**Practical - 23**

**Aim:** Write an assembly code to find cube of given variable. The program should have two subroutines: S (find number square) and C (find number cube). Main program should call for C and C should call for S to complete given task.

**Description of instructions used:**

**Subroutines:**  a subroutine is a sequence of program instructions that perform a specific task, packaged as a unit. This unit can then be used in programs wherever that particular task have to be performed. A subroutine is often coded so that it can be started (called) several times and from several places during one execution of the program, including from other subroutines, and then branch back (return) to the next instruction after the call, once the subroutine’s task is done. It is implemented by using Call and Return instructions.

**DB** **(DEFINE BYTE):** The **DB** directive is used to declare a byte type variable, or a set aside one or more storage locations of type byte in memory.

**SQUARE PROC NEAR:** This identifies the start of a procedure named SQUARE and tells the assembler that the procedure is far (in a segment with different name from the one that contains the instructions which calls the procedure). The PROC directive is used with the ENDP directive to “bracket” a procedure.

* **NEAR:** the procedure resides in the same code segment. (Local)
* **FAR:** resides at any location in the memory.

**RET:** The **RET** instruction stands for return. This instruction is used at the end of the procedures or the subprograms. This instruction transfers the execution to the caller program.

**CALL:** The **CALL instruction** is used whenever we need to make a call to some procedure or a subprogram.

**Code:**

DATA SEGMENT

NO DB 2

DATA ENDS

CODE SEGMENT

SQUARE PROC NEAR

ASSUME CS:CODE

MOV AX,0000

MOV AL,BL

MUL BL

MOV CX,AX

MUL BL

MOV BX,AX

RET

SQUARE ENDP

ASSUME DS:DATA,CS:CODE

START:

MOV AX,DATA

MOV DS,AX

MOV BL,NO

CALL SQUARE

MOV BL,00H

MOV AH,4CH

INT 21H

CODE ENDS

END START

**Output:**

SQUARE

CUBE

