**Experiment :2 b**

SIMPLE CALCULATOR

**ALGORITHM**

Step 1: Start

Step 2: Declare and define functions add, subtract, multiply and divide   
Step 3: Declare variables num1, num2, ans and c.

Step 4: Read values num1, num2 and arithmetic operation.

Step 5: Read arithmetic operation.  
 case ‘+’ – call “add” function using pointers which returns (ans=num1+num2)

case ‘-’ – call “substract” function using pointers which returns (ans=num1-num2)

case ‘\*’ – call “multiply” function using pointers which returns (ans=num1\*num2)

case ‘/’ – call “divide” function using pointers which return (ans=num1/num2)

Step 6: Display result

Step 7: Stop

**Program**

#include<stdio.h>

//function declarations

void display(float s);

float add(int x,int y);

float subtract(int x,int y);

float multiply(int x,int y);

float divide(int x,int y);

int main()

{

int a,b;

float ans;

unsigned char c;

while(1)

{

printf("\nenter the two numbers:");//Input two numbers

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

printf("enter the arithmetic operation (+,-,\*,/) \t\t and e for exit \n:");//Input operation

scanf(" %c",&c);

float (\*ptr\_op)(int,int);//Declaration of the function pointer for operation

void (\*ptr\_disp)(float);//Declaration of the function pointer for display

ptr\_disp=display;

switch(c)//switch to assign function address to the function pointer

{

case '+':ptr\_op=add;

break;

case '-':ptr\_op=subtract;

break;

case '\*':ptr\_op=multiply;

break;

case '/':ptr\_op=divide;

break;

default:printf("invalid operator");

}

ans=(\*ptr\_op)(a,b);//call function by function pointer to calculate the answer

(\*ptr\_disp)(ans);//call function by function pointer to display result answer

}

return 0;

}

void display(float s)//function to display result Ans

{

printf("Ans: %.2f \n",s);

}

float add(int x,int y)//function to add two numbers

{

return x+y;

}

float subtract(int x, int y)//function to subtract two numbers

{

return x-y;

}

float multiply(int x,int y)//function to multiply two numbers

{

return x\*y;

}

float divide(int x,int y)//function to divide one number by other

{

if(y!=0) return (float)x/y;

else return 0.0;

}

**Sample Input Output**

