EE1910
Coding Guide
(Dr. Johnson)

Last Updated 6/7/24

Coding Guide

- Windows Guidelines
  - Eclipse workspaces / projects will be placed in student directories – not inside the Eclipse installation directory
  - Absolutely no spaces in file or directory names
    - use underscore instead: my_project_directory
  - File names must be descriptive
    - lab3_part1.c or continuous_average.c
    - 🚫 l3p1, try15, i_hate_c
    - main.c is not an acceptable program name

Coding Guide

- General C code guidelines

  - All code must be properly indented
    - I will not help debug un-indented code
    - I will not grade un-indented code

  - Your name must be in the header section of your code

  - File structure will be:

    pre-processor directives
    function prototypes
    main
    function definitions

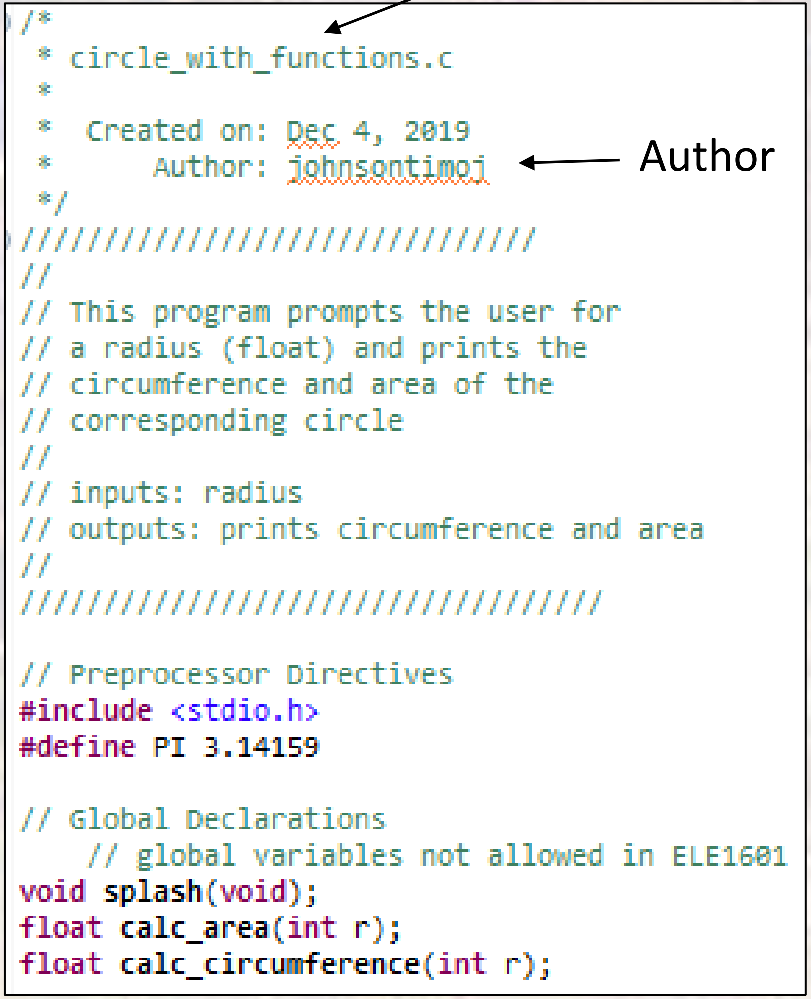
Coding Guide

- General C code guidelines
  - Main will be used for control
  - Most processing will be performed in functions
    - (after we learn about functions)
  - No global variables
  - Attempt to make your code as general (re-usable) as possible
  - Use #define for constants and values used in multiple locations

Coding Guide

- Header + Global

File name



```
/*
 * circle_with_functions.c
 *
 *  Created on: Dec 4, 2019
 *      Author: johnsontimoj
 */
///////////////////////////////
//
// This program prompts the user for
// a radius (float) and prints the
// circumference and area of the
// corresponding circle
//
// inputs: radius
// outputs: prints circumference and area
//
///////////////////////////////////

// Preprocessor Directives
#include <stdio.h>
#define PI 3.14159

// Global Declarations
    // global variables not allowed in ELE1601
void splash(void);
float calc_area(int r);
float calc_circumference(int r);
```

Author

Break up lines to make it more readable

created by Eclipse when you create a new file

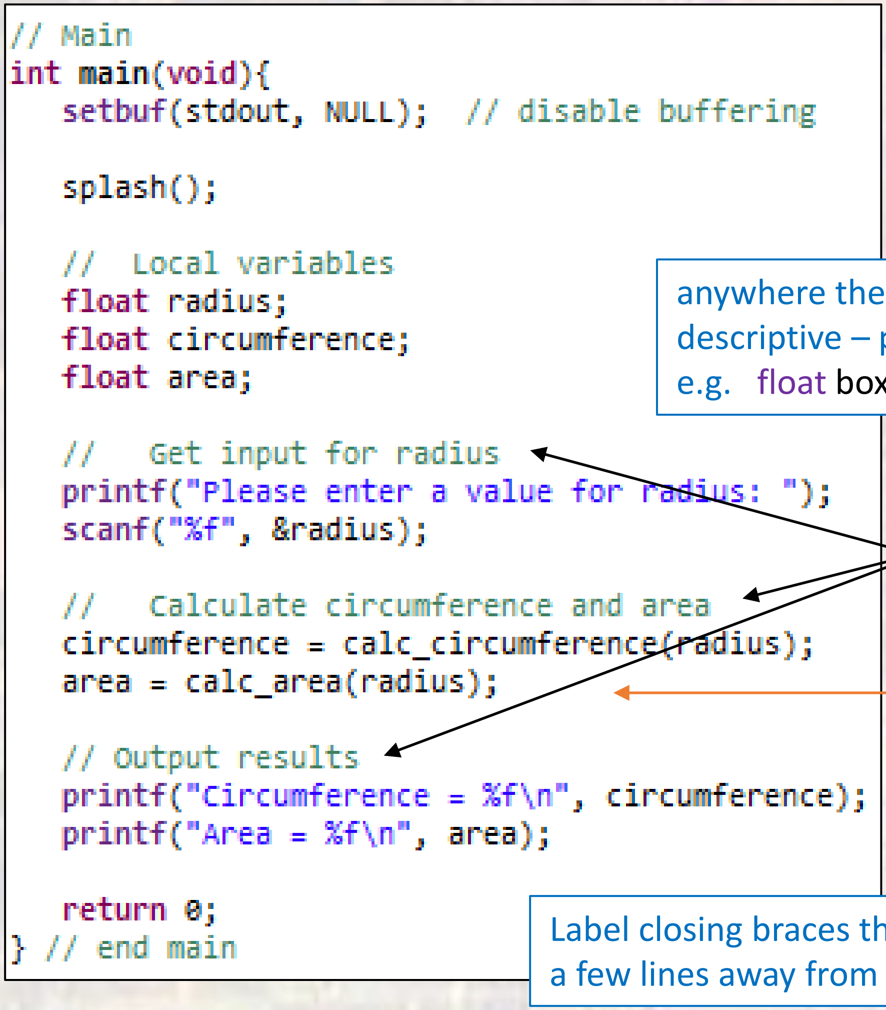
Description of what the program does

Preprocessor Directives

Global Declarations
Functions ONLY
No global variables allowed

Coding Guide

- Main



```
// Main
int main(void){
   setbuf(stdout, NULL);  // disable buffering

   splash();

   //  Local variables
   float radius;
   float circumference;
   float area;

   //   Get input for radius
   printf("Please enter a value for radius: ");
   scanf("%f", &radius);

   //   Calculate circumference and area
   circumference = calc_circumference(radius);
   area = calc_area(radius);

   // Output results
   printf("Circumference = %f\n", circumference);
   printf("Area = %f\n", area);

   return 0;
} // end main
```

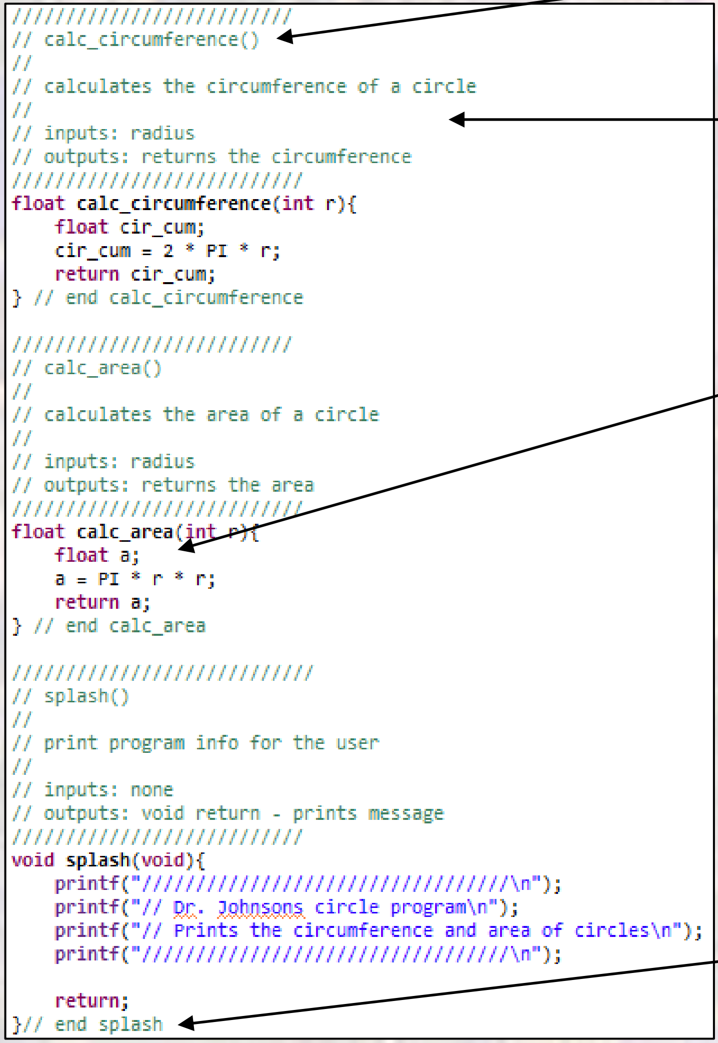
anywhere the variable name is not absolutely descriptive – provide a comment
e.g. float box; // value to hold volume of the box

Comment on what you are doing
but
Don't comment on what the code does
e.g. // call the calc_area function

Label closing braces that are more than
a few lines away from their opening counterpart

Coding Guide

- Additional Functions



```
//////////////////////////
// calc_circumference()
//
// calculates the circumference of a circle
//
// inputs: radius
// outputs: returns the circumference
///////////////////////////
float calc_circumference(int r){
    float cir_cum;
    cir_cum = 2 * PI * r;
    return cir_cum;
} // end calc_circumference

//////////////////////////
// calc_area()
//
// calculates the area of a circle
//
// inputs: radius
// outputs: returns the area
///////////////////////////
float calc_area(int r){
    float a;
    a = PI * r * r;
    return a;
} // end calc_area

////////////////////////////
// splash()
//
// print program info for the user
//
// inputs: none
// outputs: void return - prints message
///////////////////////////
void splash(void){
    printf("//////////////////////////////////\n");
    printf("// Dr. Johnsons circle program\n");
    printf("// Prints the circumference and area of circles\n");
    printf("//////////////////////////////////\n");

    return;
}// end splash
```

Use descriptive function names

Description of what the program does

Always indicate inputs and outputs

anywhere the variable name is not absolutely descriptive – provide a comment
e.g. float a; // value to hold the area

Comment on what you are doing
but
Don’t comment on what the code does

Label closing braces that are more than a few lines away from their opening counterpart