|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **5. Design and develop an assembly language program to read the current time and Date from the system and display it in the standard format on the screen.** | | | | | | |
| **LABEL** | **NEMONIC** | **OPERAND (MEMORY/REGISTER)** | | |  | **COMMENTS** |
|  | **.MODEL** | **SMALL** | | | **;** |  |
|  | **.DATA** |  | | | **;** |  |
| **BVAL** | **DB** | **00** | | | **;** |  |
| **DMSG** | **DB** | **'THE CURRENT SYSTEM DATE: $'** | | |  |  |
| **TMSG** | **DB** | **'THE CURRENT SYSTEM TIME: $'** | | | **;** |  |
|  |  |  | | |  |  |
|  | **.CODE** |  |  |  | **;** |  |
|  |  |  |  |  | **;** |  |
| **BYTEDISP** | **MACRO** | **BYT** |  |  | **;** | **MACRO TO DISPLAY HEX(BYTE) IN BCD** |
|  |  |  |  |  | **;** | **ON SCREEN** |
|  | **MOV** | **AL** | **,** | **BYT** | **;** | **SPLIT BYTE VALUE INTO** |
|  | **AAM** |  |  |  | **;** | **UNPACKED BCD** |
|  |  |  |  |  | **;** |  |
|  | **PUSH** | **AX** |  |  | **;** | **SAVE BCD DIGITS** |
|  |  |  |  |  | **;** |  |
|  |  |  |  |  | **;** |  |
|  | **MOV** | **DL** | **,** | **AH** | **;** | **CONVERT MS DIGIT TO** |
|  | **ADD** | **DL** | **,** | **30H** | **;** | **ASCII VALUE AND** |
|  | **MOV** | **AH** | **,** | **02** | **;** | **DISPLAY** |
|  | **INT** | **21H** |  |  | **;** |  |
|  |  |  |  |  | **;** |  |
|  | **POP** | **AX** |  |  | **;** |  |
|  |  |  |  |  | **;** |  |
|  | **MOV** | **DL** | **,** | **AL** | **;** | **COVERT LS DIGIT TO** |
|  | **ADD** | **DL** | **,** | **30H** | **;** | **ASCII VALUE AND** |
|  | **MOV** | **AH** | **,** | **02** | **;** | **DISPLAY** |
|  | **INT** | **21H** |  |  | **;** |  |
|  |  |  |  |  | **;** |  |
|  | **ENDM** |  |  |  | **;** |  |
|  |  |  |  |  | **;** |  |
|  | **MOV** | **AX** | **,** | **@DATA** | **;** | **INITIALIZATION OF** |
|  | **MOV** | **DS** | **,** | **AX** | **;** | **DATA SEGMENT** |
|  |  |  |  |  | **;** |  |
|  |  |  |  |  | **;** |  |
|  | **LEA** | **DX** | **,** | **DMSG** | **;** | **DISPLAY DATE MESSAGE** |
|  | **MOV** | **AH** | **,** | **09** | **;** |  |
|  | **INT** | **21 H** |  |  | **;** |  |
|  |  |  |  |  |  |  |
|  | **MOV** | **AH** | **,** | **2AH** | **;** | **READ SYSTEM DATE** |
|  | **INT** | **21H** |  |  | **;** | **DD:MM : YYYY DL:DH:CX** |
|  |  |  |  |  |  |  |
|  | **MOV** | **BVAL** | **,** | **DL** | **;** | **PRINT DD** |
|  | **BYTEDISP** | **BVAL** |  |  | **;** | **USING MACRO CALL** |
|  |  |  |  |  | **;** |  |
|  |  |  |  |  | **;** |  |
|  | **MOV** | **DL** | **,** | **'/'** | **;** | **PRINT '/'** |
|  | **MOV** | **AH,02** |  |  | **;** |  |
|  | **INT** | **21H** |  |  | **;** |  |
|  |  |  |  |  | **;** |  |
|  | **MOV** | **BVAL** | **,** | **DH** | **;** | **PRINT MM** |
|  | **BYTEDISP** | **BVAL** |  |  | **;** | **USING MACRO CALL** |
|  |  |  |  |  |  |  |
|  | **MOV** | **DL** | **,** | **'/'** | **;** | **PRINT '/'** |
|  | **MOV** | **AH,02** |  |  | **;** |  |
|  | **INT** | **21H** |  |  | **;** |  |
|  |  |  |  |  |  |  |
|  | **ADD** | **CX** | **,** | **0F830H** | **;** | **To negate the effects of 16bit value** |
|  |  |  |  |  |  |  |
|  | **MOV** | **BVAL** | **,** | **CH** | **;** | **PRINT YY** |
|  | **BYTEDISP** | **BVAL** |  |  | **;** | **USING MACRO CALL** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  | **LEA** | **DX** | **,** | **TMSG** | **;** | **DISPLAY MESSAGE** |
|  | **MOV** | **AH** | **,** | **09H** | **;** |  |
|  | **INT** | **21H** |  |  | **;** |  |
|  |  |  |  |  |  |  |
|  | **MOV** | **AH** | **,** | **2CH** | **;** | **READ SYSTEM TIME INTO** |
|  | **INT** | **21H** |  |  | **;** | **HH:MM :SS IN CH:CL:DH** |
|  | **MOV** | **BVAL** | **,** | **CH** | **;** | **PRINT HH** |
|  | **BYTEDISP** | **BVAL** |  |  | **;** | **USING MACRO CALL** |
|  |  |  |  |  | **;** |  |
|  |  |  |  |  | **;** |  |
|  | **MOV** | **DL** | **,** | **':'** | **;** | **PRINT ':'** |
|  | **MOV** | **AH,02** |  |  | **;** |  |
|  | **INT** | **21H** |  |  | **;** |  |
|  |  |  |  |  | **;** |  |
|  |  |  |  |  | **;** |  |
|  | **MOV** | **BVAL** | **,** | **CL** | **;** | **PRINT MM** |
|  | **BYTEDISP** | **BVAL** |  |  | **;** | **USING MACRO CALL** |
|  |  |  |  |  | **;** |  |
|  | **MOV** | **DL** | **,** | **':'** | **;** | **PRINT ':'** |
|  | **MOV** | **AH,02** |  |  | **;** |  |
|  | **INT** | **21H** |  |  | **;** |  |
|  |  |  |  |  |  |  |
|  | **MOV** | **BVAL** | **,** | **DH** | **;** | **PRINT SS** |
|  | **BYTEDISP** | **BVAL** |  |  | **;** | **USING MACRO CALL** |
|  | **MOV** | **AH** | **,** | **4CH** |  |  |
|  | **INT** | **21H** |  |  |  |  |
|  |  |  |  |  |  |  |
|  | **END** |  |  |  | **;** | **END OF PROGRAM** |

**OUTPUT 1**

* **Edit filename.asm**
* **Masm filename.asm;**
* **Link filename;**
* **Debug filename.exe**

**-- G**

**THE CURRENT SYSTEM DATE: 07/03/17**

**THE CURRENT SYSTEM TIME: 15:23:00**

**--Q**