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Run the first program

Step1:

Open GNU Sim 8085 this window will open.



Step2:

Start writing the code after start: nop

- mvi a, 12h
- mvi b, 18h
- add b



Step 3:

Click on reset and reset all the registers by clicking on reset all.



Step 4:

Click on the highlighted button to execute the code



Step 5:

Name and save the file.



Step 6:

After this you will see the result of the instructions in the respective registers as seen in the image.



Practise problems

Write and execute the following codes as mentioned in step 2.

Prob 01: Addition of two numbers

```
lda var1
mov b,a
lda var2
add b
sta var3
hlt
var1: db 04h
var2: db 09h
var3: db 00h
```

Prob 02: To add n consecutive numbers

```
lxi h,var
mov c,m
mvi b,01h
mvi e,00h
mvi a,00h
back: add b
jnc skip
inr e
skip: inr b
dcr c
jnz back
sta result
mov a,e
sta carry
hlt
var: db 0Ah
result: db 00h
carry: db 00h
```

Prob 03: Count the number of 1's.

```
lxi h,var
mvi c,08h;counter
mov a,m
mvi b,00h;count number of 1's
back: rar
jnc skip
inc b

skip: dcr c
jnz back
mov a,b
sta result
hlt
var: db 19h
result: db 00h
```

prob 04: Multiply two 8 bit numbers without shifting.

```
lxi h,
var; multiplicand
```

```
mvi d,00h
mov e,m
inx h
mov c,m; multiplier as counter for repeated addition
mvi h,00h
mvi l,00h
back: dad d
dcr c
jnz back
shld result
hlt
var: db 08h
var2: db 07h
result: db 00h
result2: db 00h
```

Prob 05: Addition of two numbers using lxi.

```
lxi h,var1
mov a,m
inx h
mov b,m
sub b
inx h
```

```
mov m,a  
hlt  
var1: db 08h  
var2: db 03h  
var3: db 00h
```

Prob 06: Division of 8bit number.

```
lhld var;dividend  
lda var2;divisor
```

```
mov b,a  
mvi c,08h  
back: dad h  
mov a,h  
sub b  
jc forward  
mov h,a  
inr l  
forward: dcr c  
jnz back  
shld var3  
hlt  
var: db 0ch  
var1: db 00h
```

```
var2: db 05h  
var3: db 00h  
var4: db 00h
```

Prob 07: To find the smallest and largest number from the given series.

```
lxi h,var  
mov c,m ;counter  
inx h  
dcr c  
mov b,m;for largest  
mov d,m;for smallest  
mov a,m  
back: cmp b  
jc ahead  
mov b,a  
ahead: cmp d  
jnc ahead2  
mov d,a  
ahead2: inx h  
mov a,m  
dcr c  
jnz back  
inx h
```

```
mov m,d  
inx h  
mov m,b  
hlt  
var: db 05h  
var1: db 02h  
var2: db 02h  
var3: db 07h  
var4: db 0Ah  
var5: db 0Ah  
smallest: db 00h  
largest: db 00h
```