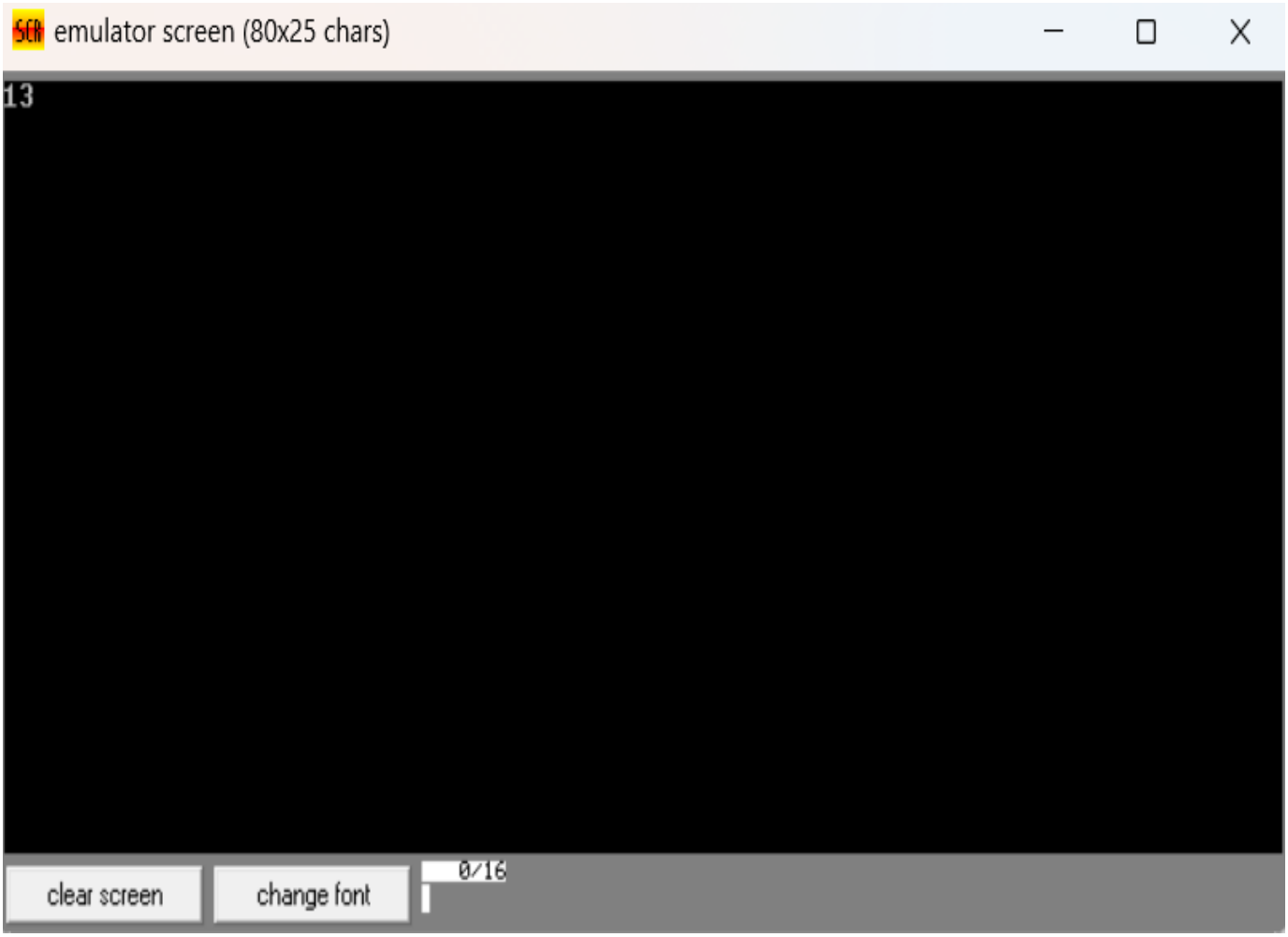
Problem Statement:-1

1). Write an assembly language program to perform addition of 8-bit data.

Code:-

```
org 100h

num1 db 25h
num2 db 13h

start:
   mov al, [num1]
   add al, [num2]
   mov bl, al
   call print_hex
   mov ah, 4Ch
   int 21h

print_hex:
   mov ah, al
   and al, 0F0h
   shr al, 4
   add al, '0'
   cmp al, '9'
   jbe print_hex_low
   add al, 7

print_hex_low:
   mov dl, al
   mov ah, 02h
   int 21h
   mov al, bl
   and al, 0Fh
   add al, '0'
   cmp al, '9'
   jbe print_hex_done
   add al, 7

print_hex_done:
   mov dl, al
   mov ah, 02h
   int 21h
   ret
```

Output:-


emulator screen (80x25 chars)
13
clear screen
change font
0/16

Problem Statement:-2

2). Write a program in assembly language to perform addition of 16-bit data.

Code:-

```
org 100h

num1 dw 1234h
num2 dw 5678h

start:
   mov ax, [num1]
   add ax, [num2]
   mov bx, ax
   mov ah, 0
   mov al, ah
   call print_hex
   mov al, bl
   call print_hex
   mov ah, 4Ch
   int 21h

print_hex:
   mov ah, al
   and al, 0F0h
   shr al, 4
   add al, '0'
   cmp al, '9'
   jbe print_hex_low
   add al, 7

print_hex_low:
   mov dl, al
   mov ah, 02h
   int 21h
   mov al, ah
   and al, 0Fh
   add al, '0'
   cmp al, '9'
   jbe print_hex_done
   add al, 7

print_hex_done:
   mov dl, al
```

```
mov ah, 02h
int 21h
ret
```

Output:-