VARGHESE
Dept of BCA
2020-21

INPUT-OUTPUT CONFIGURATION

- **Input and output devices** helps the user to communicate with the computer.
- Basic computer has Keyboard as input unit and Monitor as output unit .

INPUT-OUTPUT AND INTERRUPT

- A computer can serve no useful purpose unless it communicates with the external environment.
- Instructions and data stored in memory must come from some input device.
- Computational results must be transmitted to the user through some output device.
- To demonstrate the most basic requirements for input and output communication, here we use as an illustration a terminal unit with a keyboard and printer.

I/O CONFIGURATION

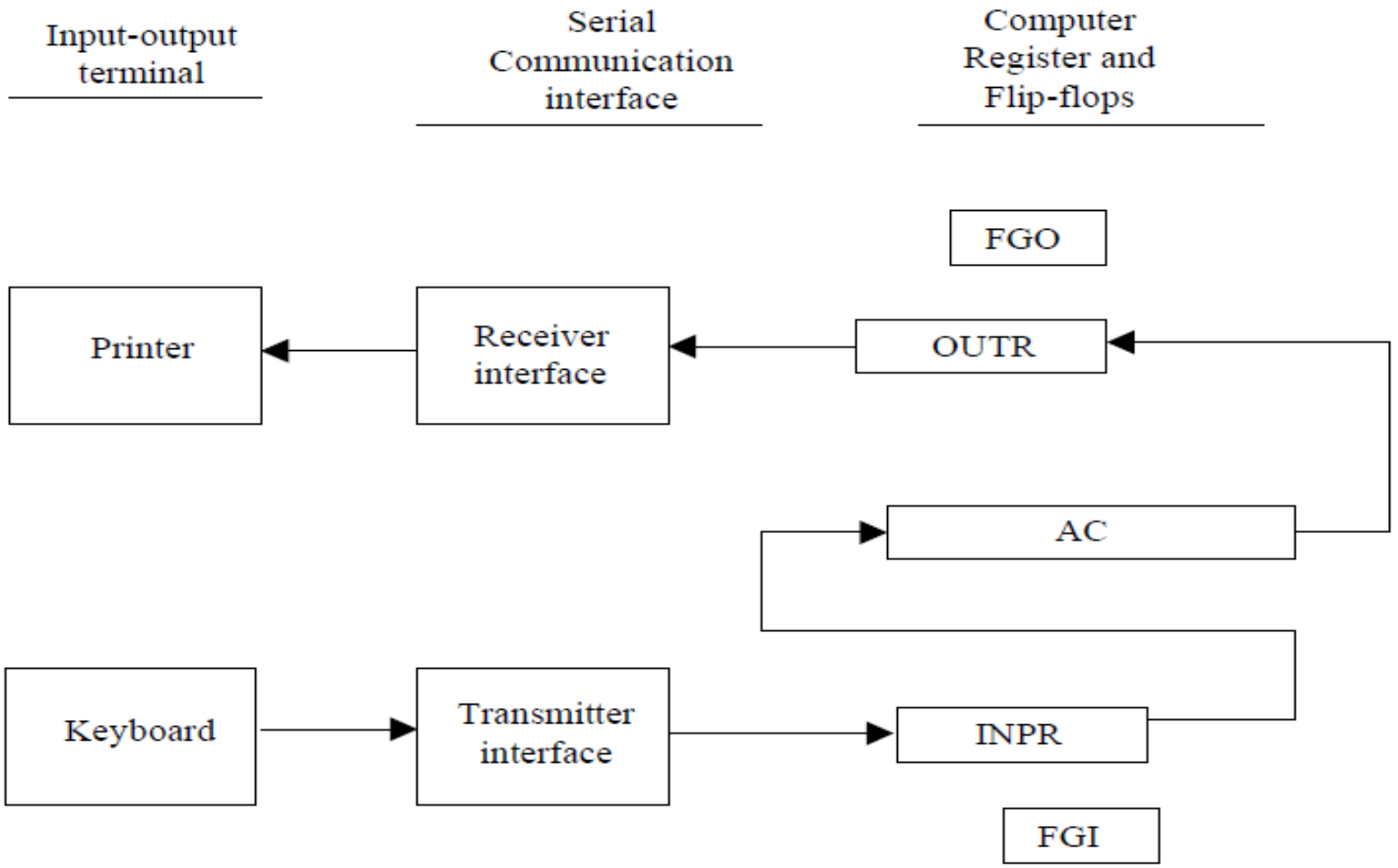

Figure 3.8 Input Output Configuration

I/O CONFIGURATION

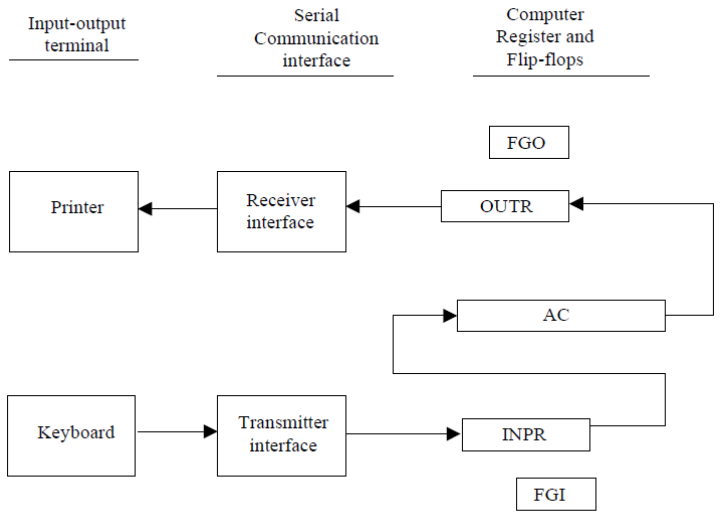

Figure 3.8 Input Output Configuration

- PRESS KEY a
- Transmitted through interface
- Check FGI
- FGI= 0,store a in INPR
- Press key b
- Check FGI
- FGI=1
- TRANSFER a into AC
- Set FGI=0 &store b in INPR

INPUT-WORKING

EXAMPLE

I/O CONFIGURATION

- Terminal sends and receives serial information.
- Each information has 8 bits of an alphanumeric code
- Serial information from the keyboard is shifted into the input register **INPR.**
- Serial information for the printer is stored in the output register **OUTR**

- INPR and OUTR consists of 8 bits
- Transmitter interface receives serial information from keyboard and transmits to INPR.
- Receiver interface receives information from OUTR and sends it to the printer

INPUT- WORKING

- The 1bit input flag **FGI** is a **control input** which is set to 1
- when a new information is available in the input device and cleared to 0 when information is accepted by the computer.
- Initially input flag **FGI is cleared to 0**.
- When a key is struck 8 bit code is shifted into INPR and flag set to 1

INPUT- WORKING

- On striking next key , flag is checked if it is 1 information from INPR is transferred to AC and flag is cleared to 0.

- Then new information can be moved to INPR

OUTPUT-WORKING

- Initially output flag FGO is set to 1.
- So information from AC is transferred to OUTR and flag is cleared to 0.
- Output device accepts information, when operation is completed and sets **FGO 1**

OUTPUT-WORKING

- The output device accepts the coded information, prints the corresponding character, and when the operation is completed, it sets FGO to the computer does not load a new character into OUTR when FGO is 0 because this condition indicates that the output device is in the process of printing the character