ECE 3120
Computer Systems
Assembly Programming

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Prev:

- Assembler Directives
- Instruction format

Today:

- Software development issues

Software Development Process

- Problem definition: Identify what should be done.
  - Develop the algorithm.
    - Algorithm is the overall plan for solving the problem at hand.
    - An algorithm is often expressed in the following format:
      - Step 1
      - …
      - Step 2
      - …
  - Another way to express overall plan is to use flowchart.
- Programming. Convert the algorithm or flowchart into programs.
- Program testing
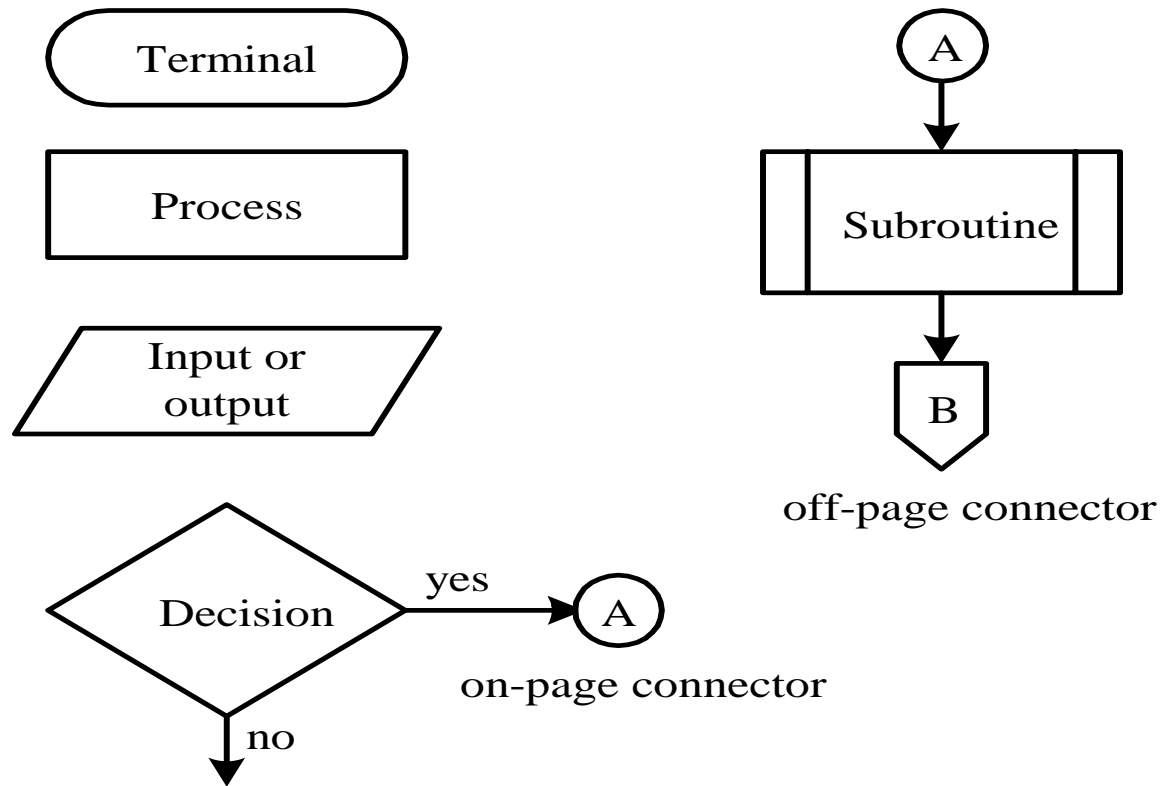- Program maintenance

Symbols of Flowchart

Terminal

Process

Input or output

Decision — yes → A

on-page connector

no

A → Subroutine → B

off-page connector

Figure 2.1 Flowchart symbols used in this book

Additional Universal Transfer Instruction

The SEX **instruction sign-extend an 8-bit number into a 16-bit number so that it can be used in 16-bit signed operations. For example,**

    SEX   A,X

You can sign extend A,B,CCR to D,X,Y,SP

Next…

- Arithmetic Programming
- Read Chapter 2.5