BANGLADESH UNIVERSITY OF ENGINEERING AND TECHNOLOGY

Department of Electrical and Electronic Engineering

Course No. : EEE 415

Course Title: Microprocessor and Embedded Systems

Extra Assignment

Fibnacci Series with Recursive Procedure

Name: Mir Sayeed Mohammad

ID: 1606003

Level: 4

Term: 1

Section: A

Submission Deadline: 30 - 07 -2021

Code:

```
; code for fibonacci series generation using recursive procedure

CODE SEGMENT
   ASSUME CS:CODE, DS:CODE

   ; ---------------------- MAIN ---------------------- ;

   XOR AX, AX       ; AX used as temp to store previous f2
   MOV BX, 4        ; BX used as index for word array
                    ; starting at 2nd position
   MOV CX, 0        ; used to store new f1
   MOV DX, 1        ; new f2

   CALL FIB

   HLT

   ; ---------------------- DATA ---------------------- ;

   n   DW 15        ; variable indicating array length (no use)
   n_2 DW 30        ; variable used to compare location reached in word array

   ARR DW 0, 1, 13 DUP(0)       ; word array to store fibonacci

   ; ---------------------- PROC ---------------------- ;

   FIB PROC

      MOV AX, DX                ; temp = f2
      ADD DX, CX                ; f2 = f1 + f2
      MOV CX, AX                ; f1 = f2

      MOV ARR[BX], DX           ; store new f2 in array
      ADD BX, 2                 ; increase array index
      CMP BX, n_2               ; check if time to return

      JE RETURN                 ; return if done
      CALL FIB                  ; else call again

      RETURN:
      RET

   FIB ENDP
CODE ENDS
END
```

Output:

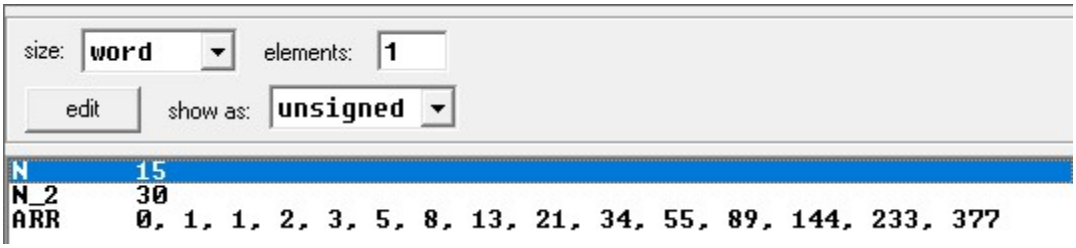

Fig: Output Fibonacci series for n=15