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	DATE	PROGRAM SUM OF INDIVIDUAL DIGIT PASS OR FAIL PRIME NUMBERS SORTING ARRAYS STACK OPERATION QUEUE OPERATION	PROGRAM SUM OF INDIVIDUAL DIGIT PASS OR FAIL PRIME NUMBERS SORTING ARRAYS STACK OPERATION QUEUE OPERATION

EX.NO: 01 /*SUM OF INDIVIDUAL DIGIT*/

DATE:

AIM:

To Test the C program: Finding the sum of individual digits of a 10-digit number until a single digit is produced.

ALGORITHM:

Step 1:Start the process

Step 2:Get number by user.

Step 3:Get the modulus/remainder of the number.

Step 4:sum the remainder of the number.

Step 5:Divide the number by 10.

Step 6:Repeat the step 2 while number is greater than 0.

Step 7:Display the sum of digits

Step 8:Stop the process

PROGRAM 1:

```
#include<stdio.h>
int main()
Long num;
int dig,sum;
printf("Enter the number : ");
scanf("%ld",&num);
printf("%ld-> ",num);
do
{
sum = 0;
while(num!=0)
dig=num%10;
sum+=dig;
num/=10;
}
printf("%d-> ",sum);
num=sum;
while(num/10!=0);
return 0;
```

TEST CASE:

TEST ID	TEST	TEST STEPS	EXPECTED	ACTUAL	STATUS
	DESCRIPTION		OUTPUT	OUTPUT	
TC01	CHECKING	ADD THE	DISPLAY	DISPLAYE	SUCCESS
	THEPROCESS	HEADER FILE	INPUT&	D INPUT &	
	FOR INPUT &	STATEMENT	OUTPUT	OUTPUT	
	OUTPUT	#INCLUDE <stdio< td=""><td>STATEMENT</td><td>STATEMEN</td><td></td></stdio<>	STATEMENT	STATEMEN	
		.H>	PROPERLY	TS	
			22.22	PROPERLY	
TC02	SUCCESSFU	MAIN	MAIN	MAIN	SUCCESS
	LPROCESS	FUNCTION	FUNCTION	FUNCTION	
	OF MAIN FUNCTION	STATEMENT	IS ALLOWING	ALLOWED	
	FUNCTION	SHOULD BE CHECKED	THE	THE PROGRAM	
		CHECKED	PROGRAM	TO	
			TO PROCESS	PROCESS	
TC03	INITIATION	INITIATE THE	ACCEPTAN	NOT	FAILURE
1003	OFVARIABLE	VARIAVBLE	CEOF	ACCEPTAN	TAILUKL
	NAME NUM	NUMWITH	LONG	CEOF	
	TVI HVILL TVOTVI	THE DATA	INTEGER	LONG	
		TYPE LONG	VARIABLE	INTEGER	
			VALUES	VARIABLE	
				VALUES	
TC04	GETTING	ENTER INPUT TO	ACCEPT	ACCEPT	SUCCESS
	INPUTVALUES	CALCULATE	THE INPUT	EDTHE	
	FROM THE	SUM OFDIGIT	FROMTHE	INPUT	
	USER		USER	FROM	
				THE	
				USER	
TC05	CHECK THE	ENTER THE	ACCEPT	NOT	FAILURE
	GIVEN INPUT	INPUT VALUE	AND	ACCEPTED	
	NUMBER	AS INTEGER	DISPLAY	AND	
	WHETHER IT		THE GIVEN	DISPLAY	
	ISCORRECT		INPUT	THE GIVEN	
	OR		VALUE	INPUT	
TC06	NOT	DDOCEGGING	DISPLAY	VALUE	SUCCESS
1000	INITIATE THE	PROCESSING SUMOF DIGIT	THE SUM	DISPLAYE	SUCCESS
	PROCESS OF	SUMOF DIGIT	OF DIGIT	D THE	
	DOLOOP		OF DIGIT	SUM OF	
	TO MODEL OF THE COLUMN	CH IE THE	Didby 11/	DIGIT	
TC07	INITIATE THE	GIVE THE	DISPLAY	DISPLAYE	SUCCESS
	VARIABLE VALUE OF	INITIAL VALUE AS 0	THESUM	D THE SUM	
	SUM	TO SUM	VALUE AFTER	VALUE AFTER	
	SUM	TOSUM	SUMMING	SUMMING	
TC08	INITIATE	CHECK THE	PROCESS	PROCESSE	SUCCESS
1000	THEWHILE	CONDITION FOR	THE SUM	D THE SUM	BUCCESS
	LOOPFOR	NUM VALUE IS	OF DIGITTO	OF DIGIT	
	PROCESSIN	NOTEQUAL TO	PRODUCE		
	G	ZERO	SINGLE	TO	
			DIGIT	PRODUCE	
				SINGLE	
TI COO	INITIA MED		Addichies	DIGIT	arreces.
TC09	INITIATE	DIVIDE THE	ASSIGNED	ASSIGNED	SUCCESS
	VARIABLE	NUM VALUE BY 10	REMINDER VALUE IN	REMINDER VALUE IN	
			I V A L LIH IIN	I VALUE IN	•
	VALUE OF DIG	10	DIG	DIG	

TC10	INITIATE THE	DIVIDE THE	ASSIGNED	ASSIGNED	SUCCESS	
	VARIABLE	NUM VALUE	THE	THE		
	VALUE OF	TO ASSIGN	QUOTIENT	QUOTIENT		
	NUM	QUOTIENT	IN NUM	IN NUM		
		VALUE	VARIABLE	VARIABLE		ĺ

ERROR CORRECTION:

TEST ID	TEST	TEST STEPS	EXPECTED	ACTUAL	STATUS
	DESCRIPTION		OUTPUT	OUTPUT	
TC03	INITIATION	CHECK THE	ACCEPTAN	ACCEPTE	SUCCESS
	OF	DATATYPE	CEOF	D THE	
	VARIABLE	WITH THE	LONG	VALUE	
	NAME NUM	LONG	INTEGER	OF LONG	
		INTEGER	VARIABLE	INTEGER	
			VALUES		
TC05	CHECK THE	GIVE THE	ACCEPT	ACCEPTED	SUCCESS
	GIVEN INPUT	CORRECT10	AND	AND	
	NUMBER	DIGIT INPUT	DISPLAY	DISPLAYE	
	WHETHER IT	VALUE AS	THE GIVEN	D THE	
	ISCORRECT	INTEGER	INPUT	GIVEN	
	OR		VALUE	INPUT	
	NOT			VALUE	

OUTPUT:

```
C:\TURBOC3\BIN>TC
Enter any number : 1234567890
1234567890-> 45-> 9-> _

Activate Windows
Go to Settings to activate Windows.
```

RESULT:

/*MARK LIST */

DATE:

EX.NO: 02

AIM:

To Test the C Program: Accept the inputs student name, marks in five subjects and declare the result as PASS if the student gets minimum 40 in each subject; otherwise declare the result as FAIL.

ALGORITHM:

Step 1 : Start the program

Step 2: Assign 4 integer variables inputs for the different 4 subjects.

Step 3: Then calculate the grade based upon the average of four marks.

Step 4: If the value of the grade is more than 40, it will print pass otherwise it shows fail.

Step 5 : Run the program

Step 6 : stop the process

PROGRAM 2:

```
#include <stdio.h>
int main()
int ST, drawing, chemistry, math, c, total;
clrscr();
printf("\n Marks in:\n\n");
printf(" ST = ");
scanf("%d",&ST);
printf(" drawing = ");
scanf("%d",&drawing);
printf(" chemistry = ");
scanf("%d",&chemistry);
printf(" math
                =");
scanf("%d",&math);
printf(" c
              = ");
scanf("%d",&c);
total=math+ST+chemistry+drawing+c;
if(ST<40 || chemistry<40 || drawing<40 || math<40 || c<40)
printf("\n Result: FAIL");
else
printf("\n Result: PASS");
printf("\n Percentage:%0.2f\n",total/5.0);
printf("\n NOTE: Total for each subject is 100\n");
return 0;
}
```

TEST CASE:

TEST ID	TEST	TEST STEPS	EXPECTED	ACTUAL	STATUS
	DESCRIPTION		OUTPUT	OUTPUT	
TC01	CHECKING	ADD THE	DISPLAY	DISPLAYED	SUCCESS
	THEPROCESS	HEADER FILE	INPUT&	INPUT &	
	FOR INPUT &	STATEMENT	OUTPUT	OUTPUT	
	OUTPUT	#INCLUDE <std< td=""><td>STATEMENTS</td><td>STATEMEN</td><td></td></std<>	STATEMENTS	STATEMEN	
		IO.H>	PROPERLY	TS	
				PROPERLY	
TC02	SUCCESSFU	MAIN	MAIN	MAIN	SUCCESS
	LPROCESS	FUNCTION	FUNCTION IS	FUNCTION	
	OFMAIN	STATEMEN	ALLOWING	ALLOWED	
	FUNCTION	T SHOULD	THE	THE	
		BE	PROGRAM	PROGRAM	
		CHECKED	TO PROCESS	ТО	
				PROCESS	
TC03	INITIATION	INITIATE	ACCEPTANC	ACCEPTE	SUCCESS
	OF	THE	EOF	D	
	VARIABLES	VARIABLES	INTEGER	INTEGER	
	TOGET INPUT	WITHTHE	VARIABLE	VARIABL	
	VALUES	DATA TYPE	VALUES	E	
T C0.4	GEORGE VA	INTEGER	+ CCEPH HVVE	VALUES	27722222
TC04	GETTING	ENTER INPUT	ACCEPT THE	ACCEPT	SUCCESS
	INPUTVALUES	TO	INPUT FROM	EDTHE	
	FROM THE	CALCULATE	THE USER	INPUT	
	USER	TOTAL		FROM THE	
		MARKS OF		USER	
		GIVEN INPUT			
TC05	ASSIGN THE	ADD THE	ASSIGN THE	ASSIGNED	SUCCESS
	TOTAL	FIVE	ADDED	THEADDED	
	MARKSIN	SUBJECTS	VALUESIN THE	VALUES IN	
	THE	MARKS	VARIABLE	THE	
	VARIABLE		TOTAL	VARIABLE	
	TOTAL			TOTAL	
TC06	CHECK THE	CHECK THE	ALL THE	ALL THE	SUCCESS
	GIVEN INPUT	CONDITION	GIVEN	GIVEN	
	MARKS	USINGOR	VALUES HAS	VALUES	
	ABOVE40	OPERATOR	TO BE	SUCCESSFUL	
			CHECKED	LYCHECKED	
			USING OR	USING OR	
TC07	PRINT THE	CHECK ALL	OPERATOR USING OR	OPERATOR IDENTIFIED	FAILURE
100/	RESULT AS	THE GIVEN	OPERATOR	ONE OF	FAILUKE
	PASS	MARKS ARE	GIVEN INPUT	THE GIVEN	
	rAss	ABOVE 40	WILL BE	INPUTIS	
		ADOVE 40	CHECKED	BELOW 40	
T C C C	DDD VIII III II	GIVE CIT CIT I			arrece===
TC08	PRINT THE	CHECK GIVEN	USING OR	IDENTIFIED	SUCCESS
	RESULT AS	MARKS ARE	OPERATOR	ONE OF	
	FAIL	BELOW40	GIVEN INPUT	THE GIVEN	
			WILL BE	INPUTIS	
			CHECKED	BELOW 40	

TC09	PRINT THE	CALCULATE	ASSIGN THE	PRINTED	SUCCESS
	PERCENTAG	THE TOTAL	CALCULATED	THE	
	Е	MARKS FOR	TOTAL	PERCENTA	
		ALL	MARKS AND	GEVALUE	
		SUBJECTS	DIVIDE		
			MARKS USING		
			NUMBER		
			SYSTEM		
TC10	GIVE THE	USE PRINTF	PRINT THE	PRINTED	FAILURE
	IDENTIFICATIO	STATEMEN	MAXIMUM	THE	
	NFOR	T FOR	MARK FOR	MAXIMUM	
	MAXIMUM	IDENTIFICA	EACH	MARK FOR	
	MARKS FOR	TION	SUBJECT	EACH	
	EACH SUBJECT		IS 100	SUBJECT	
				IS 50	

ERROR CORRECTION:

TEST ID	TEST	TEST STEPS	EXPECTED	ACTUAL	STATUS
	DESCRIPTION		OUTPUT	OUTPUT	
TC07	PRINT THE	CORRECT	USING OR	PRINTED	SUCCESS
	RESULT AS	INPUT HAS TO	OPERATOR	THE	
	PASS	BE GIVEN	GIVEN	RESULT AS	
			INPUT	PASS	
			WILL BE		
			CHECKED		
TC10	GIVE THE	USE PRINTF	PRINT THE	PRINTED	SUCCESSS
	IDENTIFICATI	STATEMENT	MAXIMUM	THE	
	ONFOR	FOR	MARK FOR	MAXIMUM	
	MAXIMUM	IDENTIFICATIO	EACH	MARK FOR	
	MARKS FOR	N AND CHECK	SUBJECTIS	EACH	
	EACH	THE TYPING	100	SUBJECT IS	
	SUBJECT	MISTAKES		50	
		IN KEYBOARD			

OUTPUT:

```
C:\TURBOC3\BIN>TC

Marks in:

ST = 40
drawing = 50
chemistry = 65
math = 55
c = 40

Result: PASS
Percentage:50.00

NOTE: Total for each subject is 100

Activate Windows
Co to Settings to activate Windows.
```

```
C:\TURBOC3\BIN>TC

Marks in:

ST = 60
drawing = 30
chemistry = 50
math = 65
c = 40

Result: FAIL
Percentage: 49.00

NOTE: Total for each subject is 100

Activate Windows
So to Settings to activate Windows.
```

RESULT:

EX.NO: 03 /*PRIME NUMBERS */

DATE:

AIM:

To Test the C program: Program for generating n prime numbers

ALGORITHM:

- Step 1: Start the program
- Step 2: First find the factors of the given number.
- Step 3: Check the number of factors of that number.
- Step 4: If the number of factors is more than two, it is not a prime number.
- Step 5: Run the program
- Step 6: Stop the program

PROGRAM 3:

```
#include <stdio.h>
int main()
{
  int i, j, end, isPrime;
  printf("Find prime numbers between 1 to : ");
  scanf("%d", &end);
  printf("All prime numbers between 1 to %d are:\n", end);
  for(i=2; i<=end; i++)
  {
    isPrime = 1;
    for(j=2; j<=i/2; j++)
    {
    if(i%j==0)
    {
    isPrime = 0;
    break;
    }
  }
  if(isPrime==1)
  {
    printf("%d, ", i);
  }
  }
  return 0;
}</pre>
```

TEST CASE:

TEST ID	TEST	TEST STEPS	EXPECTED	ACTUAL	STATUS
	DESCRIPTION		OUTPUT	OUTPUT	
TC01	CHECKING	ADD THE	DISPLAY	DISPLAYE	SUCCESS
	THEPROCESS	HEADER FILE	INPUT&	D INPUT &	
	FOR INPUT &	STATEMENT	OUTPUT	OUTPUT	
	OUTPUT	#INCLUDE <stdio< td=""><td>STATEMENT</td><td>STATEMEN</td><td></td></stdio<>	STATEMENT	STATEMEN	
		.H>	S PROPERLY	TS	
				PROPERLY	
TC02	SUCCESSFU	MAIN	MAIN	MAIN	SUCCESS
	LPROCESS	FUNCTION	FUNCTION	FUNCTION	
	OFMAIN	STATEMENT	IS	ALLOWED	
	FUNCTION	SHOULD BE	ALLOWING	THE	
		CHECKED	THE	PROGRAM	
			PROGRAM	ТО	
			TO PROCESS	PROCESS	
TC03	INITIATION	INITIATE THE	ACCEPTAN	NOT	FAILURE
	OF	VARIABLES	CEOF	ACCEPT	
	VARIABLES	WITHTHE	INTEGER	ED	
	TOGET INPUT	DATA TYPE	VARIABLE	INTEGER	
	VALUES	INTEGER	VALUES	VARIAB	
				LE	
TOC !	GETT TO YELL	DAMES STORY		VALUES	GIIGGE ~ ~
TC04	GET INPUT	ENTER INPUT	ACCEPT	ACCEPTED	SUCCESS
	VALUES	RANGE TO	THE INPUT	THE INPUT	
	FROMTHE	FINDPRIME	RANGE	RANGE	
	USER	NUMBER	FROM THE	FROMTHE	
			USER	USER	
TC05	ASSIGN THE	ASSIGN THE	DISPLAY	DISPLAYE	FAILURE
	INPUT	INPUT VALUE AS	THEFIRST	D THE	
	VALUETO	1 FOR THE	PRIME	FIRST	
	THE	VARIABLE	NUMBER	PRIME	
	VARIABLE	ISPRIME	ASONE	NUMBER	
	ISPRIME			AS	
				TWO	
TC06	CHECKING	USE FOR LOOP	DISPLAY	DISPLAY	SUCCESS
	THEPROCESS	TOFIND PRIME	THE PRIME	EDTHE	
	FOR PRIME OR	NUMBERS	NUMBERS IF	PRIME	
	NOT		ITIS FOUND	NUMBER	
T.C.C.	CHECKBIC	OTHOR BITE FOR	Didbi 437	S	GIIGGE ~ ~
TC07	CHECKING	CHECK THE FOR	DISPLAY	DISPLAY	SUCCESS
	THEPROCESS	LOOP VARIABLE	THE PRIME	EDTHE	
	FOR PRIME OR	I ISDIVISIBLE BY	NUMBERS IF	PRIME	
	NOT	ANY NUMBER	IT IS NOT	NUMBER	
		OTHER THAN 1	DIVISIBLE	S	
		AND SELF	BY ANY		
			NUMBER		
			OTHER		
			THAN 1AND		
TO CO	DDE AZ EXTE	OTTEON THE	SELF	OLUE	GIIGGE ~ ~
TC08	BREAK THE	CHECK THE	IF IT IS ZERO	QUIT	SUCCESS
	PROCESS IF IT	DIVISIBLE	THE	THE	
	IS NOT PRIME	VALUE I%J	PROCESS	PROCES	
TCCC	NOT PRIME	=0 OR NOT	WILL BE QUIT		arrage = = =
TC09	PRINT THE	PRINT THE	DISPLAY	DISPLAY	SUCCESS
	PRIME	VARIABLE OF	THE	THE	
	NUMBER	I VALUE AS	PRIME	PRIME	
		PRIME	NUMBERS	NUMBER	

		NUMBER			
TC10	BREAK	FIND THE PRIME	QUIT THE	QUIT	SUCCESS
	THE	NUMBERS	PROCESS IF	THE	
	PROCESS	REACHEDTHE	ITIS REACH	PROCES	
		LIMIT VALUE			

ERROR CORRECTION:

TEST ID	TEST	TEST STEPS	EXPECTED	ACTUAL	STATUS
	DESCRIPTION		OUTPUT	OUTPUT	
TC03	INITIATION	CHECK THE	ACCEPTAN	ACCEPTED	SUCCESS
	OF	INITIATED	CEOF	INTEGER	
	VARIABLES	VARIABLES	INTEGER	VARIABLE	
	TOGET	WITHTHE	VARIABLE	VALUES	
	INPUT	DATA TYPE	VALUES		
	VALUES	INTEGER			
TC05	ASSIGN THE	CHECK THE	DISPLAY	DISPLAYED	SUCCESS
	INPUT	ASSIGNED	THEFIRST	THE FIRST	
	VALUETO	INPUTVALUE	PRIME	PRIME	
	THE	AS 1 FOR THE	NUMBER	NUMBER AS	
	VARIABLE	VARIABLE	ASONE	ONE	
	ISPRIME	ISPRIME			

OUTPUT:

```
C:\TURBOC3\BIN>TC

Find prime numbers between 1 to : 20

All prime numbers between 1 to 20 are:
2, 3, 5, 7, 11, 13, 17, 19, _

Activate Windows
Go to Settings to activate Windows.
```

RESULT:

EX.NO: 04 /*SORTING ARRAYS*/

DATE:

AIM:

To Test the C program: Sort and store the elements of two arrays of integers into the third list.

ALGORITHM:

- Step 1: Start the process
- Step 2: Create a arrays of some fixed size.
- Step 3: Take two variables i and j, which will be at the 0th position of the arrays.
- Step 4: Enter the number of elements and the elements.
- Step 5: Elements will be sorted in ascending order using for loop.
- Step 6: Run the process
- Step 7: Stop the process

PROGRAM 4:

```
#include<stdio.h>
#include<conio.h>
void main()
int a[20],n,temp,i,j;
clrscr();
printf("\n\n\t ENTER THE NUMBER OF TERMS:");
scanf("%d",&n);
printf("\n\t ENTER THE ELEMENTS OF THE ARRAY:");
for(i=0;i<n;i++)
gotoxy(25,11+i);
scanf("\n\t\d",\&a[i]);
for(i=1;i<n;i++)
temp=a[i];
j=i-1;
while(temp<a[j]&&j>=0)
a[j+1]=a[j];
j=j-1;
a[j+1]=temp;
printf("\n\t THE ASCENDING ORDER LIST IS\n");
for(i=0;i<n;i++)
printf("\n\t\t\d",a[i]);
getch();
}
```

TEST CASE:

TEST ID	TEST	TEST STEPS	EXPECTED	ACTUAL	STATUS
	DESCRIPTION		OUTPUT	OUTPUT	
TC01	CHECKING	ADD THE	DISPLAY	DISPLAYE	SUCCESS
	THEPROCESS	HEADER FILE	INPUT&	D INPUT &	
	FOR INPUT &	STATEMENT	OUTPUT	OUTPUT	
	OUTPUT	#INCLUDE <stdio< td=""><td>STATEMENT</td><td>STATEMEN</td><td></td></stdio<>	STATEMENT	STATEMEN	
		.H>	S PROPERLY	TS	
				PROPERLY	
TC02	SUCCESSF	MAIN	MAIN	MAIN	SUCCESS
	UL	FUNCTION	FUNCTION	FUNCTION	
	PROCESS	STATEMENT	IS	ALLOWED	
	OFMAIN	SHOULD BE	ALLOWING	THE	
	FUNCTION	CHECKED	THE	PROGRAM	
			PROGRAM	TO	
			TO PROCESS	PROCESS	
TC03	INITIATION	INITIATE THE	ACCEPTAN	NOT	FAILURE
	OF	VARIABLES	CEOF	ACCEPT	
	VARIABLES	WITHTHE	INTEGER	ED	
	TOGET	DATA TYPE	VARIABLE	INTEGER	
	INPUT	INTEGER	VALUES	VARIAB	
	VALUES FOR			LE	
	ARRAY			VALUES	
TC04	GETTING	ENTER INPUT	ACCEPT	NOT	FAILURE
	INPUT	VALUEFOR	THE INPUT	ACCEPTE	
	VALUES	ARRAY	FROMTHE	DTHE	
	FROM THE		USER	INPUT	
	USER TO			FROM	
	MENTION			THE	
	FIRST			USER	
	ARRAY SIZE				
TC05	GIVE THE	ENTER THE	ACCEPT	ACCEPTE	SUCCESS
	INPUTVALUES	FIRSTARRAY	THE	D THE	
	FOR FIRST	ELEMENTONE	ARRAY	ARRAY	
	ARRAY	BY ONE	ELEMENT	ELEMEN	
			FROM THE	T FROM	
			USER	THE	
				USER	
TC06	GIVE THE	ENTER THE	ACCEPT	ACCEPTE	SUCCESS
	INPUTVALUES	SECONDARRAY	THE	D THE	
	FOR SECOND	ELEMENT ONE	ARRAY	ARRAY	
	ARRAY	BY ONE	ELEMENT	ELEMEN	
1			FROM	T FROM	
			THE USER	THE	
			THE USER	USER	
TC07	PROCESS	USE FOR LOOP	STORE	STORED	CHCCEGG
TC07	FOR	FORMERGING	MERGED	MERGED	SUCCESS
	MERGING	PORMERGING	FIRST	FIRST	
	OFTWO			ARRAY	
			ARRAY		
	ARRAYS		ELEMENT IN	ELEMENT	
			ARRAY	INARRAY	
			VARIABLE	VARIABLE	
			MERGE[i]	MERGE[i]	

TC08	PROCESS	USE FOR LOOP	STORE	STORE	SUCCESS
	FOR	FORMERGING	MERGED	MERGED	
	MERGING		SECOND	SECOND	
	OFTWO		ARRAY	ARRAY	
	ARRAYS		ELEMENT	ELEMENT	
			INARRAY	INARRAY	
			VARIABL	VARIABL	
			E	E	
			MERGE[K]	MERGE[K]	
TC09	IDENTIFY	ADD TWO	STORE THE	STORED	SUCCESS
	THETOTAL	ARRAY	ARRAY	THE ARRAY	
	ARRAY SIZE	ELEMENT TO	SIZE IN THE	SIZE IN THE	
		IDENTIFY THE	VARIABLE	VARIABLE	
		TOTAL ARRAY	SIZE	SIZE	
		SIZE			
TC10	PRINT THE	USE FOR LOOP	PRINT THE	PRINTED	SUCCESS
	MERGED	TO PRINT THE	MERGED	THE	
	AND SORTED	MERGEDARRAY	AND	MERGED	
	ARRAY	ELEMENT ONE	SORTED	AND	
	ELEMENT	BY ONE	ARRAY	SORTED	
			ELEMENT	ARRAY	
			ONE BY ONE	ELEMENT	
				ONE	
				BY ONE	

ERROR CORRECTION:

TEST ID	TEST	TEST STEPS	EXPECTED	ACTUAL	STATUS
	DESCRIPTION		OUTPUT	OUTPUT	
TC03	INITIATION OF VARIABLES TOGET INPUT VALUES FOR ARRAY	CHECK THE DATA TYPE OF INITIATED VARIABLES	ACCEPTANCE OF INTEGER VARIABLE VALUES	ACCEPTD INTEGER VARIABLE VALUES	SUCCESS
TC04	GETTING INPUT VALUES FROM THE USER TO MENTION FIRST ARRAY SIZE	CHECK THE ARRAYSIZE AND INPUT VALUE OF ARRAY	ACCEPT THE INPUT FROM THE USER	ACCEPTE THE INPUT FROM THE USER	SUCCESS

OUTPUT:

```
Enter Array 1 Size : 5
Enter Array 1 Elements : 1
2
3
4
5
Enter Array 2 Size : 6
Enter Array 2 Elements : 6
7
8
9
10
11
Now the new array after merging is : 1234567891011

Activate Windows
Go to Settings to activate Windows.
```

RESULT:

EX.NO: 05 /*STACK OPERATION*/

DATE:

AIM:

To Test the C program: Experiment the operations of a stack using array implementation.

ALGORITHM:

- Step 1:Start the process
- Step 2:Get the number of element from user.
- Step 3: And get the elements using array.
- Step 4:Do the stack operation using push(),pop(),display() functions.
- Step 4:Get the choice of operation from user using switch case.
- Step 5:Run the process and display the result.
- Step 6:Stop the process

PROGRAM 5:

```
#include<stdio.h>
int stack[100],choice,n,top,x,i;
void push(void);
void pop(void);
void display(void);
int main()
clrscr();
top=-1;
printf("\n Enter the size of STACK[MAX=100]:");
scanf("%d",&n);
printf("\n\t STACK OPERATIONS USING ARRAY");
printf("\n\t_____
printf("\n\t 1.PUSH\n\t 2.POP\n\t 3.DISPLAY\n\t 4.EXIT");
do
printf("\n Enter the Choice:");
scanf("%d",&choice);
switch(choice)
case 1:
push();
break;
case 2:
pop();
break;
case 3:
display();
break;
case 4:
printf("\n\t EXIT POINT ");
break;
default:
```

```
printf ("\n\t Please Enter a Valid Choice(1/2/3/4)");
}}}
while(choice!=4);
return 0;
void push()
if(top>=n-1)
printf("\n\tSTACK is over flow");
else
printf(" Enter a value to be pushed:");
\operatorname{scanf}("\%d",\&x);
top++;
stack[top]=x;
void pop()
if(top \le -1)
printf("\n\t Stack is under flow");
else
printf("\n\t The popped elements is %d",stack[top]);
top--;
void display()
if(top>=0)
printf("\n The elements in STACK \n");
for(i=top; i>=0; i--)
printf("\n%d",stack[i]);
printf("\n Press Next Choice");
else
printf("\n The STACK is empty");
}}
```

TEST CASE:

TEST ID	·-	TEST STEPS	EXPECTED	ACTUAL	STATUS
	DESCRIPTION		OUTPUT	OUTPUT	
TC-01	ACCEPTANCE	<stdio.h></stdio.h>	ACCEPTING	ACCEPTED	SUCCESS
	OF <stdio.h> FILE</stdio.h>	HEADERFILE	<stdio.h></stdio.h>	<stdio.h></stdio.h>	
			HEADERFILE	HEADER FILE	
TC-02	ACCEPTANCE	void	ACCEPTING	ACCEPTED	SUCCESS
	OF void push(void)	push(void)	voidpush(void)	voidpush(void)	
	PROTOTYPE	PROTOTYP E	PROTOTYPE	PROTOTYPE	
TC-03	ACCEPTING	choice	THE VARIABLE	THE VARIABLE	FAILURE
	THE	VARIABLE	choice SHOULD	choice IS	
	DECLARATION		BE ACCEPTED	NOT	
	OF choice			ACCEPTED	
	VARIABLE				
TC-04	ACCEPTANCE	top VARIABLE	THE VARIABLE	THE VARIABLE	SUCCESS
	OF		topSHOULD BE	topIS	
	DECLARATION		ACCEPTED	ACCEPTED	
	OF top				
	VARIABLE				
TC-05	ACCEPTANCE	printf	ACCEPTING THE	printf	SUCCESS
	OF printf	STATEMENT	printf STATEMENT	STATEMENT	
	STATEMENTTO			IS	
	GET THE SIZE			ACCEPTED	
	OF STACK		MIN (DED MARK)	AND OPED HUMBIA	
TC-06	ACCEPTANCE	scanf	NUMBER WITH	NUMBER WITH	FAILURE
	OF scanf	STATEMENT	DECIMAL	DECIMAL	
	STATEMENTTO		POINTSHOULD	POINT IS ACCEPTED	
	GET THE SIZE		NOT BE ACCEPTED	ACCEPTED	
FG 05	OF STACK	C		AND OPED HUMBIA	arraceaa
TC-07	ACCEPTANCE	scanf	NUMBER WITH	NUMBER WITH	SUCCESS
	OF scanf	STATEMENT	DECIMAL	DECIMAL	
	STATEMENTTO		POINTHOULD	POINT ISNOT	
	GET THEchoice		NOTACCEPTED	ACCEPTED	
TC-08	CHECKING THE	switch	ACCEPTING THE	switch	SUCCESS
	SYNTAX OF	STATEM	switch	STATEMENT	
	switch	ENT	STATEMEN	IS	
	STATEMENT		T	ACCEPTED	
TC-09	ACCEPTING	return	ACCEPTING	return	SUCCESS
	return	STATEM	return	STATEMENT	
	STATEMENT	ENT	STATEMENT	IS	
				ACCEPTED	
TC-10	ACCEPTIN	if CONDITION	ACCEPTING THE	if CONDITION	SUCCESS
	G if		if CONDITION	IS ACCEPTED	
	CONDITIO				
	N				

ERROR CORRECTION:

TEST ID	TEST DESCRIPTION	TEST STEPS	EXPECTED OUTPUT	ACTUAL OUTPUT	STATUS
TC-03	ACCEPTING THE DECLARATION OF choice VARIABLE	choice VARIABLE	THE VARIABLE choice SHOULD BE ACCEPTED	THE VARIABLE choice IS ACCEPTED	SUCCESS
TC-06	ACCEPTANCE OF scanf STATEMENT TO GET THE SIZE OF STACK	scanf STATEMENT	NUMBER WITH DECIMAL POINT SHOULD NOT BEACCEPTED	NUMBER WITH DECIMAL POINT ISNOT ACCEPTED	SUCCESS

OUTPUT:

```
C:\TURBOC3\BIN>TC

Enter the size of STACKIMAX=1001:20

STACK OPERATIONS USING ARRAY

1.PUSH
2.POP
3.DISPLAY
4.EXIT
Enter the Choice:1
Enter a value to be pushed:01

Enter the Choice:1
Enter a value to be pushed:02

Enter the Choice:1
Enter a value to be pushed:03

Enter the Choice:1
Enter a value to be pushed:04

Activate Windows
Go to Settings to activate Windows.
```

```
Enter the Choice:1
Enter a value to be pushed:04

Enter the Choice:3

The elements in STACK

4
3
2
1
Press Next Choice
Enter the Choice:2

The popped elements is 4
Enter the Choice:3

The elements in STACK

3
2
1
Press Next Choice
Enter the Choice:4
```

RESULT:

DATE:

AIM:

To Test the C program: Menu-driven option for queue operations like add, remove and display.

ALGORITHM:

- Step 1:Start the process
- Step 2:Get the element from user using array
- Step 3:Do the queue operation using insert(),del(),display() functions.
- Step 4:Get the choice of operation from user using switch case.
- Step 5:Run the process and display the result.
- Step 6:Stop the process

PROGRAM 6:

```
#include<stdio.h>
#include<stdlib.h>
#define max_size 5
int queue[max_size],front=-1,rear=-1;
void insert();
void del();
void display();
int main()
int choice;
do
printf("\n\n-----QUEUE OPERATIONS ----\n");
printf("1.Insert\n");
printf("2.Delete\n");
printf("3.Display\n");
printf("4.Exit\n");
printf("-----");
printf("\nEnter your choice:\t");
scanf("%d",&choice);
switch(choice)
{
case 1:
insert();
break;
case 2:
del();
break;
case 3:
display();
break;
case 4:
exit(0);
break;
default:
printf("\nInvalid choice:\n");
break;
while(choice!=4);
return 0;
```

```
void insert()
int item;
if(rear==(max_size-1))
printf("\nQueue Overflow:");
else
printf("Enter the element to be inserted:\t");
scanf("%d",&item);
rear=rear+1;
queue[rear]=item;
if(front==-1)
front=0;
void del()
int item;
if(front==-1)
printf("\nQueue Underflow:");
else
item=queue[front];
printf("\nThe deleted element: %d\t",item);
if(front==rear)
front=-1;
rear=-1;
else
front=front+1;
void display()
int i;
```

```
if(front==-1)
{
printf("\nQueue is Empty:");
}
else
{
printf("\nThe queue elements are:\n" );
for(i=front;i<=rear;i++)
{
printf("%d\t",queue[i]);
}
}</pre>
```

TEST CASE:

TEST ID	TEST	TEST STEPS	EXPECTED	ACTUAL	STATUS
	DESCRIPTION		OUTPUT	OUTPUT	
TC-01	ACCEPTANCE	<stdio.h></stdio.h>	ACCEPTING	ACCEPTED	SUCCESS
	OF <stdio.h> FILE</stdio.h>	HEADERFILE	<stdio.h></stdio.h>	<stdio.h></stdio.h>	
			HEADERFILE	HEADERFILE	
TC-02	ACCEPTANCE	void insert()	ACCEPTING	ACCEPTED	SUCCESS
	OF void insert()	PROTOTY	voidinsert()	voidinsert()	
	PROTOTYPE	PE	PROTOTYPE	PROTOTYPE	
TC-03	ACCEPTING	choice VARIABLE		THE VARIABLE	FAILURE
	THE		choice	choice IS	
	DECLARATION		SHOULDBE	NOT	
	OF choice		ACCEPTED	ACCEPTED	
TC 04	VARIABLE	do while	A COEPERIO EUE	41-11-	aricatea
TC-04	ACCEPTANCE	STATEME	ACCEPTING THE	do while STATEMENT	SUCCESS
	OF do while	NT	do while	IS	
	STATEMENT	INI	STATEME	ACCEPTED	
TO 05	A COEPT ANGE		NT		GIIGGEGG
TC-05	ACCEPTANCE	printf	ACCEPTING THE	printf STATEMENT	SUCCESS
	OF printf	STATEMENT	printf STATEMENT	IS ACCEPTED	
	STATEMENTTO		SIAIEWENI	ISACCEFIED	
	GET THE SIZE				
TC-06	OF STACK	choice	NUMBER	NUMBER WITH	EAHLIDE
1C-06	ACCEPTANCE	STATEME	WITH	DECIMAL	FAILURE
	OF scanf	NT	DECIMAL	POINT IS	
	STATEMENTTO GET THE	111	POINT	ACCEPTED	
	choice		SHOULD NOT	ACCEL TED	
	Choice		BE		
			ACCEPTED		
TC-07	CHECKING THE	switch	ACCEPTING THE	switch	SUCCESS
	SYNTAX OF	STATEME	switch	STATEMENT	
	switch	NT	STATEME	IS	
	STATEMENT		NT	ACCEPTED	
TC-08	ACCEPTANCE	case STATEMENT	ACCEPTING THE	case	SUCCESS
	OF case		case STATEMENT		
	STATEMENTTO			ACCEPTED	
	GET THE choice				
TC-09	ACCEPTING	return	ACCEPTING	return	SUCCESS
	return	STATEME	return	STATEMENT	
	STATEMENT	NT	STATEMENT	IS	
				ACCEPTED	
TC-10	ACCEPTIN	if CONDITION	ACCEPTING	if CONDITION	SUCCESS
	G if		THE if	ISACCEPTED	
	CONDITIO		CONDITION		
	N				

ERROR CORRECTION:

TC-03	ACCEPTING	choice	THE VARIABLE	THE VARIABLE	SUCCESS
	THE	VARIABLE	choice SHOULD	choice IS	
	DECLARATION		BEACCEPTED	ACCEPT	
	OF			ED	
	choice				
	VARIABLE				
TC-06	ACCEPTANCE	choice	NUMBER	NUMBER WITH	SUCCESS
	OF	STATEME	WITH	DECIMAL	
	scanf	NT	DECIMAL	POINT ISNOT	
	STATEMENT		POINT	ACCEPTED	
	TO		SHOULD NOT		
	GET THE choice		BE		
			ACCEPTED		

OUTPUT:

C:\TURBOC3\BIN>TC			
QUEUE OPERATIONS 1.Insert 2.Delete 3.Display 4.Exit	S		
Enter your choice: Enter the element to be		20	
QUEUE OPERATIONS 1.Insert 2.Delete 3.Display 4.Exit	S		
Enter your choice: Enter the element to be	1 inserted:	30_	Activate Windows Go to Settings to activate Windows.
2.Delete 3.Display 4.Exit			
Enter your choice: Enter the element to be	1 inserted:	40	
QUEUE OPERATIONS 1.Insert 2.Delete 3.Display 4.Exit	3		
Enter your choice: Enter the element to be	1 inserted:	50	
QUEUE OPERATIONS 1.Insert 2.Delete 3.Display 4.Exit			Activate Windows Go to Settings to activate Windows.
Enter your choice:	3		

3.Display 4.Exit		
	-	
Enter your choice:	3	
The queue elements are 20 30 40	: 50	
20 30 10	30	
QUEUE OPERATIO	NS	
1.Insert 2.Delete		
3.Display		
4.Exit		
Enter your choice:		
anosi godi onoroc.		
The deleted element: 2	9	
QUEUE OPERATIO	N9	
QOLOL OLLMITO 1.Insert		
2.Delete		
3.Display		Activate Windows
4.Exit		Go to Settings to activate \
Enter your choice:	- 3	
	-	
3.Display		

3.Display 4.Exit	
Enter your choice: 2	
The deleted element: 20	
QUEUE OPERATIONS 1.Insert 2.Delete 3.Display 4.Exit	
Enter your choice: 3	
The queue elements are: 30 40 50	
QUEUE OPERATIONS 1.Insert 2.Delete 3.Display 4.Exit	Activate Windows Go to Settings to activate Windows.
Enter your choice: 4_	

RESULT:

EX.NO: 07 /*PALINDROME*/

DATE:

AIM:

To Test the C++ program: Palindrome string checking program (using pointers)

ALGORITHM:

- Step 1:Start the process
- Step 2:Get the String from the user
- Step 3:Hold the string and copy of the string in two different variables
- Step 4:Reverse the string in one variable
- Step 5:Compare the two variables
- Step 6:If both are same Print String is a Palindrome
- Step 7:Else Print String is not a palindrome
- Step 8:Stop the process

PROGRAM 7:

```
#include<iostream.h>
#include<conio.h>
#include<stdio.h>
#include<string.h>
void main()
char *s1,*s2,ch;
clrscr();
cout<<"\n PALINDOROME";</pre>
gets(s1);
s2=new char (strlen(s1));
strcpy(s2,s1);
strrev(s2);
if(strcmp(s1,s2))
cout<<"\n THE GIVEN STRING IS NOT A PALINDROME:";
else
cout<<"\n THE GIVEN STRING IS A PALINDROME:";</pre>
cout<<"\n DO YOU WANT TO CONTINUE TYPE(Y OR N):";
cin>>ch;
if(ch=='y'||ch=='n')
getch();
```

TEST CASE:

TEST ID	TEST DESCRIPTION	TEST STEPS	EXPECTED OUTPUT	ACTUAL OUTPUT	STATUS
TC01	CHECKING THEPROCESS FOR INPUT & OUTPUT	ADD THE HEADER FILE STATEMENT #INCLUDE <iostre AM.H></iostre 	DISPLAY INPUT & OUTPUT STATEMENTS PROPERLY	DISPLAYED INPUT & OUTPUT STATEMENTS PROPERLY	SUCCESS
TC02	SUCCESSFUL PROCESS OF MAIN FUNCTION	MAIN FUNCTION STATEMENT SHOULD BE CHECKED	MAIN FUNCTION IS ALLOWING THE PROGRAM TO PROCESS	MAIN FUNCTION ALLOWED THE ROGRAM TO PROCESS	SUCCESS
TC03	INITIATION OF VARIABLE NAME STRING	INITIATE THE VARIAVBLE STRING WITH THE DATA TYPE CHARACTER ARRAY	ACCEPTANCE OF CHARACTER ARRAY VALUES	NOT ACCEPTANC E OF CHARACTER ARRAY VARIABLE VALUES	FAILURE
TC04	GETTING INPUT VALUES FROM THE USER	ENTER INPUT TO FIND WHETHER THE GIVEN INPUT IS PALINDROME OR NOT	ACCEPT THE INPUT FROM THE USER	ACCEPTEDTH EINPUT FROM THE USER	SUCCESS
TC05	CHECK THE GIVEN INPUT WHETHER IT IS CORRECT OR NOT	ENTER THE INPUT VALUEAS COLLECTION OF CHARACTERS	ACCEPT AND DISPLAY THE GIVEN INPUT VALUE	NOT ACCEPTED AND DISPLAYTHE GIVEN INPUT VALUE	FAILURE
TC06	INITIATE THEPROCESS OF WHILE LOOP	PROCESSING OF ASSIGINING P1 VALUEINTO P3	ASSIGN ALL CHARACTERS FROM P1 TO P3	ASSIGNED ALL CHARACTERS FROM P1 TO P3	SUCCESS
TC07	INITIATE THE PROCESS OF IF STATEMENT PROCESS	GIVEN INPUT VALUES OFP1 AND P3 ARE EQUAL OR NOT	ASSIGN FLAG VALUE AS 1 IF IT IS EQUAL	ASSIGNED FLAG VALUEIS 1	SUCCESS
TC08	INITIATE THE PROCESS OF IF STATEMENT	GIVEN INPUT VALUES OFP1 AND P3 ARE EQUAL OR NOT	ASSIGN FLAG VALUE AS 0 IF IT IS NOT EQUAL	ASSIGNED FLAG VALUEIS 0	SUCCESS
TC09	INITIATE THE PROCESS OF IF STATEMENT	FIND THE GIVEN VALUE IS PALINDROME OR NOT	DISPLAY THE RESULT AS NOT A PALINDROME IF THE FLAG VALUE IS 0	DISPLAYED THE RESULT AS NOT A PALINDROME	SUCCESS
TC10	INITIATE THE PROCESS OF IF	FIND THE GIVEN VALUE IS PALINDROME OR NOT	DISPLAY THE RESULT AS	DISPLAYED THE RESULT	SUCCESS

STATEMENT	PALINDRO	AS
	MEIF THE	PALINDRO
	FLAG	ME
	VALUE IS 1	

ERROR CORRECTION:

TEST ID	TEST	TEST STEPS	EXPECTED	ACTUAL	STATUS
	DESCRIPTION		OUTPUT	OUTPUT	
TC03	INITIATION OF	CHECK THE	ACCEPTANC	ACCEPTED	SUCCESS
	VARIABLE	GIVENDATA	E OF	CHARACTER	
	NAME SRTING	TYPE	CHARACTER	VARIABLE	
		CHARACTER IS	VARIAB	VALUES	
		CORRECT OR	LE		
		NOT	VALUES		
TC05	CHECK THE	GIVE INPUT	ACCEPT	ACCEPTED	SUCCESS
	GIVEN INPUT	AS	AND	AND	
	WHETHER IT IS	COLLECTION	DISPLAY	DISPLAYED	
	CORRECT OR	OFARRAY	THE GIVEN	THE GIVEN	
	NOT	VALUES	INPUT	INPUT VALUE	
			VALUE		

OUTPUT:

```
Enter the string:
madem
yes,its a palindrome
```

```
Enter the string:
computer
no , its not a palindrome
```

RESULT: