Homework 2

Files to submit: **conversions.c**
Time it took Matthew to Complete**: 45 mins**

- All programs must compile without warnings when using the -Wall and -Werror options
- Submit only the files requested
  - Do **NOT** submit folders or compressed files such as .zip, .rar, .tar, .targz, etc
- Your program must match the output exactly to receive credit.
  - Make sure that all prompts and output match mine exactly.
  - Easiest way to do this is to copy and paste them
- All input will be valid unless stated otherwise
- Print all real numbers to two decimal places unless otherwise stated
- The examples provided in the prompts do not represent all possible input you can receive.
- All inputs in the examples in the prompt are underlined
  - You don't have to make anything underlined it is just there to help you differentiate between what you are supposed to print and what is being given to your program
- If you have questions please post them on Piazza

Restrictions

- No global variables are allowed
- Your main function may only declare variables and call other functions.

Assumptions

- Input is **NOT** guaranteed to be valid

For this program you will be converting temperatures and distances from one unit to another.

Temperatures			
From	Fahrenheit	Celsius	Kelvin
Fahrenheit(F)	F	(F – 32) * 5/9	(F-32) * 5/9 + 273.15
Celsius(C)	(C * 9/5) + 32	C	C + 273.15
Kelvin(K)	(K – 273.15) * 9/5 + 32	K – 273.15	K

Distances				
From	Inches	Feet	Yards	Miles
Inches(I)	I	I / 12	I / 36	I / 63360
Feet(F)	F * 12	F	F / 3	F / 5280
Yards(Y)	Y * 36	Y * 3	Y	Y / 1760
Miles(M)	M * 63360	M * 5280	M * 1760	M

Requirements:

- Users should be able to enter both upper and lower case letters for their choices
- Any amount of white space should be allowed between a number and its unit

Hints:

- This is a large program that you will want to break down into lots of functions to help manage the complexity
- When doing the conversions you can save yourself a bit of work by always converting your units into a common one and then converting to the desired one.
    - For example when converting temperatures you could always convert the given temperature to Celsius and then from Celsius go to the desired unit

Examples on Next Page.

Examples:

1. T or t for temperature
   D or d for distance
   Enter your choice: t
   Enter the temperature followed by its suffix (F, C, or K): 0K
   Enter the new unit type (F, C, or K): C
   0.00K is -273.15C
2. Pick the type of conversion that you would like to do.
   T or t for temperature
   D or d for distance
   Enter your choice: d
   Enter the distance followed by its suffix (I,F,Y,M): 5 y
   Enter the new unit type (I,F,Y,M): i
   5.00Y is 180.00I
3. Pick the type of conversion that you would like to do.
   T or t for temperature
   D or d for distance
   Enter your choice: J
   Unknown conversion type J chosen. Ending Program.
4. Pick the type of conversion that you would like to do.
   T or t for temperature
   D or d for distance
   Enter your choice: 10
5. Invalid formatting. Ending program.
6. Pick the type of conversion that you would like to do.
   T or t for temperature
   D or d for distance
   Enter your choice: t
   Enter the temperature followed by its suffix (F, C, or K): 42 G
   G is not a valid temperature type. Ending program.
7. Pick the type of conversion that you would like to do.
   T or t for temperature
   D or d for distance
   Enter your choice: t
   Enter the temperature followed by its suffix (F, C, or K): 420 Blaze It
8. Invalid formatting. Ending program.