C PROGRAMING

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Control Statements

- Decision or Selection
  - if-else
  - switch-case
- Iteration (loop)
  - for
  - while
  - do-while
- Jump
  - break
  - continue
  - goto
  - return

break/continue

- break statement
  - Used to early exit from loop, or to exit an infinite loop
  - Takes control out of current loop and continues execution of statements after the loop.
  - Statements after break are skipped.

- continue statement
  - Used to continue next iteration of the loop.
  - Statements after continue are skipped (for current iteration).

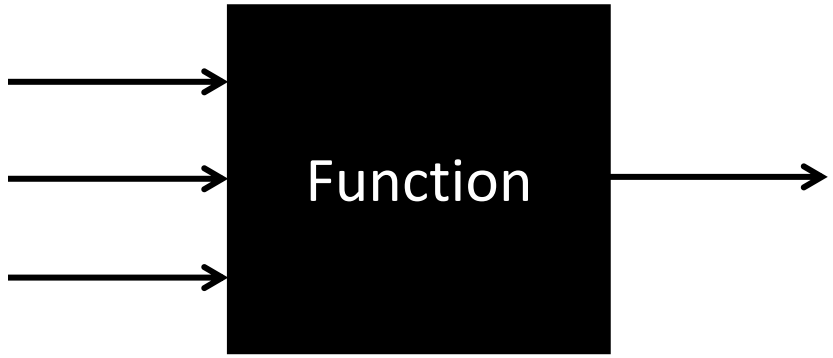
- break is used with loop/switch case.
- continue used with only loop.

- In case of nested loops, break/continue affects current loop only (not outer).

Functions

- C program is made up of one or more functions.
- C program contains at least one function i.e. main() function.
  - Execution of C program begins from main.
  - It returns exit status to the system.

- Advantages
  - Reusability
  - Readability
  - Maintainability



- Function is set of instructions, that takes zero or more inputs (arguments) and return result (optional).
- Function is a black box.

Functions

- Each function has
  - Declaration
  - Definition
  - Call
- A function can be called one or more times.
- Arguments
  - Arguments passed to function → Actual arguments
  - Arguments collected in function → Formal arguments
  - Formal arguments must match with actual arguments

Examples:

1. addition()
2. print_line()
3. factorial()
4. combination()

Function execution

- When a function is called, function activation record/stack frame is created on stack of current process.
- When function is completed, function activation record is destroyed.
- Function activation record contains:
  - Local variables
  - Formal arguments
  - Return address
- Upon completion, next instruction after function call continue to execute.

Thank you!

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