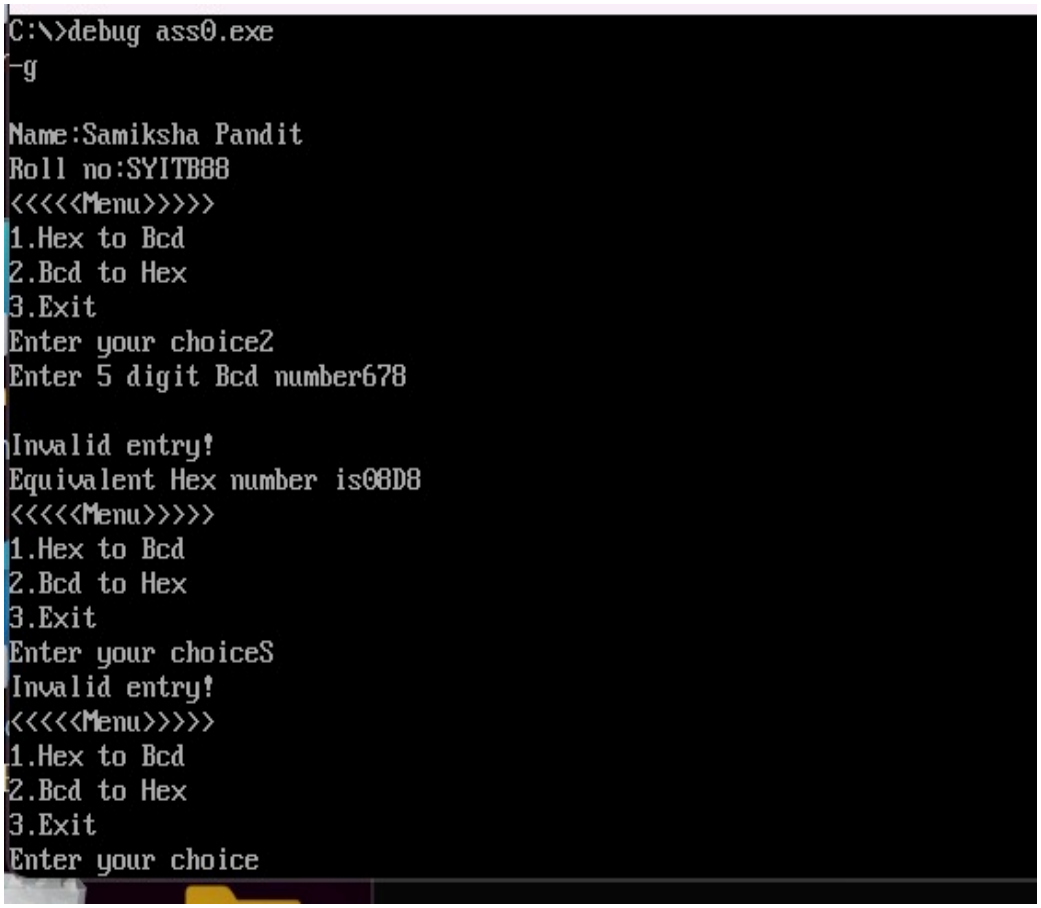
```
.model small
disp macro msg
mov ah,09h
lea dx,msg
int 21h
endm
.stack 100h
.data
msg01 db 10,13,'Name:Samiksha Pandit$'
msg02 db 10,13,'Roll no:SYITB88$'
msg1 db 10,13,'<<<<<Menu>>>>>$'
msg2 db 10,13,'1.Hex to Bcd$'
msg3 db 10,13,'2.Bcd to Hex$'
msg31 db 10,13,'3.Exit$'
msg4 db 10,13,'Enter your choice$'
msg5 db 10,13,'Enter 4 digit hex number$'
msg6 db 10,13,'Equivalent Bcd number is$'
msg7 db 10,13,'Enter 5 digit Bcd number$'
msg8 db 10,13,'Equivalent Hex number is$'
msg9 db 10,13,'Invalid entry!$'
op db 10 dup(?)
.code
main: mov ax,@data
 mov ds,ax
disp msg01
disp msg02
;------------------
menu: disp msg1
 disp msg2
 disp msg3
 disp msg31
 disp msg4
 mov ah,01h
 int 21h
 cmp al,31h
 je hex
 cmp al,32h
 je bcd
 cmp al,33h
 je exit
 disp msg9
 jmp menu
;------hex messages-------
hex: disp msg5
 call inputp
 disp msg6
 call hexp
 jmp menu
;------bcd----------------
bcd: disp msg7
 call inp1
 call bcdp
 disp msg8
 call disp1
 jmp menu
;------exit---------------
exit: mov ah,4ch
 int 21h
;-------------------------input proc to accept 4 digit hex no from user-----
inputp proc
 mov cx,0404h
 mov ax,0000
 mov bx,0000h
```

```
in1: mov ah,01h
 int 21h
 cmp al,30h
 jb invalid
 cmp al,39h
 jg a1
 sub al,30h
 jmp insert
a1: cmp al,41h
 jb invalid
 cmp al,46h
 jg a2
 sub al,37h
 jmp insert
a2: cmp al,61h
 jb invalid
 cmp al,66h
 jg invalid
 sub al,57h
 jmp insert
insert:
 shl bx,cl
 add bl,al
 dec ch
 jnz in1
 ret
;--------invalid choice------
invalid:
 disp msg9
 jmp menu
inputp endp
;-----------hex proc starts from here----
hexp proc
 mov ax,bx
 mov bx,0ah
 mov cl,00
b1: mov dx,00h
 div bx
 push dx
 inc cx
 cmp ax,00h
 jne b1
b2: pop dx
 add dl,30h
 mov ah,02h
 int 21h
 dec cl
 jnz b2
 ret
hexp endp
;--------------input proc to accept bcd no-----
inp1 proc
 lea si,op
 mov cl,05
c1:
 mov ah,01h
 int 21h
 cmp al,30h
 jb invalid1
 cmp al,39h
 jg invalid1
 sub al,30h
 mov [si],al
```

```
 inc si
 dec cl
 jnz c1
 ret
invalid1:
 disp msg9
c2: ret
inp1 endp
;------bcd procedure starts here-----
bcdp proc
 mov bx,0000h
 mov cx,0000h
 mov dx,0000h
 lea si,op
 mov ax,2710h
 mov bl,[si]
 mul bx
 add cx,ax
 inc si
 mov ax,3E8h
 mov bl,[si]
 mul bx
 add cx,ax
 inc si
 mov ax,64h
 mov bl,[si]
 mul bx
 add cx,ax
 inc si
 mov ax,0ah
 mov bl,[si]
 mul bx
 add cx,ax
 inc si
 mov ax,1
 mov bl,[si]
 mul bx
 add cx,ax
 ret
bcdp endp
;-----------------display code to display 4 digit hex no----
disp1 proc
 mov dx,0000h
 mov bx,cx
 mov cl,04h
 mov ch,04h
d2: rol bx,cl
 mov dx,00h
 mov dl,bl
 and dl,0fh
 cmp dl,09h
 jbe d1
 add dl,07h
d1: add dl,30h
 mov ah,02h
 int 21h
 inc si
 dec ch
 jnz d2
 ret
disp1 endp
end
;----------------
```

OUTPUT:


C:\>debug ass0.exe
-g
Name:Samiksha Pandit
Roll no:SYITB88
<<<<<Menu>>>>>
1.Hex to Bcd
2.Bcd to Hex
3.Exit
Enter your choice2
Enter 5 digit Bcd number678
Invalid entry!
Equivalent Hex number is08D8
<<<<<Menu>>>>>
1.Hex to Bcd
2.Bcd to Hex
3.Exit
Enter your choiceS
Invalid entry!
<<<<<Menu>>>>>
1.Hex to Bcd
2.Bcd to Hex
3.Exit
Enter your choice