Introduction to Computer Programming Using Matlab

What will be in our first example program (lab 1)?

- Input
  - Get trapezoid data from the user
  - Need b1, b2, h
- Calculation
  - Just use the formula to calculate (and store) the answer
- Output
  - Show the result on the screen
- Comments
  - “explanations” for humans; computer ignores comments.

Input & output

- `variable = input('prompt')`
  - `h = input('Enter the height: ')`
- `fprintf('message to print')`
  - `fprintf('Hello!')`
  - `fprintf('Area is %f\n', x)`

Saving and running a program

- Matlab programs have the filename extension `.m`
- Eg., a Matlab program file may have the name `trapezoidArea.m`

To run a Matlab program with the above name, type in the Command Window the name without the `.m` extension

Calling a built-in function

- You only need to know the name of the functions and how to use it
- Eg., to evaluate the sine of 2 radians you type `sin(2)`
  - i.e., you call the function by its name and give it one single value to work on.
- To use the remainder function, e.g., `rem(315,7)`
  - This function needs two values.
Play with graphics function

- `DrawRect(...)`
- `DrawDisk(...)`
- `DrawStar(...)`

Color Options

- White: 'w'
- Black: 'k'
- Red: 'r'
- Blue: 'b'
- Green: 'g'
- Yellow: 'y'
- Magenta: 'm'
- Cyan: 'c'

A general graphics framework

```matlab
% drawDemo
close all
figure
axis equal off
hold on

Code fragment to draw the objects (rectangle, disk, star)
```

```
hold off
```