**Name: Shereen Ibdah**

**1200373**

 **Computer Organization and Microprocessors – ENCS2380**

 **Assembly Assignment**

**My Code : you will the Code in the last page also**





 Testing for ISBN 5123487654 R9 is the Validation digit and this ISBN is Valid:



Testing for ISBN 5123487658, R9 is the Validation digit and this ISBN is not Valid:



Testing for ISBN 7465159237, R9 is the Validation digit and this ISBN is Valid:



Testing for ISBN 7465159232, R9 is the Validation digit and this ISBN is not Valid



Testing for ISBN 123456789X , R9 is the Validation digit and this ISBN is Valid



 And it stored in memory like this :



Testing for ISBN 1234567891, R9 is the Validation digit and this ISBN is not Valid



PRESERVE8

 THUMB

 AREA RESET,DATA ,READONLY

 EXPORT \_\_Vectors;DEFINITION

\_\_Vectors DCD 0x20001000

 DCD Reset\_Handler

ARRAYISBN DCB 5,1,2,3,4,8,7,6,5,4

VALIDATIONDIGIT RN R1

SIZE EQU 10

COUNTER RN R2

SUM RN R4

RESULT RN R8

VALID RN R9

Digit1 RN R10

 ALIGN

 AREA GENERATER,CODE,READONLY ;; GENERATER

 ENTRY

 EXPORT Reset\_Handler

Reset\_Handler

 MOV COUNTER,#0x1

 LDR R0,=ARRAYISBN

 MOV R4,#0x0

 MOV R5,#0xA

LoopStart CMP COUNTER,#SIZE

 BEQ FINISH

 LDRB R3,[R0]

 MUL R3,R5

 ADD SUM,SUM,R3

 ADD R0,R0,#0x1

 SUB R5,R5,#0x1

 ADD COUNTER,COUNTER,#0x1

 B LoopStart

FINISH

 LDR R0,=ARRAYISBN

 ADD R0,R0,#0x9

 MOV R7,#0xB

 MOV RESULT,SUM

Loop CMP RESULT,R7

 BLO FIN

 SUB RESULT,RESULT,R7

 B Loop

FIN

 SUB VALIDATIONDIGIT,R7,RESULT

 CMP VALIDATIONDIGIT,#10

 BNE FI

 MOV VALIDATIONDIGIT,#'X'

FI

 LDR R0,=ARRAYISBN

 ADD R8,R0,#0x9

 LDRB Digit1,[R8]

 CMP VALIDATIONDIGIT,Digit1

 BEQ L2

 MOV VALID,#0x0

 B HERE

L2 MOV VALID,#0x1

HERE B HERE

 END