**Conversion of C Program to Assembly Language**

**LAB # 08**



**Fall 2022**

**CSE304L Computer Organization & Architecture**

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**Qno1:**

#include <stdio.h>

int main()

{

int n, count;

unsigned long long int factorial=1;

printf("Please Enter integer: ");

scanf("%d",&n);

if ( n< 0)

printf("Fpr negative number factorial doesnot exist .");

else

{

for(count=1;count<=n;++count) /\* for loop terminates if count>n \*/

{

factorial\*=count; /\* factorial=factorial\*count \*/

}

printf(" So the Factorial = %lu",factorial);

}

return 0;

}

**Answer**

.data

task: .asciiz "\tShow the fictrial

\n"

name: .asciiz "By:\n Dani\n\n"

enterf: .asciiz "Enter some number to find its factorial :"

rfact: .asciiz "\nFactorial is " #string to be printed

.text

main:

li $v0, 4

# system call code for print\_str

la $a0, task # address of string to print

syscall 36

li $v0, 4

# system call code for print\_str

la $a0, name # address of string to print

syscall

## Get the number from user, put into $t0

li $v0, 4 # load syscall print\_string into $v0

la $a0,enterf # prepare msg to print

syscall # make the syscall

li $v0, 5 # load syscall read\_int into $v0

syscall # make the syscall

move $s1, $v0 # store the result of syscall into $t0

li $s0,1

li $s2,1

addi $s1,$s1,1

loop: slt $t0,$s0,$s1

beq $t0,$0,bottom

mul $s2,$s0,$s2

addi $s0,1

b loop

bottom:

li $v0, 4 # load syscall print\_string into $v0

la $a0,rfact # prepare msg to print

syscall # make the syscall

li $v0, 1 # load syscall print\_int into $v0

move $a0, $s2 # prepare t2 to print

syscall

li $v0, 10

# syscall code 10 is for exit.

syscall

# make the syscall.

**Task 2: Displaying Fibonacci sequence up to nth term where n is entered by user.**

#include <stdio.h>

int main()

{

int count, n, t1=0, t2=1, display=0;

printf("Please enter number of terms: ");

scanf("%d",&n);

printf("Fibonacci Series: %d+%d+", t1, t2;

count=2;

while (count<n)

{37

display=t1+t2;

t1=t2;

t2=display;

++count;

printf("%d+",display);

}

return 0;

}

**Answer:**

.

.data

task: .asciiz "\ Display fibanocci series upto number

entered by user. \n"

name: .asciiz "By:\n Danyal \n\n"

str1: .asciiz "Please input the number for limit of series: "

str2: .asciiz "Fabanocci series : \n"

main

.text

main:

li $v0, 4

la $a0, task # address of string to print

syscall

li $v0, 4

la $a0, name # address of string to print

syscall

la $a0, str1

li $v0, 4

syscall

li $v0, 5

syscall

.

move $t0, $v0

la $a0, str2

li $v0, 4

syscall

li $t1,0

li $t2,1

li $s0,2

li $s1,0

move $a0, $t1

li $v0, 1

syscall

again: li $a0,' '

li $v0,11

syscall

move $a0, $t2

li $v0, 1

syscall

slt $s2,$s0,$t0

beq $s2,$0,exit

add $s1,$t1,$t2

add $t1,$t2,$0

add $t2,$s1,$0

addi $s0,$s0,1

b again

exit

.

li $v0, 10

syscall