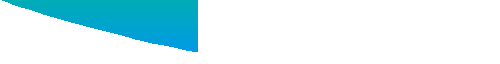
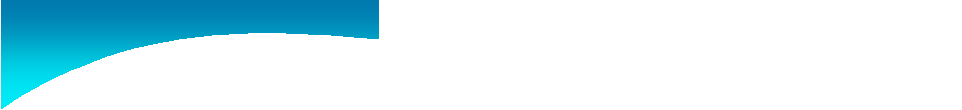


TOPIC- Find whether an input number N is divisible by

31 or not. It should read the number “N” from the user



C CODE

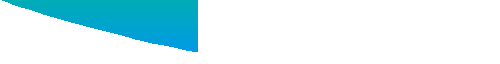
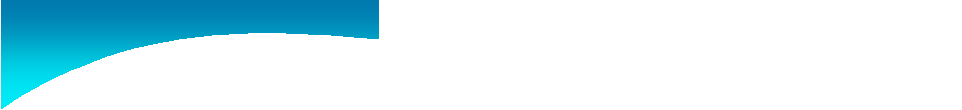
Divisibility of a number by 31 is explained as follows:-

Example:- 837

-> checking divisibility 83-3\*7

-> it means tree times of unit place value subtracted from the rest of given number , it goes repeated till zero comes

-> if we get zero then number is divisible by 31 otherwise not divisible



//GROUP ID 69

//DHARMVEER DHAR DVIVEDI [15114025]

//SATYENDRA KUMAR BANJARE [15114064]

//C CODE :- Divisibility ckeck of a number by 31

C

C

O

D

#include<stdio.h>

int main(void)

{

int a;

scanf("%d",&a); E

while(a>0){

int b=a%10;

a/=10;

b\*=3;

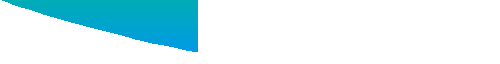
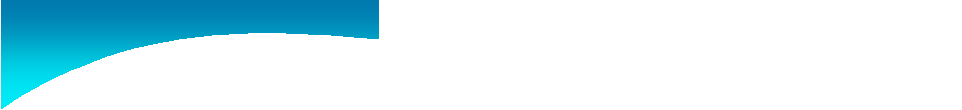
a-=b;

}

if(a==0)printf("Number is Divisible by 31");

else printf("Number is not Divisible by 31");

}



//GROUP ID 69

//DHARMVEER DHAR DVIVEDI [15114025]

//SATYENDRA KUMAR BANJARE [15114064]

//C CODE## .sfile :- Divisibility ckeck of a number by 31

GAS LISTING C:\Users\SATYEN~1.BAN\AppData\Local\Temp\ccCaiyid.s page 1

|  |  |  |
| --- | --- | --- |
| 1 |  | .file "divisibility.c" |
| 3 |  | .section .rdata,"dr" |
| 4 | LC0: |  |

5 0000 256400 .ascii "%d\0"

6 LC1:

7 0003 4E756D62 .ascii "Number is Divisible by 31\0"

7 65722069

7 73204469

7 76697369

7 626C6520

8 LC2:

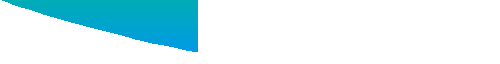
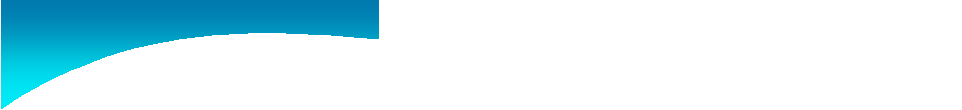
9 001d 4E756D62 .ascii "Number is not Divisible by 31\0"

9 65722069

9 73206E6F

9 74204469

9 76697369



|  |  |  |  |
| --- | --- | --- | --- |
| 10 003b 00 |  | .text |  |
| 11 | .globl | \_main |
| 13 \_main: |  |  |
| 14 0000 55 |  | pushl | %ebp |
| 15 0001 89E5 |  | movl | %esp, %ebp |
| 16 0003 83E4F0 |  | andl | $-16, %esp |
| 17 0006 83EC20 |  | subl | $32, %esp |
| 18 0009 E8000000 |  | call | main |
| 18 00 |  |  |  |
| 19 000e 8D442418 |  | leal | 24(%esp), %eax |
| 20 0012 89442404 |  | movl | %eax, 4(%esp) |
| 21 0016 C7042400 |  | movl | $LC0, (%esp) |

21 000000

22 001d E8000000 call \_scanf

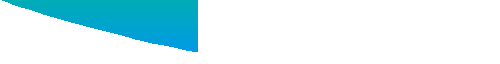
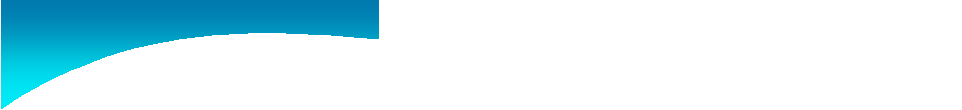
22 00

23 0022 EB69 jmp L2

24 L3:

|  |  |  |
| --- | --- | --- |
| 25 0024 8B4C2418 | movl | 24(%esp), %ecx |
| 26 0028 BA676666 | movl | $1717986919, %edx |
| 26 66 |  |  |
| 27 002d 89C8 | movl | %ecx, %eax |
| 28 002f F7EA | imull | %edx |
| 29 0031 C1FA02 | sarl | $2, %edx |
| 30 0034 89C8 | movl | %ecx, %eax |
| 31 0036 C1F81F | sarl | $31, %eax |
| 32 0039 29C2 | subl | %eax, %edx |
| 33 003b 89D0 | movl | %edx, %eax |
| 34 003d 8944241C | movl | %eax, 28(%esp) |
| 35 0041 8B54241C | movl | 28(%esp), |

36 0045 89D0 movl %edx, %eax



37 0047 C1E002 sall $2, %eax

38 004a 01D0 addl %edx, %eax

39 004c 01C0 addl %eax, %eax

40 004e 29C1 subl %eax, %ecx

41 0050 89C8 movl %ecx, %eax

42 0052 8944241C movl %eax, 28(%esp)

43 0056 8B4C2418 movl 24(%esp), %ecx

44 005a BA676666 movl $1717986919, %edx

44 66

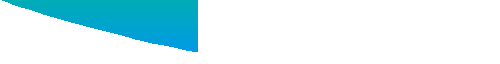
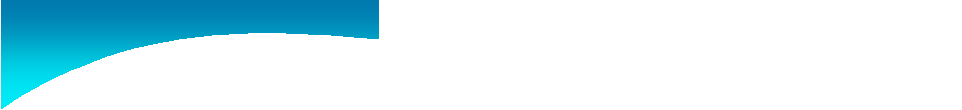
45 005f 89C8 movl %ecx, %eax

46 0061 F7EA imull %edx

GAS LISTING C:\Users\SATYEN~1.BAN\AppData\Local\Temp\ccCaiyid.s

page 2

|  |  |  |
| --- | --- | --- |
| 47 0063 C1FA02 | sarl | $2, %edx |
| 48 0066 89C8 | movl | %ecx, %eax |
| 49 0068 C1F81F | sarl | $31, %eax |
| 50 006b 29C2 | subl | %eax, %edx |
| 51 006d 89D0 | movl | %edx, %eax |
| 52 006f 89442418 | movl | %eax, 24(%esp) |
| 53 0073 8B54241C | movl | 28(%esp), %edx |
| 54 0077 89D0 | movl | %edx, %eax |
| 55 0079 01C0 | addl | %eax, %eax |
| 56 007b 01D0 | addl | %edx, %eax |
| 57 007d 8944241C | movl | %eax, 28(%esp) |
| 58 0081 8B442418 | movl | 24(%esp), %eax |
| 59 0085 2B44241C | subl | 28(%esp), %eax |
| 60 0089 89442418 | movl | %eax, 24(%esp) |
| 61 L2: |  |  |
| 62 008d 8B442418 | movl | 24(%esp), %eax |
| 63 0091 85C0 | testl | %eax, %eax |
| 64 0093 7F8F | jg | L3 |
| 65 0095 8B442418 |  |  |



ASSEMBELY LANGUAGE

Data definition starts with.data directive

Code definition starts with.text directive

In main,

li $v0,4 gets the input from user.Then li $v0 4 takes

second input from user

which will be 31.Then it will check whether the number is divisible by 31 or not.

#GROUP ID 69

#DHARMVEER DHAR DWIVEDI [15114025]

#SATYENDRA KUMAR BANJARE [15114064]

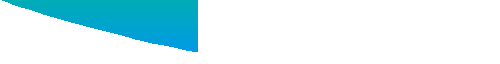
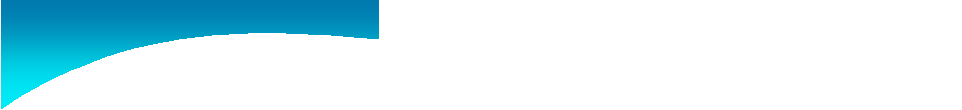
#Assembly code:-Checking the number divisible by

31

.data

message0: .asciiz "Enter the number \n" message1: .asciiz "Number is divisible by 31 \n" message2: .asciiz "Number is not divisible by 31 \n"

.text



main:

#print Enter the number

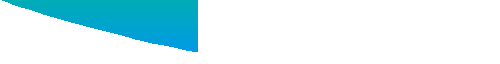
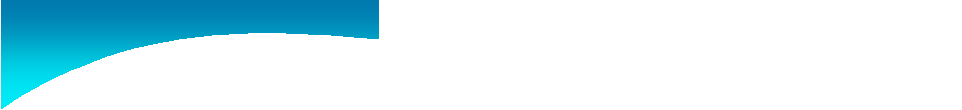
li $v0,4

la $a0,message0

syscall

ASSEMBLY CODE

#taking input from user li $v0,5



syscall

#store the no in t1

move $t1,$v0

#assign t5=41 addi $t5,$zero,41

#assign t6=10 addi $t6,$zero,10 addi $t7,$zero,3

while:

blt $t1,1,exit

div $t1,$t6

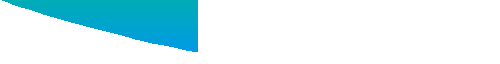
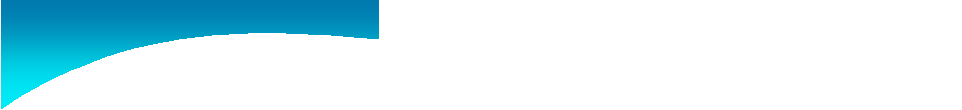
mf hi $t4 #store the remainder in t4 div $t1,$t1,$t6 #t1=t1/10

mul $t3,$t4,$t7 #t3=3\*t4

sub $t1,$t1,$t3 #t1=t1-t3

j while

exit:



beq $t1,0,divisible

bne $t1,0,notdivisible

notdivisible:

li $v0,4

la $a0,message2

syscall

li $v0,10 syscall

divisible:

li $v0,4

la $a0,message1

syscall

li $v0,10 syscall

