MONASH University

MONASH
ENGINEERING
ENG1060

REUSABLE CODE

Presented by Tony Vo

Slides by Tony Vo

GROUP OF EIGHT AUSTRALIA

REUSABLE CODE

- Computer's don't get tired of repeating the same mundane tasks over and over again
  - We can take advantage of this

- We write code with a purpose that the same code can be used many times for different problems
  - Reusable or generic code saves you time in the long run
  - Being generic means that the code is applicable to many different problems
  - Makes you more employable as an engineer/scientist

REUSABLE CODE

- Keep It Simple and Smart
  - Your code should be straight to the point
  - Code should be variable and dynamic

- In future lectures, we will cover:
  - Functions: increases code reusability
  - Loops: increases functionality

REUSABLE CODE: EXAMPLE

- A friend who is repeating this unit gave you the following code

```
plot(-5:5, -2*(-5:5).^2  + 2*(-5:5) + 5);
```

  - Can you make the code more reusable?

- Hints:
  - Think about needing to use the code for your own purpose
  - Recognise where variables can be used in place of static numbers

MORE BUILT-IN FUNCTIONS

- A = input('text'): Prints out the text string and awaits an input from the user to store into variable A

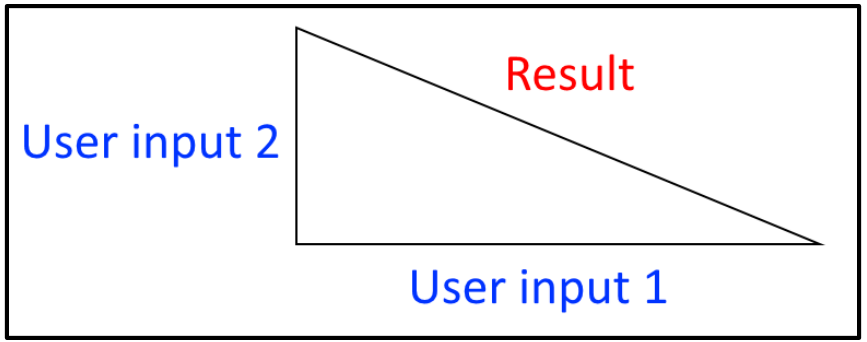
- pause: Pauses the m-file until a key is pressed
- pause(N): Pauses for N seconds

- disp(X): Displays the value of variable X
- disp('text'): Displays the text string

- echo on / off: Prints commands for debugging purposes

INTERACTIVE PYTHAGORAS

- Problem description
  - Write a program that calculates the hypotenuse length of a right angle triangle given user input lengths of the adjacent and the opposite sides



INTERACTIVE PYTHAGORAS

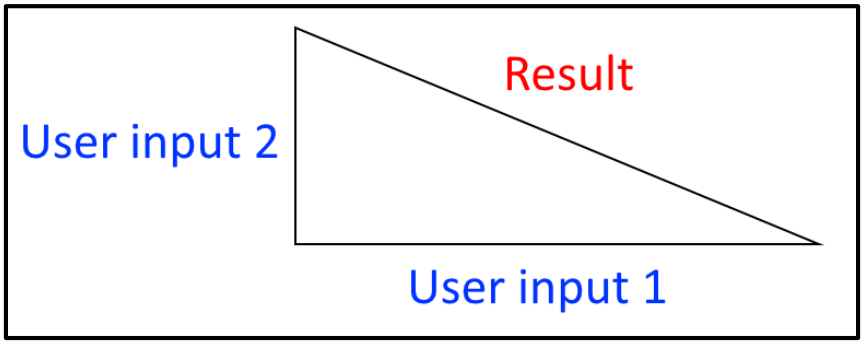
- Two input commands (one for each side)

  adjacent = input('…')

  opposite = input('…')

- We can then calculate the hypotenuse length based on those inputs

  hypotenuse = sqrt(adjacent^2 + opposite^2)



SUMMARY

- Writing generic and dynamic code
- More built-in functions

- Are you required to request a user input for every variable in your code?