| **Week 01, Homework 01** | **Weight: 2%** | **Due: Friday week 2, 11:59pm (via `sync`)** |

Pre-homework Preparation:
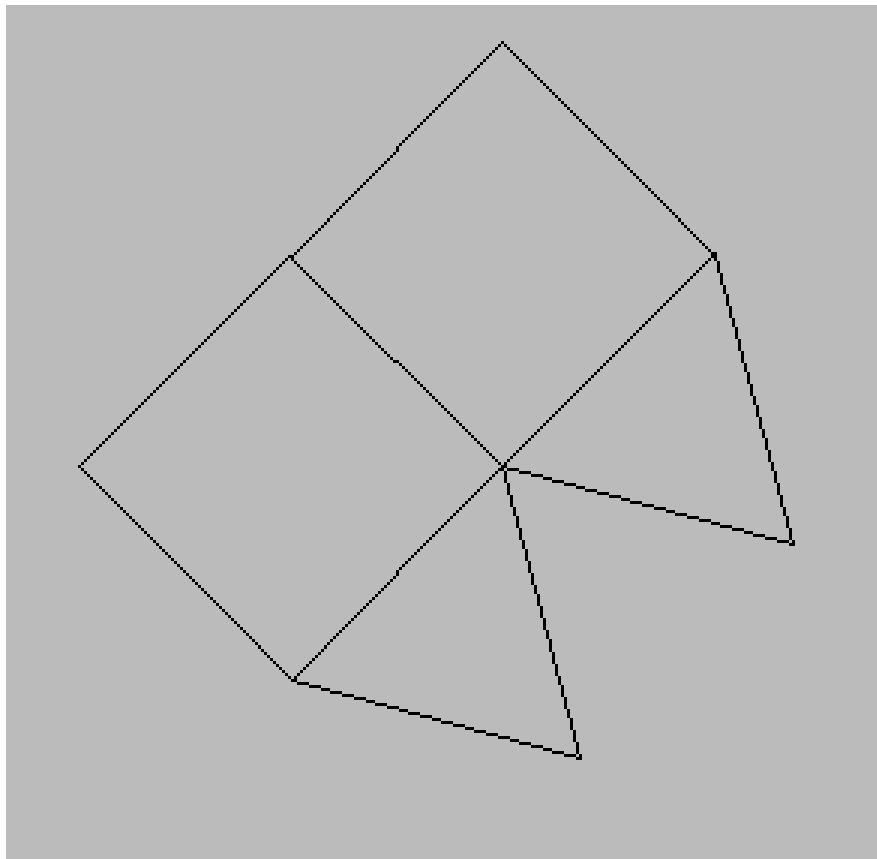- **Lab: Week 01, Lab 01**
- **Lectures: Week 01**

Homework Activities:

For each question's source file, be sure to fill in the file comment header accurately!

Question 1: Turtle API usage: Sequence

Navigate to the directory: **~/p1.2015s1/homework01/working_copy/q01/**

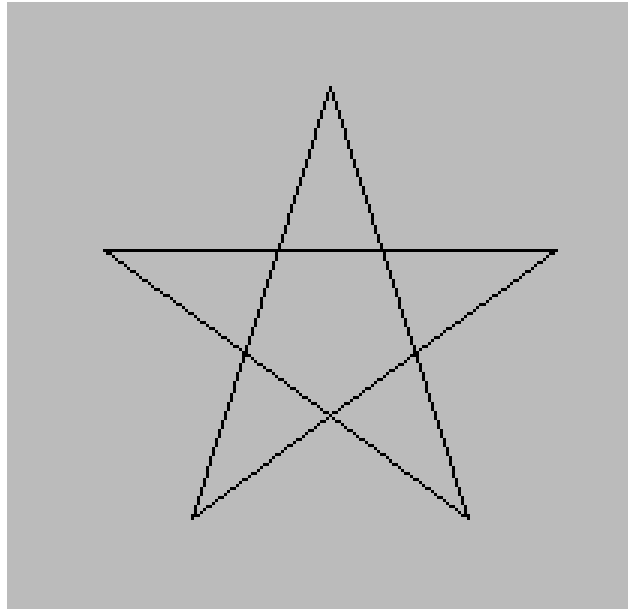Open **q01.c** in the text editor. Write code to draw the following:

Run **make** to compile your code. Run: **./q01** to test your program.

Question 2: Turtle API usage: Sequence with Colour

Navigate to the directory: **~/p1.2015s1/homework01/working_copy/q02/**

Open **q02.c** in the text editor. Write code to draw five stars like the turtle drawing below, but make each star a different colour!
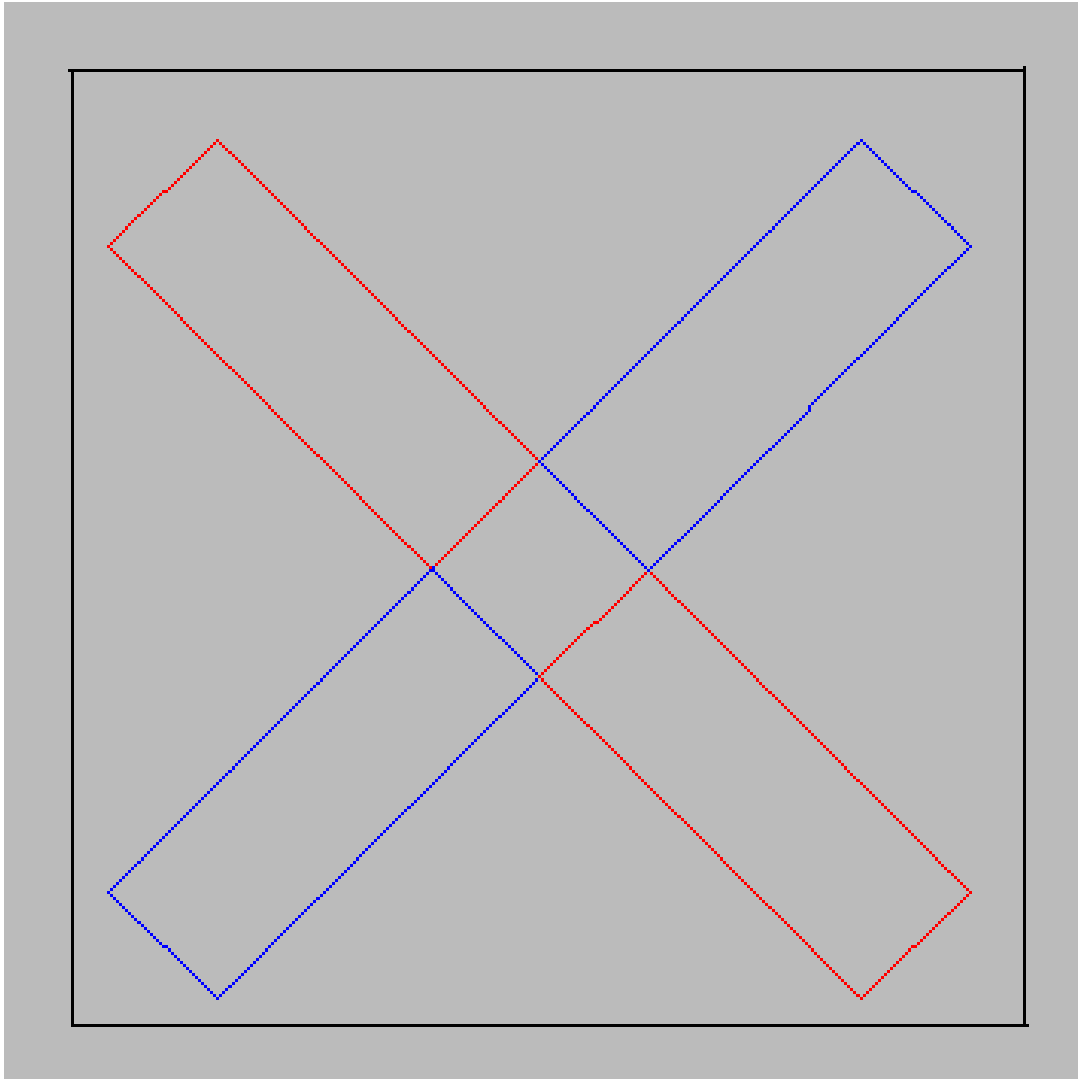

The stars must not touch each other, do not have them over lap, and do not let the turtle draw any lines between the stars!

Compile and run your code as usual...

Question 3: Turtle API usage: Creating void Functions

Navigate to the directory: **~/p1.2015s1/homework01/working_copy/q03/**

Compile and run **hw01q03.c**; you will find it draws the following:

Open **hw01q03.c** in the text editor. All the code to draw this is inside the **main** function. Using your best judgement, edit the program to create functions that do particular actions in the drawing routine. Think about separating the concerns of parts of the program. Your reworked **main** function should call your newly created functions to draw the symbol exactly as before.

Question 4: Turtle API usage: Writing void Functions

Navigate to the directory: **~/p1.2015s1/homework01/working_copy/q04/**

Use the turtle to draw a cartoon style house. Write at least the following **void** functions (in **hw01q04.c**) to abstract drawing of the different parts of your house, you can create more if you need to:

- **draw_window()**
- **draw_door()**
- **draw_walls()**
- **draw_roof()**
- **draw_garden()**
- **draw_sky()**

Call your house drawing functions from the main function to draw the cartoon style house.
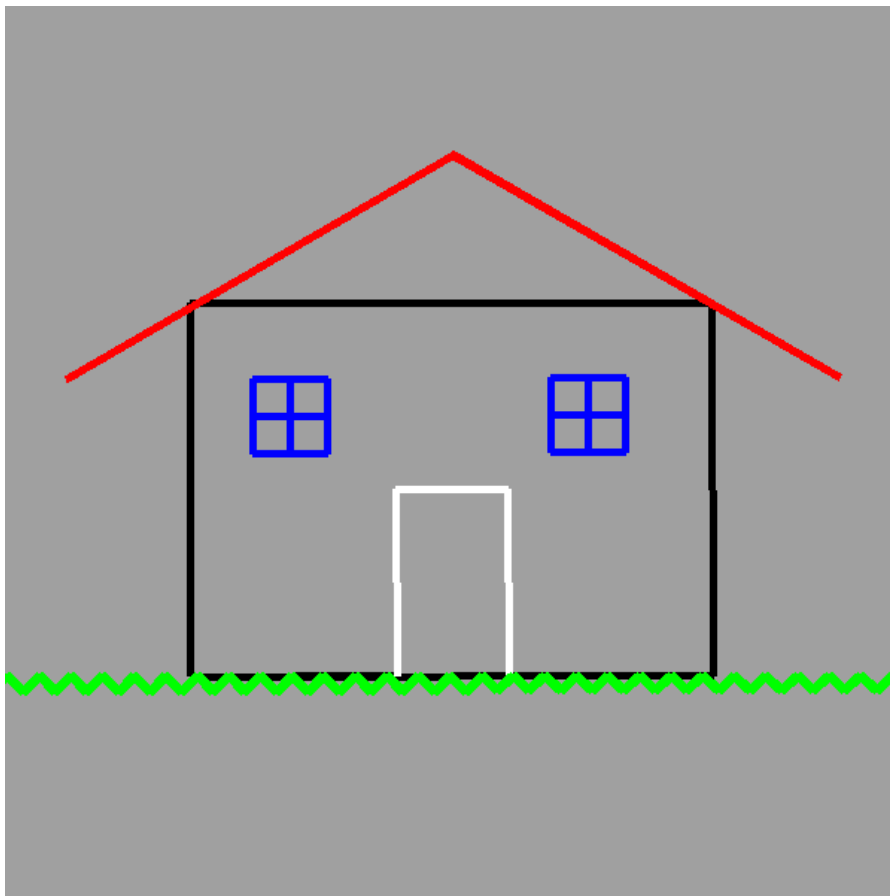
This image is drawn with a previous version of the library that draws thick lines. Now we can only draw thin lines – but see if you can find a simple way to get the appearance of thick lines.

Add **print_stub** calls into your functions to help debug the drawing process.

Question 5: Turtle API usage: Drawing numbers

Navigate to the directory: **~/p1.2015s1/homework01/working_copy/q05/**

Open **hw01q05.c** in the text editor.

Declare and define the following **void** functions:
- **draw_1()**
- **draw_2()**
- **draw_3()**
- **draw_4()**
- **draw_5()**
- **draw_6()**
- **draw_7()**
- **draw_8()**
- **draw_9()**
- **draw_0()**

Numbers should be drawn as seen on a seven-segment LCD display. For example:

You may want to think about writing functions that can draw each segment of the seven segment LCD display, but just getting each function to draw the required number is a good start!

Write a **void** function called **draw_my_student_id()** which calls your draw number functions to tell the turtle to draw your AUT Student ID.

Call your **draw_my_student_id()** function from the **main** function.

Question 6: Turtle API usage: Drawing letters

Navigate to the directory: **~/p1.2015s1/homework01/working_copy/q06/**

Create the file **hw01q06.c**. Declare and define a **void** function to draw your first name: **draw_my_name()**

Homework Submission:

Run the **sync** command to submit your completed homework.

Marking Criteria:

Have you completed each of the following?

Marking Criteria:	Week 01, Homework 01 Weight 2%	Maximum Possible Mark:	Mark achieved?
Q1:	Correct pattern drawn?	5	
	Good whitespace usage?	2	
Q2:	Correct stars drawn?	5	
	Good whitespace usage?	2	
Q3:	Functions created and called?	10	
	Functions well named?	5	
	Good whitespace usage?	5	
Q4:	House drawn?	5	
	Separate functions used for house drawing?	6	
	Appearance of thick lines?	2	
	Good whitespace usage?	2	
Q5:	Functions declared for each drawing digit?	10	
	The **main** function calls **draw_student_id** to draw the student's id?	2	
	Good whitespace usage?	2	
Q6:	The **main** function calls **draw_my_name** to draw the student's first name?	5	
	Good whitespace usage?	2	
Total:		**70**	