These are the listed programs mentioned for first internal lab exam. Come to lab exam -your rough record all programs must be signed. Exam on 20/12/22  
  
Part A:  
1) C program to find largest of 3 numbers  
2) C program to display n Fibonacci series.  
3) C program to find the tax rate for the gross salary of an employ based on condition.  
4) Write a C program to reverse a number and find the sum of individual digits. Also check for palindrome.  
  
  
Part B:  
  
1) Write a C program to accept n numbers into an array and to find the sum and average of those numbers.  
2) Write a C program to accept a list of elements and to find the maximum and minimum elements along with their positions.  
3) Write a C program to accept a matrix and find the transpose of the matrix. Also find whether the given matrix is symmetric or not.

# Part A:

1. C program to find largest of 3 numbers.

#include<stdio.h>

void main() {

int a, b, c, large;

clrscr();

printf("Enter 3 numbers: ");

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

large = a;

if (b > large)

large = b;

if (c > large)

large = c;

printf("Largest Number is: %d", large);

getch();

}

*Output:*

*Enter 3 numbers: 5 4 6*

*Largest Number is: 6*

2) C program to display n Fibonacci series.

#include<stdio.h>

#include<conio.h>

void main() {

int n, i = 0, fib1 = 0, fib2 = 1, fib3;

clrscr();

printf("Enter the upper limit: ");

scanf("%d", &n);

printf("Fibonacci numbers are:\n");

while (i<n){

if (i == 0)

printf("%d\n", fib1);

else if (i == 1) {

printf("%d\n", fib2);

} else {

fib3 = fib1 + fib2;

fib1 = fib2;

fib2 = fib3;

printf("%d\n", fib3);

}

i++;

}

getch();

}

*Output:*

*Enter the upper limit: 6*

*Fibonacci numbers are:*

*0*

*1*

*1*

*2*

*3*

*5*

3) C program to find the tax rate for the gross salary of an employ based on condition.

#include<stdio.h>

#include<conio.h>

void main() {

long int gross;

int tax = 0, index;

clrscr();

printf("Enter the gross salary : ");

scanf("%ld", &gross);

index = gross/1000;

switch(index){

case 0:

case 1:

tax = 0;

break;

case 2:

case 3:

tax = gross \* 3/100;

break;

case 4:

case 5:

tax = gross \* 5/100;

break;

default:

tax = gross \* 8/100;

break;

}

printf("Gross Pay = %ld\n Tax = %d", gross, tax);

getch();

}

*Output:*

*Enter the gross salary :20000*

*Gross Pay = 20000*

*Tax = 1600*

4) Write a C program to reverse a number and find the sum of individual digits. Also check for palindrome.

#include<stdio.h>

#include<conio.h>

void main() {

int n, rem, temp, rev=0, sum=0;

clrscr();

printf("Enter a number: ");

scanf("%d", &n);

temp = n;

while(n>0){

rem = n % 10;

sum = sum + rem;

rev = rev \* 10 + rem;

n = n/10;

}

printf("The reverse of %d is %d\n", temp, rev);

if (temp == rev)

printf("%d is palindrome", temp);

else

printf("%d is not a palindrome", temp);

printf("\nThe sum of the digits is %d\n", sum);

getch();

}

*Output:*

*Enter a number: 2500*

*The reverse of 2500 is 52*

*2500 is not a palindrome*

*The sum of the digits is 7*

# Part B:

1) Write a C program to accept n numbers into an array and to find the sum and average of those numbers.

#include<stdio.h>

void main() {

int a[20], i, sum = 0, n;

float avg;

clrscr();

printf("enter the size of array: ");

scanf("%d", &n);

printf("Enter %d integer numbers: ", n);

for(i=0;i<n;i++)

scanf("%d", &a[i]);

for(i=0;i<n;i++) {

sum = sum + a[i];

}

avg = (float)sum/n;

printf("\nSum = %d", sum);

printf("\nAverage = %f", avg);

getch();

}

*Output:*

*enter the size of array: 4*

*Enter 4 integer numbers: 5 5 5 5*

*Sum = 20*

*Average = 5.000000*

2) Write a C program to accept a list of elements and to find the maximum and minimum elements along with their positions.

#include<stdio.h>

#include<conio.h>

void main() {

int arr[10], n, i, big, small, bpos, spos;

clrscr();

printf("Enter number of elements:\n");

scanf("%d", &n);

printf("Enter the elements: ");

for (i=0;i<n;i++) {

scanf("%d", &arr[i]);

}

big = arr[0];

small = arr[0];

bpos = 1;

spos = 1;

for (i = 1; i < n; i++) {

if (big < arr[i]) {

big = arr[i];

bpos = i + 1;

}

if (small > arr[i]) {

small = arr[i];

spos = i + 1;

}

}

printf("The largest number is %d is at position %d\n", big, bpos);

printf("The smallest number is %d is at position %d", small, spos);

getch();

}

*Output:*

*Enter number of elements: 5*

*Enter the elements: 1 2 3 4 5*

*The largest number is 5 is at position 5*

*The smallest number is 1 is at position 1*

3) Write a C program to accept a matrix and find the transpose of the matrix. Also find whether the given matrix is symmetric or not.

#include<stdio.h>

#include<conio.h>

void main() {

int a[10][10], m, n, i, j, flag;

clrscr();

flag = 0;

printf("Enter rows and colomns:\n ");

scanf("%d%d", &m, &n);

printf("Enter the matrix element:\n");

for (i=0;i<m;i++){

for (j=0;j<n;j++){

scanf("%d", &a[i][j]);

}

}

printf("Entered matrix is:\n");

for (i=0;i<m;i++){

for (j=0;j<n;j++){

printf("%d\t", a[i][j]);

}

printf("\n");

}

printf("Transpose of the matrix is:\n");

for (i=0;i<n;i++){

for (j=0;j<m;j++){

printf("%d\t", a[j][i]);

}

printf("\n");

}

if (m!=n) {

printf("Given matrix is not symmetric");

getch();

}

for (i=0;i<m;i++) {

for (j=0;j<n;j++) {

if (a[i][j]!=a[j][i]) {

flag = 1;

break;

}

}

}

if(flag==0)

printf("\nGiven Matrix is Symmetric");

else

printf("\nGiven Matrix is Not Symmetric");

getch();

}

*Output:*

*Enter rows and colomns: 2 2*

*Enter the matrix element: 4 3 2 1*

*Entered matrix is:*

*4 3*

*2 1*

*Transpose of the matrix is:*

*4 2*

*3 1*

*Given Matrix is Not Symmetric*