Basic Flowcharting

Presented by:

Jim Polzin

e-mail: james.polzin@normandale.edu
otto: http://otto.normandale.edu

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FLOWCHARTING BASICS

Flowcharting strengths

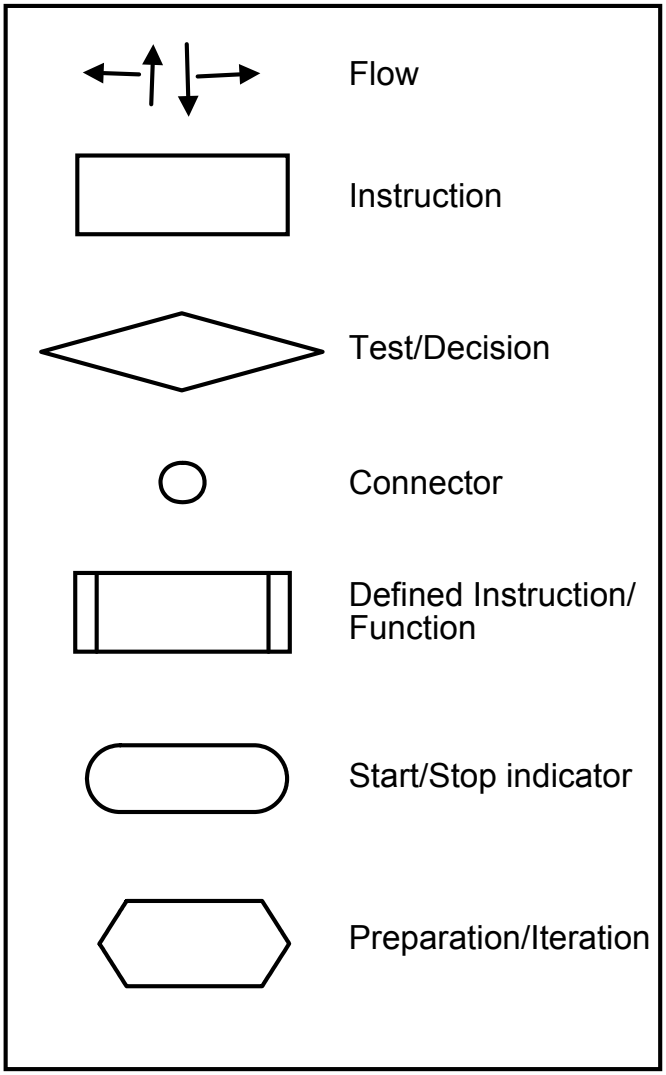
- a graphical representation of a process/program
- allows a software developer to diagram what a program is supposed to do
- is language independent
- can sometimes convey more information than other design tools:

"A picture is worth a thousand words."

Flowcharting weaknesses

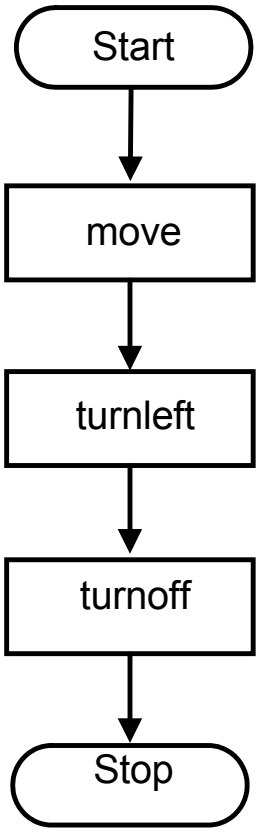
- it is harder to manipulate and produce graphics than text, like pseudocode
- more difficult to translate easily into an actual program
- rules are not strict and can be violated

FLOWCHART SYMBOLS



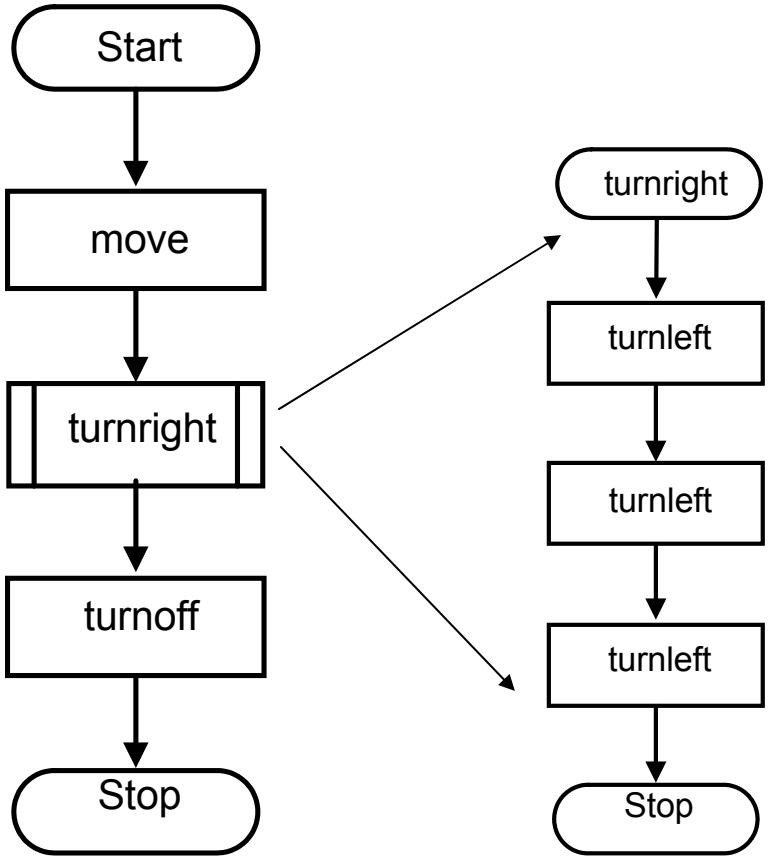
SEQUENCE OF INSTRUCTIONS

- A basic programming structure or process described by a flowchart is a simple sequence of steps
- Each instruction in the process is placed in a rectangular box
- Arrows indicate the flow through the instructions



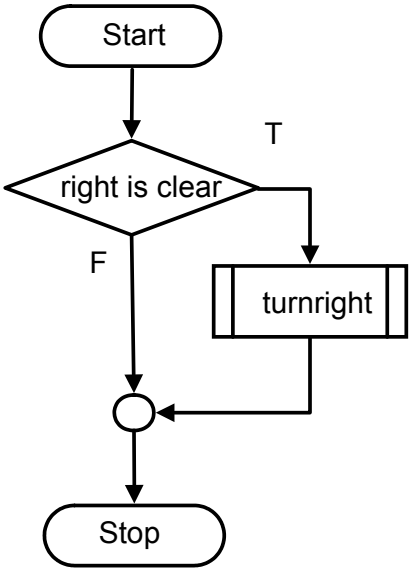
MODULES/FUNCTIONS/INSTRUCTION DEFINITIONS

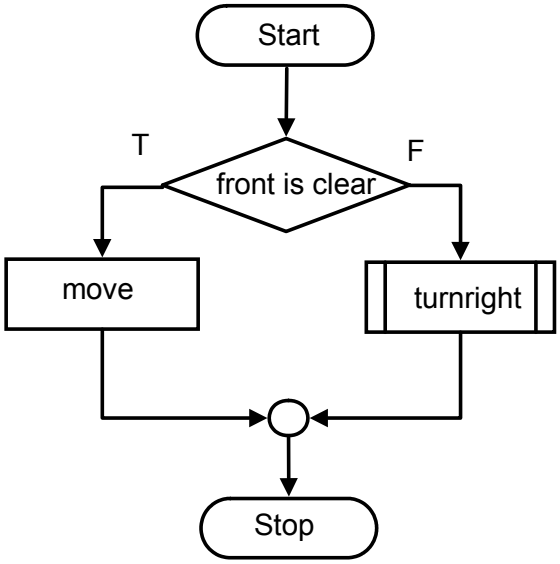
- A user-defined instruction or complicated process is denoted by a rectangle with double bars
- A more detailed description of the instruction or process is provided elsewhere
- This allows a "higher-level" flowchart to provide an overview of the program with details provided elsewhere



CONDITIONAL STATEMENTS

- Instructions in a program or process can be conditionally executed
- A test is run or a decision is made to select between two alternate paths
- Depending on the path chosen, instruction(s) may or may not be executed





LOOPS

- A while loop repeats based on a test or decision
- An iterate or counted loop repeats a specific number of times
- A while loop uses the test/decision symbol to control a "looping path" that the program or process will continue to pass through, as long as the test is true. A while loop looks similar to a conditional statement but a while loop can be distinguished by the "looping" path that can repeatedly routes the program or process back through the test/decision
- A counted loop uses the "preparation" symbol to indicate that it must prepare to "count off" the repetitions.