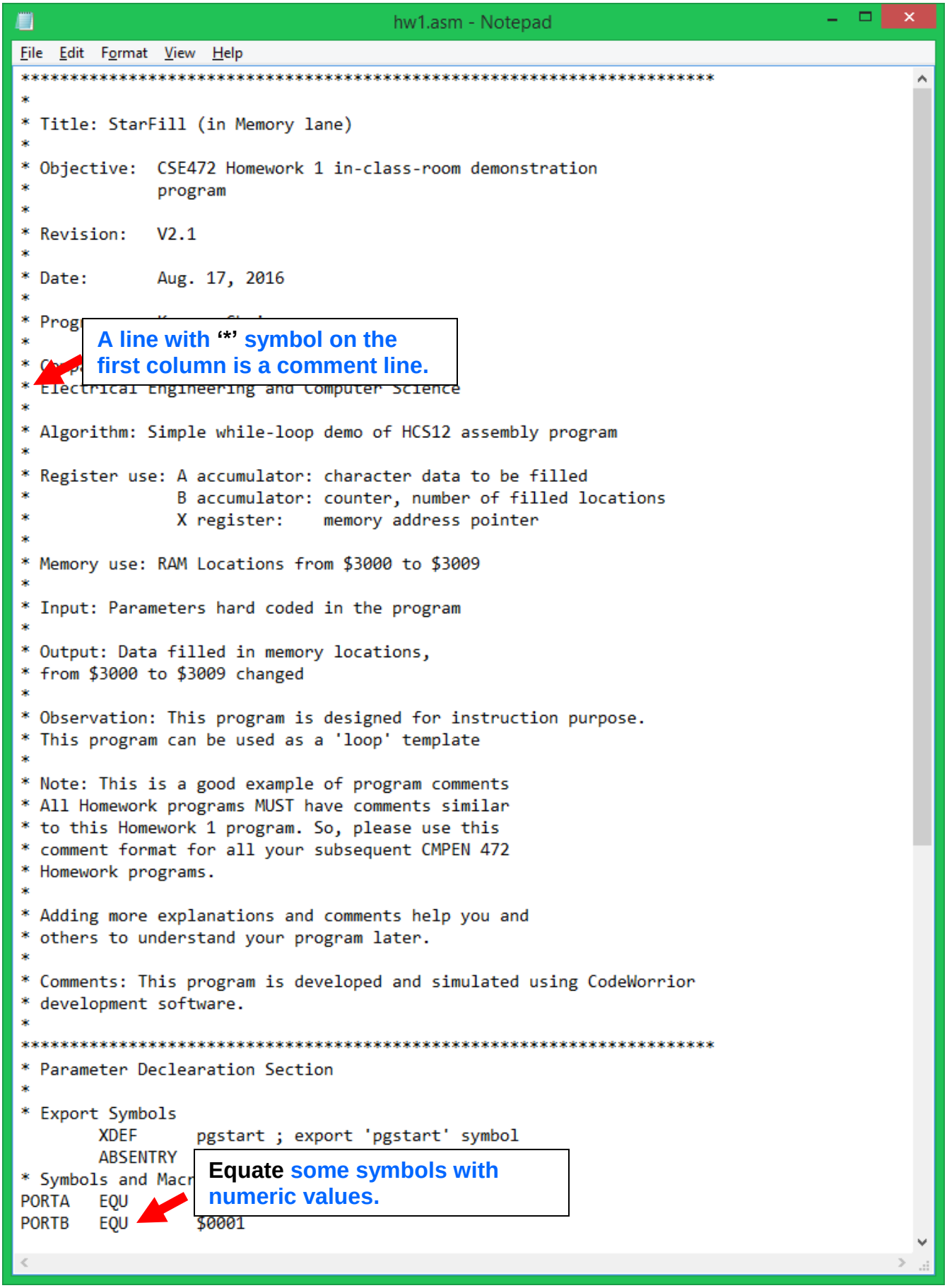
Homework 1 Aid

Understanding Homework 1 Program




```
*******************************************************************************
*
* Title: StarFill (in Memory lane)
*
* Objective:  CSE472 Homework 1 in-class-room demonstration
*             program
*
* Revision:   V2.1
*
* Date:       Aug. 17, 2016
*
* Prog
*
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* Electrical Engineering and Computer Science
*
* Algorithm: Simple while-loop demo of HCS12 assembly program
*
* Register use: A accumulator: character data to be filled
*               B accumulator: counter, number of filled locations
*               X register:    memory address pointer
*
* Memory use: RAM Locations from $3000 to $3009
*
* Input: Parameters hard coded in the program
*
* Output: Data filled in memory locations,
* from $3000 to $3009 changed
*
* Observation: This program is designed for instruction purpose.
* This program can be used as a 'loop' template
*
* Note: This is a good example of program comments
* All Homework programs MUST have comments similar
* to this Homework 1 program. So, please use this
* comment format for all your subsequent CMPEN 472
* Homework programs.
*
* Adding more explanations and comments help you and
* others to understand your program later.
*
* Comments: This program is developed and simulated using CodeWorrior
* development software.
*
*******************************************************************************
* Parameter Declearation Section
*
* Export Symbols
        XDEF      pgstart ; export 'pgstart' symbol
        ABSENTRY
* Symbols and Macr
PORTA   EQU
PORTB   EQU       $0001
```

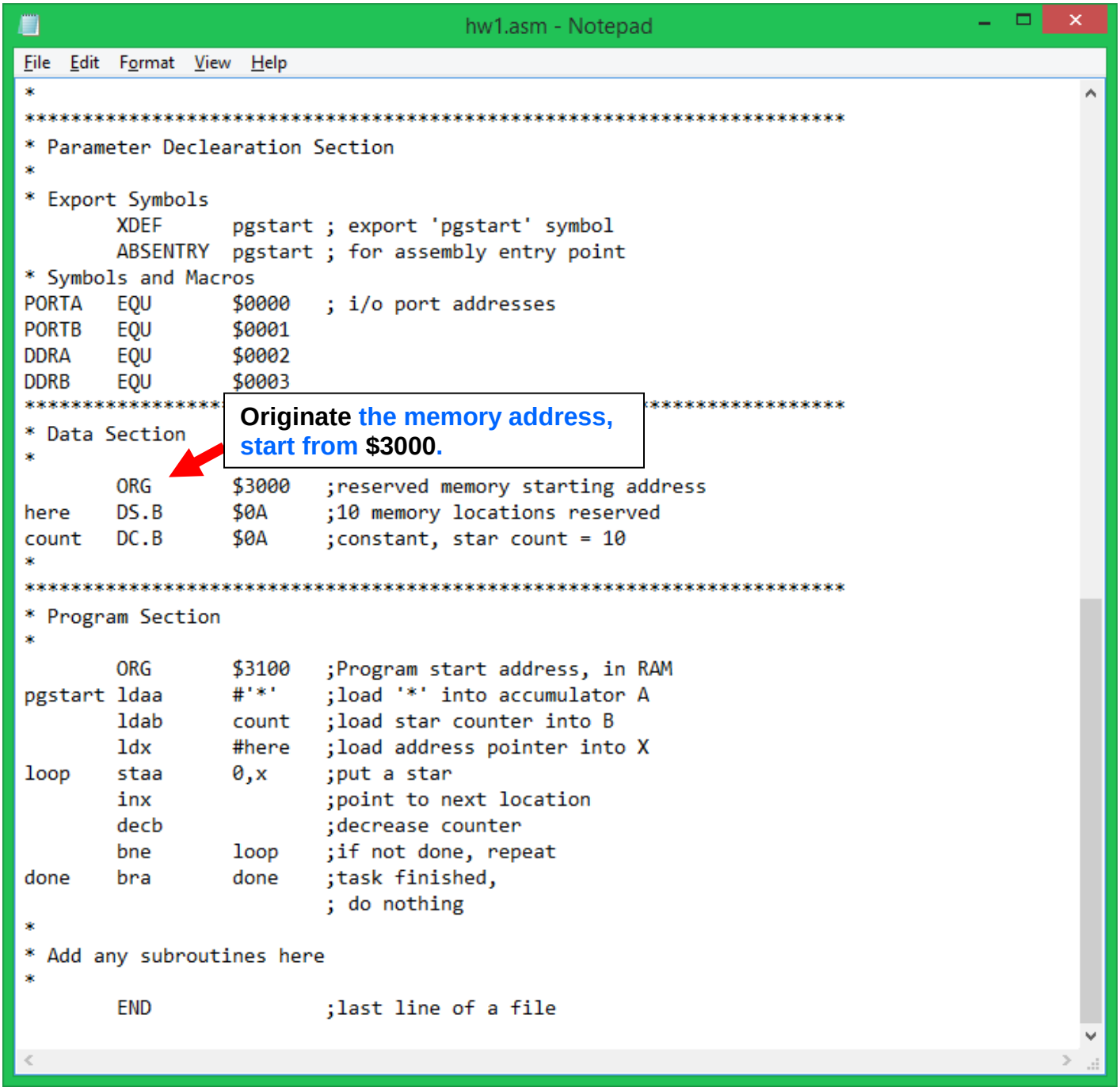

Number Notation: decimal, hexa-decimal, binary, others
$ %

HC12 Memory Map: $0000 -> $FFFF, RAM, ROM(Flash), Port

HC12 Register Set: A, B, X, Y, CCR, SP, PC

HC12 Instruction Set: LOAD, STORE, BRANCH

HC12 Addressing Modes: #$3000, $3000, 0,x

HCS12 Microcontroller: S12CPU

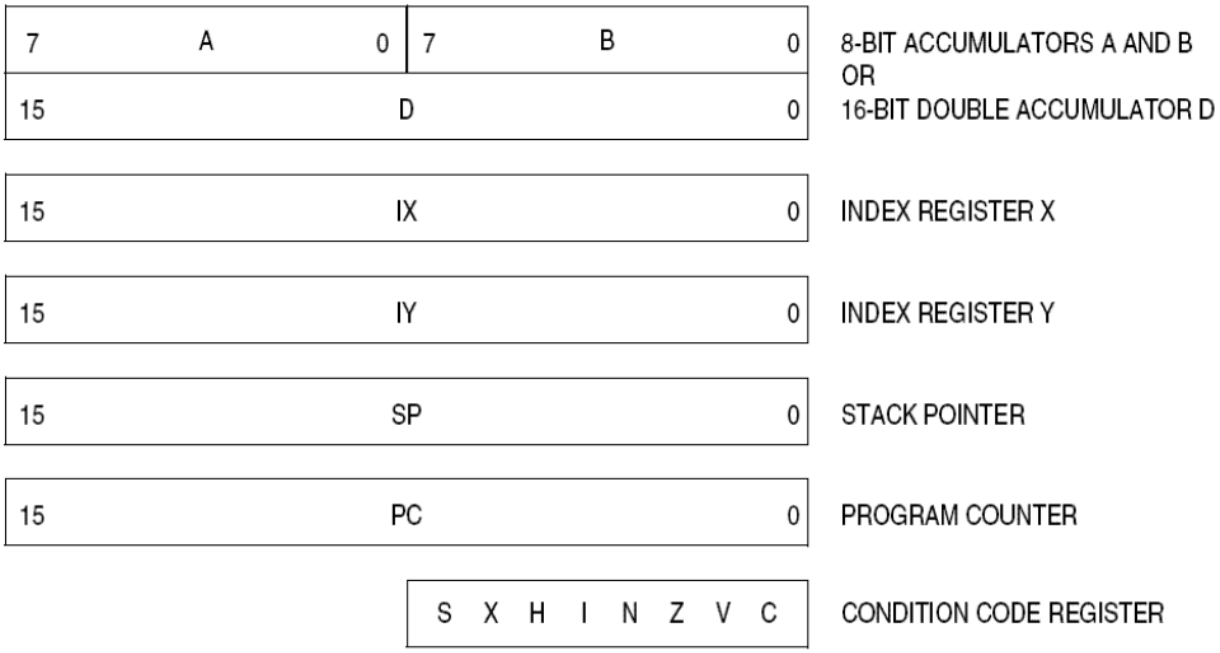

Figure 2-1. Programming Model

Program Flow Chart: Top-down approach, helps quickly design program, and helps program understanding.