Lab A
Creating, Assembling, Debugging Files

1. Start Keil uVision 3

2. File (Note: Let it go where ever it wants.)
   New Project
   uVision Project
   File name: Lab A.uV2

3. Select Target (Note: Folder named Target1 is created in workspace.)
   ATMEL
   AT89C51RD2

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4. File (Note: Text1 window is created is created in main window)
   New
   File

5. Create the following program inside Text1 window.

```
        ORG     00H
        AJMP    Main

        ORG     100H        ;originate program at this location
Main:   NOP
        MOV     R5,#25H     ;load register 5 with 25H
        MOV     A,#0H       ;load #0H into Acc A, clear Acc
        ADD     A,R5        ;add contents of Reg 5 to Acc A
        ADD     A,#5H       ;add #5H to Acc A
        ADD     A,#5H       ;add #5H to Acc A
Here:   SJMP    Here        ;stay in this loop
        END
```

6. File (Note: Program is assembled.)
   Save As
   File name: LabA.a51

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7. Expand Target1
   Project
   Manage
   Components, Environment, Books, etc.
   Add Files (Note: Find LabA.a51, All files *.*)
   Add - OK

8. Create Hex File (Select LabA.a51 file if necessary.)

   Project
   Options for Target “Target1"
   Target
   XTAL 11.092 MHz
   Output
   Create Hex File

9. “Build” to create object and hex files. (Note: Errors and Warnings in Build widow.)
   Project Menu
   Rebuild all Target Files

10. Debug
    Start/Stop Debug Sessions
    F11 (to step through program) (Note: Registers appear in workspace.)

11. Observe operation
    Start/Stop Debug Session (to stop simulation)

New Commands:

ORG	originate the program at a certain memory location
MOV	move or load data into accumulator or register
ADD	add to accumulator
SJMP	short jump
END	stop assembler