|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **8.B) READ THE STATUS OF TWO 8-BIT INPUTS (X & Y) FROM THE LOGIC CONTROLLER INTERFACE AND DISPLAY X\*Y.** | | | | | | |
| **LABEL** | **NEMONIC** | **OPERAND (MEMORY/REGISTER)** | | |  | **COMMENTS** |
|  | **.MODEL** | **SMALL** | | | **;** |  |
|  | **.DATA** |  | | | **;** |  |
| **PA** | **EQU** | **01080H** | | | **;** | **ADDRESS OF PORT A** |
| **PB** | **EQU** | **01081H** | | | **;** | **ADDRESS OF PORT B** |
| **PC** | **EQU** | **01082H** | | | **;** | **ADDRESS OF PORT C** |
| **CTRL** | **EQU** | **01083H** | | | **;** | **ADDRESS OF CONTROL WORD** |
| **X** | **DB** | **00** | | | **;** |  |
| **Y** | **DB** | **00** | | | **;** |  |
| **MSG1** | **DB** | **0DH,0AH,"PROVIDE I/P ON PORT B AND PRESS ENTER$"** | | | **;** |  |
| **MSG2** | **DB** | **0DH,0AH," SEE X\*Y OUTPUT ON PORT A$"** | | | **;** |  |
|  | **.CODE** |  |  |  | **;** |  |
|  | **MOV** | **AX** | **,** | **@DATA** | **;** | **INITIALIZATION OF DATA SEGMENT** |
|  | **MOV** | **DS** | **,** | **AX** | **;** |  |
|  |  |  |  |  |  |  |
|  | **MOV** | **AL** | **,** | **8AH** | **;** | **INITIALIZATION OF 8255 CONTROL WORD** |
|  | **MOV** | **DX** | **,** | **CTRL** | **;** |  |
|  | **OUT** | **DX** | **,** | **AL** | **;** |  |
|  |  |  |  |  |  |  |
|  | **MOV** | **AH** | **,** | **09** | **;** | **DISPLAY INPUT MESSAGE1** |
|  | **LEA** | **DX** | **,** | **MSG1** | **;** |  |
|  | **INT** | **21H** |  |  | **;** |  |
|  |  |  |  |  |  |  |
|  | **MOV** | **AH** | **,** | **01H** | **;** | **PROVIDE INPUT AT PORTB ON LC INTERFACE** |
|  | **INT** | **21H** |  |  | **;** | **AND PRESS ANY KEY** |
|  |  |  |  |  |  |  |
|  | **MOV** | **DX** | **,** | **PORT B** | **;** | **READ 8-BIT VALUE FROM PORT B** |
|  | **IN** | **AL** | **,** | **DX** | **;** |  |
|  | **MOV** | **X** | **,** | **AL** | **;** | **STORE I/P 8-BIT VALUE IN TO X** |
|  |  |  |  |  |  |  |
|  | **MOV** | **AH** | **,** | **09** | **;** | **DISPLAY INPUT MESSAGE1** |
|  | **LEA** | **DX** | **,** | **MSG1** | **;** |  |
|  | **INT** | **21H** |  |  | **;** |  |
|  |  |  |  |  |  |  |
|  | **MOV** | **AH** | **,** | **01H** | **;** | **PROVIDE INPUT AT PORTB ON LC INTERFACE** |
|  | **INT** | **21H** |  |  | **;** | **AND PRESS ANY KEY** |
|  |  |  |  |  |  |  |
|  | **MOV** | **DX** | **,** | **PORTB** | **;** | **READ 8-BIT VALUE FROM PORT B** |
|  | **IN** | **AL** | **,** | **DX** | **;** |  |
|  | **MOV** | **Y** | **,** | **AL** | **;** | **STORE I/P 8-BIT VALUE IN TO Y** |
|  |  |  |  |  |  |  |
|  | **MOV** | **AH** | **,** | **00** | **;** | **MULTIPLY X AND Y** |
|  | **MOV** | **AL** | **,** | **X** | **;** |  |
|  | **MOV** | **BL** | **,** | **Y** | **;** |  |
|  | **MUL** | **BL** |  |  | **;** | **PERFORM X\*Y** |
|  | **MOV** | **BX** | **,** | **AX** | **;** | **SAVE A COPY OF PRODUCT INTO BX** |
|  |  |  |  |  |  |  |
|  | **LEA** | **DX** | **,** | **MSG2** | **;** | **DISPLAY OUTPUT MESSAGE** |
|  | **MOV** | **AH** | **,** | **09** | **;** |  |
|  | **INT** | **21H** |  |  | **;** |  |
|  |  |  |  |  |  |  |
|  | **MOV** | **AL** | **,** | **BH** | **;** | **DISPLAY MS PART OF THE PRODUCT(X\*Y)** |
|  | **MOV** | **DX** | **,** | **PORTA** | **;** | **ON PORT A** |
|  | **OUT** | **DX** | **,** | **AL** | **;** |  |
|  |  |  |  |  |  |  |
|  | **MOV** | **AH** | **;** | **01H** | **;** | **WAIT FOR THE USED TO PRESS ANYKEY** |
|  | **INT** | **21H** |  |  | **;** |  |
|  |  |  |  |  |  |  |
|  | **MOV** | **AL** | **,** | **BL** | **;** | **DISPLAY LS PART OF THE PRODUCT(X\*Y)** |
|  | **MOV** | **DX** | **,** | **PORTA** | **;** | **ON PORTA** |
|  | **OUT** | **DX** | **,** | **AL** | **;** |  |
|  |  |  |  |  |  |  |
|  | **INT** | **3** |  |  | **;** | **CONTROL BREAK POINT** |
|  |  |  |  |  |  |  |
|  | **END** |  |  |  | **;** | **END OF PROGRAM** |

**OUTPUT**

* **Edit filename.asm**
* **Masm filename.asm;**
* **Link filename;**
* **allowio 0x1080H**
* **Debug filename.exe**

**- g**

**PROVIDE I/P ON PORT B AND PRESS ENTER: PORT B - 0000 0010 -02**

**PROVIDE I/P ON PORT B AND PRESS ENTER: PORT B - 0000 0011 -03**

**SEE X\*Y OUTPUT ON PORT A - 0000 0110 - 06**

**-Q**