

## Writing C Programs (cont)

Problem: print 100 messages:

- approach 1:
  - write 100 printf statements
- approach 2: use functions
  - one function prints 10 messages
  - another function calls this one 10 times
- approach 3: use a loop (next week)

## Writing C Programs (cont)

Problem: Adding two numbers (again):

- get the first number
- get the second number
- print the sum of the two numbers
- use functions for the above operations

## Writing C Programs (cont)

Problem: giving speeding tickets

- get the type of licence (L, P, Full)
- get the recorded speed
- get the local speed limit
- work out whether a speeding ticket is given

## Writing C Programs (cont)

Additional info for the speeding problem:

- L-Plate drivers limited to max 80kmh
  - or the local speed limit, whichever is the lower
- P-Plate drivers limited to max 100kmh
  - or the local speed limit, whichever is the lower
- for Full drivers, allow +5km above limit
  - except in School Zones (40kmh hard limit)

## Functions (cont)

Functions introduce notions of

- **scope** ... where is an object visible?
- **lifetime** ... how long does an object exist?

## Functions (cont)

Variables defined within a function ...

- are only visible within that function
- only exist while the function is executing
  - are created when the function is called
  - are removed when the function **returns**