

Each personal computer has a microprocessor that manages the computer's arithmetical, logical, and control activities. Each family of processors has its own set of instructions for handling various operations such as getting input from keyboard, displaying information on screen and performing various other jobs. These sets of instructions are called 'machine language instructions'.

Exp6(Assembly Language program for 8 bit
addition/subtraction/multiplication/division)

```
.model small
```

```
.stack 100h
```

```
.data
```

```
a db 09h
```

```
b db 02h
```

```
.code
```

```
mov ax,@data
```

```
mov ds,ax
```

```
mov al,a
```

```
mov bl,b
```

```
add al,bl
```

```
mov cl,al
```

```
int 21h
```

```
mov ah,4ch
```

```
int 3h
```

```
end
```

Exp7(Assembly Language program for 16 bit addition/subtraction)

```
.model small
.stack 100h
.data
a db 0019h
b db 0002h
.code
mov ax,@data
mov ds,ax
mov al,a

mov bl,b
add al,bl
mov cl,al
int 21h
mov ah,4ch
int 3h

end
```

Exp8(Aim-Program for 8 bit BCD Addition)

Binary Coded Decimal-process for converting decimal numbers into their binary equivalents.

DAA-Decimal Adjust After Addition

```
.model small
.data
a dw 09H
b dw 02H
c dw ?
car db ?
.code
mov ax,@data
mov ds,ax

mov ax,a
mov bx,b
add al,bl
daa
int 21H
End
```

Exp9(Program for 16 bit BCD Addition
BCD

.model small

.data

a dw 0099H

b dw 0020H

c dw ?

car db ?

.code

mov ax,@data

mov ds,ax

mov ax,a

mov bx,b

add al,bl

daa

int 21H

End

Exp10(Program to Convert two digit Packed BCD to Unpacked BCD)

There is no support for multiplication and division in packed BCD representation.

AAM-Adjust After Multiplication

```
.model small
.data
num db 07h
Result dw ?
.code
mov ax,@data
mov ds,ax
mov al,05
mov bl,num
mul bl
aam
mov Result,ax
End
```

Exp11(Program to find even and odd numbers from a given list number)

.model small

.data

a db 08h

.code

mov ax,@data

mov ds,ax

mov al,a

and al,01h

mov al,00h

jz over

mov al,01h

over: mov cl,01h

mov ah,4ch

int 21h

End

Exp12(Check whether a given string is a palindrome or not)

```
.model small
.data
str dB "SIDIS"
str1 dB 5 dup(?)
pal dB 0
count dW 5
.code
start: MOV AX,@data
MOV DS,AX
MOV ES, AX

MOV CX, count
LEA SI,str
LEA DI,str1
ADD DI,CX
DEC DI
back: CLD
LODSB
STD
STOSB
LOOP back
LEA SI,str

LEA DI,str1
MOV CX,count
CMPSB
JNZ over
MOV bl,01H
over: MOV AH,4CH
INT 21H
end start
```

Exp13(Interfacing Seven Segment Display)

```
.model small
.data
lookup db 3Fh,06h,5Bh,4Fh,64H,6Dh,7Dh,07h,7Fh,67h
key db 04h
.code
mov ax,@data
mov ds,ax
mov bx,offset lookup
mov al,key
xlat
mov ah,4cH
int 21H
end
```