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.MODEL SMALL
.STACK 100H
.DATA
    MSGA DB 'Enter the Length: $'
    MSGB DB 'Fibonacci series: $'
    SPA DB ' $'
    TEMP DW ?
    A DW ?
    B DW ?
    LEN DW ?

.CODE
MAIN PROC
    MOV AX,@DATA
    MOV DS,AX

    LEA DX,MSGA                      ;Print 'Enter the Length: $'
    MOV AH,9
    INT 21H

GET_INPUT:
    MOV AH,1
    MOV BX,0
    INT 21H

    CMP AL,0DH
    JE FIBONACCI_SERIES              ;If Enter

    INNER_LOOP_1:
        MOV AH,0                    ;Use full 16 bits of AX
        SUB AX,48

        MOV TEMP,AX
        MOV AX,10
        MUL BX                       ;AX = AX*BX
        MOV BX,AX
        ADD BX,TEMP

    MOV AH,1                        ;Input new digit
    INT 21H
    CMP AL,0DH
    JNE INNER_LOOP_1                ;If Enter

    LEA DX,MSGB                      ;Print 'Fibonacci series: $'
    MOV AH,9
    INT 21H

FIBONACCI_SERIES:
    MOV LEN,BX
    CMP LEN,0
    JE END_PROC

    MOV A,0
    MOV B,1

    MOV DL,0                        ;Print fibonacci first number
    ADD DL,48
    MOV AH,2
    INT 21H

    LEA DX,SPA                      ;Print Space
    MOV AH,9
    INT 21H

    DEC LEN
    CMP LEN,0

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    JE END_PROC

    MOV DL,1                ;Print fibonacci second number
    ADD DL,48
    MOV AH,2
    INT 21H

    LEA DX,SPA              ;Print Space
    MOV AH,9
    INT 21H

    DEC LEN
    JMP NEXT_NUMBER

END_PROC:
    MOV AH,4CH
    INT 21H

NEXT_NUMBER:
    CMP LEN,0
    JE END_PROC

    MOV AX,A
    MOV BX,B
    ADD AX,BX
    MOV DX,AX                ;Fibonacci number is in DX
    MOV AX,BX
    MOV BX,DX

    MOV A,AX
    MOV B,BX

    MOV CX,0
    MOV AX,DX                ;Prepear for multi digit printing
    MOV BX,10

STOR_MUL_DIGIT:
    MOV DX,0
    DIV BX
    PUSH DX                ;Stor each digit in stack
    INC CX
    CMP AX,0
    JNE STOR_MUL_DIGIT

PRINT_FROM_STACK:
    MOV AH,2
    POP DX                ;print each digit from stack
    ADD DL,48
    INT 21H
    LOOP PRINT_FROM_STACK

    DEC LEN
    LEA DX,SPA              ;Print Space
    MOV AH,9
    INT 21H
    JMP NEXT_NUMBER

    MOV AH,4CH
    INT 21H

MAIN ENDP
END MAIN

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