```asm
;This program find the sum of two digits.The prompts are
;displayed on the screen and answer  is also displayed.
;It adds the ASCII code of the digits and then adjusts
;this sum using AAM command.


thestack segment stack
     db 256 dup(?)
thestack ends



thedata segment 'data'
segv db 0         ;Initialize the variable segv to 0.
;This define prompts to be used later in the program.
stg1 byte 0DH,0AH,0AH,"Enter first digit(0-9): ","$"
stg2 byte 0DH,0AH,0AH,"Enter second digit: ","$"
stg3 byte 0DH,0AH,0AH,"The sum of above digits is = ","$"
thedata ends



thecode segment 'code'
    ASSUME CS:thecode,DS:thedata

    start PROC FAR              ;Procedure starts.
        MOV AX,seg segv         ;Segment address of data is stored
        MOV DS,AX               ;in AX and is moved into DS.

        MOV AH,09H              ;This diplays the prompt i.e.stg1
        MOV DX,OFFSET stg1      ;on the screen using DOS function
        INT 21H                 ;call 09H.

        MOV AH,01H              ;This reads and displays the first
        INT 21H                 ;number. It stores its ASCII code in
        MOV BL,AL               ;AL which is moved into BL.

        MOV AH,09H              ;This display the prompt for the second
        MOV DX,OFFSET stg2      ;number on the screen.
        INT 21H

        MOV AH,01H              ;The ASCII code of second number is
        INT 21H                 ;added into BL which already has the
        ADD BL,AL               ;ASCII code of first number.

        MOV AH,09H              ;This display the message for the sum
        MOV DX,OFFSET stg3      ;of the above two digits.
        INT 21H

        MOV AL,BL               ;Sum of ASCII codes is moved into AL.
        SUB AL,60H              ;Convrt ASCII sum into binary.
        XOR AH,AH               ;Make AH 0.
        AAM                     ;Convrt binary sum into unpacked BCD.
        ADD AH,20H              ;20H is ASCII code of space.

    ;Now we compares higher order digit of the sum with 0(AH will
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;be 20H for 0) and if it is 0 we jump directly to procedure
;start1 to print space, otherwise we add 10H more to make it
;ASCII code of the first digit.


        CMP AH,20H
        JE start1
        ADD AH,10H

    start1:

        PUSH AX                      ;Saves AX into stack segment.

        MOV DL,AH                    ;First digit of the sum is displayed by
        MOV AH,06H                   ;moving its ASCII code into DL and
        INT 21H                      ;using DOS function call 06H.

        POP AX                       ;Retrieve AX.

        ADD AL,30H                   ;Convert from BCD to its ASCII code.
        MOV DL,AL                    ;Second digit is displayed in same
        MOV AH,06H                   ;method.
        INT 21H

        MOV AH,4CH                   ;DOS function call 4CH is used to
        INT 21H                      ;terminate a process

        ret
    start endp

thecode ends
end start
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