**Roll No:- 31-B**

**Programing c**

Day-3

1. Write a C program to print student’s information like Name, Address, Mobile Number, email in separate line.

#include <stdio.h>

#include <conio.h>

void main() {

char name[] = "John Doe";

char address[] = "1234 Elm Street";

char mobile[] = "9876543210";

char email[] = "john.doe@example.com

clrscr();

printf("--- Student Information ---\n");

printf("Name: %s\n", name);

printf("Address: %s\n", address);

printf("Mobile Number: %s\n", mobile);

printf("Email: %s\n", email);

getch();

}

2. Write a C program to print student information in the centre of screen using various design pattern with help of backslash character (“\n”, “\t”)

#include <stdio.h>

#include <conio.h>

void main() {

char name[] = "John Doe";

char address[] = "1234 Elm Street";

char mobile[] = "9876543210";

char email[] = "john.doe@example.com

clrscr();

printf("\t\t\t STUDENT INFO \n");

printf("\t\t\t\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

printf("\t\t\t Name: %s \n", name);

printf("\t\t\t Address: %s \n", address);

printf("\t\t\t\* Mobile: %s \n", mobile);

printf("\t\t\t\* Email: %s \n", email);

getch();

}

Day-4

1. Write a C program to print any multiplication table using escape sequence.

#include <stdio.h>

#include <conio.h>

void main() {

int num;

clrscr();

printf("Enter the number to display its multiplication table: ");

scanf("%d", &num);

printf("\n\n\t\tMultiplication Table of %d\n", num);

printf("\t\t%d x 1 = %d\n", num, num \* 1);

printf("\t\t%d x 2 = %d\n", num, num \* 2);

printf("\t\t%d x 3 = %d\n", num, num \* 3);

printf("\t\t%d x 4 = %d\n", num, num \* 4);

printf("\t\t%d x 5 = %d\n", num, num \* 5);

printf("\t\t%d x 6 = %d\n", num, num \* 6);

printf("\t\t%d x 7 = %d\n", num, num \* 7);

printf("\t\t%d x 8 = %d\n", num, num \* 8);

printf("\t\t%d x 9 = %d\n", num, num \* 9);

printf("\t\t%d x 10 = %d\n", num, num \* 10);

getch();

}

2. Program that reads two nos. from key board and perform addition, subtraction, multiplication, division and modulo on that numbers.

#include <stdio.h>

#include <conio.h>

void main() {

int num1, num2;

clrscr();

printf("Enter the first number: ");

scanf("%d", &num1);

printf("Enter the second number: ");

scanf("%d", &num2);

printf("Addition: %d + %d = %d\n", num1, num2, num1 + num2);

printf("Subtraction: %d - %d = %d\n", num1, num2, num1 - num2);

printf("Multiplication: %d \* %d = %d\n", num1, num2, num1 \* num2);

printf("Division: %d / %d = %d\n", num1, num2, num1 / num2);

printf("Modulo: %d %% %d = %d\n", num1, num2, num1 % num2);

getch();

}

Day-5

1. Write a C program using UDF that reads two nos. from key board and perform addition, subtraction, multiplication, division and modulo on that numbers.

#include <stdio.h>

#include <conio.h>

int add(int, int);

int subtract(int, int);

int multiply(int, int);

float divide(int, int);

int modulo(int, int);

void main() {

int num1, num2;

clrscr();

printf("Enter the first number: ");

scanf("%d", &num1);

printf("Enter the second number: ");

scanf("%d", &num2);

printf("Addition: %d + %d = %d\n", num1, num2, add(num1, num2));

printf("Subtraction: %d - %d = %d\n", num1, num2, subtract(num1, num2));

printf("Multiplication: %d \* %d = %d\n", num1, num2, multiply(num1, num2));

printf("Division: %d / %d = %.2f\n", num1, num2, divide(num1, num2));

printf("Modulo: %d %% %d = %d\n", num1, num2, modulo(num1, num2));

getch();

}

int add(int a, int b) {

return a + b;

}

int subtract(int a, int b) {

return a - b;

}

int multiply(int a, int b) {

return a \* b;

}

float divide(int a, int b) {

return (float)a / b;

}

int modulo(int a, int b) {

return a % b;

}

Day-6

1. Write a C program to calculate area and circumfrences of circle.

(circumfrences=2\*PI\*r),(Area :PI\*r\*r)

#include <stdio.h>

#include <conio.h>

#define PI 3.14159

float calculate\_area(float radius);

float calculate\_circumference(float radius);

void main() {

float radius, area, circumference;

clrscr();

printf("Enter the radius of the circle: ");

scanf("%f", &radius);

area = calculate\_area(radius);

circumference = calculate\_circumference(radius);

printf("Radius: %.2f\n", radius);

printf("Area: %.2f\n", area);

printf("Circumference: %.2f\n", circumference);

getch();

}

float calculate\_area(float radius) {

return PI \* radius \* radius;

}

float calculate\_circumference(float radius) {

return 2 \* PI \* radius;

}

2. Write a program to find area of triangle.(Area=(l\*b)/2)

#include <stdio.h>

#include <conio.h>

float calculate\_area(float length, float breadth);

void main() {

float length, breadth, area;

clrscr();

printf("Enter the length of the triangle: ");

scanf("%f", &length);

printf("Enter the breadth of the triangle: ");

scanf("%f", &breadth);

area = calculate\_area(length, breadth);

printf("\nArea of the triangle: %.2f\n", area);

getch();

}

float calculate\_area(float length, float breadth) {

return (length \* breadth) / 2;

}

3. Write a C program to swap two no. (with and without using third no).

x = x + y,y= x - y., x =x - y.

#include <stdio.h>

#include <conio.h>

void swap\_with\_third\_variable(int x, int y);

void swap\_without\_third\_variable(int x, int y);

void main() {

int x, y;

clrscr();

printf("Enter first number: ");

scanf("%d", &x);

printf("Enter second number: ");

scanf("%d", &y);

printf("\nSwapping using third variable:\n");

swap\_with\_third\_variable(x, y);

printf("\nSwapping without using third variable:\n");

swap\_without\_third\_variable(x, y);

getch();

}

void swap\_with\_third\_variable(int x, int y) {

int temp;

temp = x;

x = y;

y = temp;

printf("After swapping, x = %d, y = %d\n", x, y);

}

void swap\_without\_third\_variable(int x, int y) {

x = x + y;

y = x - y;

x = x - y;

printf("After swapping, x = %d, y = %d\n", x, y);

}

4. Write a Program to convert Days into Month and Day use modulo division operator

#include <stdio.h>

#include <conio.h>

void convert\_days\_to\_month\_day(int total\_days);

void main() {

int total\_days;

clrscr();

printf("Enter the total number of days: ");

scanf("%d", &total\_days);

convert\_days\_to\_month\_day(total\_days);

getch();

}

void convert\_days\_to\_month\_day(int total\_days) {

int months, days;

months = total\_days / 30;

days = total\_days % 30;

printf("Months: %d\n", months);

printf("Remaining Days: %d\n", days);

}

5. Write a Program to convert Paisa in to Rupees

#include <stdio.h>

#include <conio.h>

void convert\_paisa\_to\_rupees(int paisa);

void main() {

int paisa;

clrscr();

printf("Enter amount in Paisa: ");

scanf("%d", &paisa);

convert\_paisa\_to\_rupees(paisa);

getch();

}

void convert\_paisa\_to\_rupees(int paisa) {

int rupees;

rupees = paisa / 100; // 1 Rupee = 100 Paisa

paisa = paisa % 100; // Remaining Paisa after converting to Rupees

printf("Rupees: %d\n", rupees);

printf("Remaining Paisa: %d\n", paisa);

}

Day-7

1. Write a C program calculating the simple interest using the formula

SI = (P \* T \* R)/100, where P denotes the principal amount, T time, and R rate of interest.

#include <stdio.h>

#include <conio.h>

void calculate\_simple\_interest(float principal, float time, float rate);

void main() {

float principal, time, rate;

clrscr();

printf("Enter the principal amount: ");

scanf("%f", &principal);

printf("Enter the time (in years): ");

scanf("%f", &time);

printf("Enter the rate of interest (in percentage): ");

scanf("%f", &rate);

calculate\_simple\_interest(principal, time, rate);

getch();

}

void calculate\_simple\_interest(float principal, float time, float rate) {

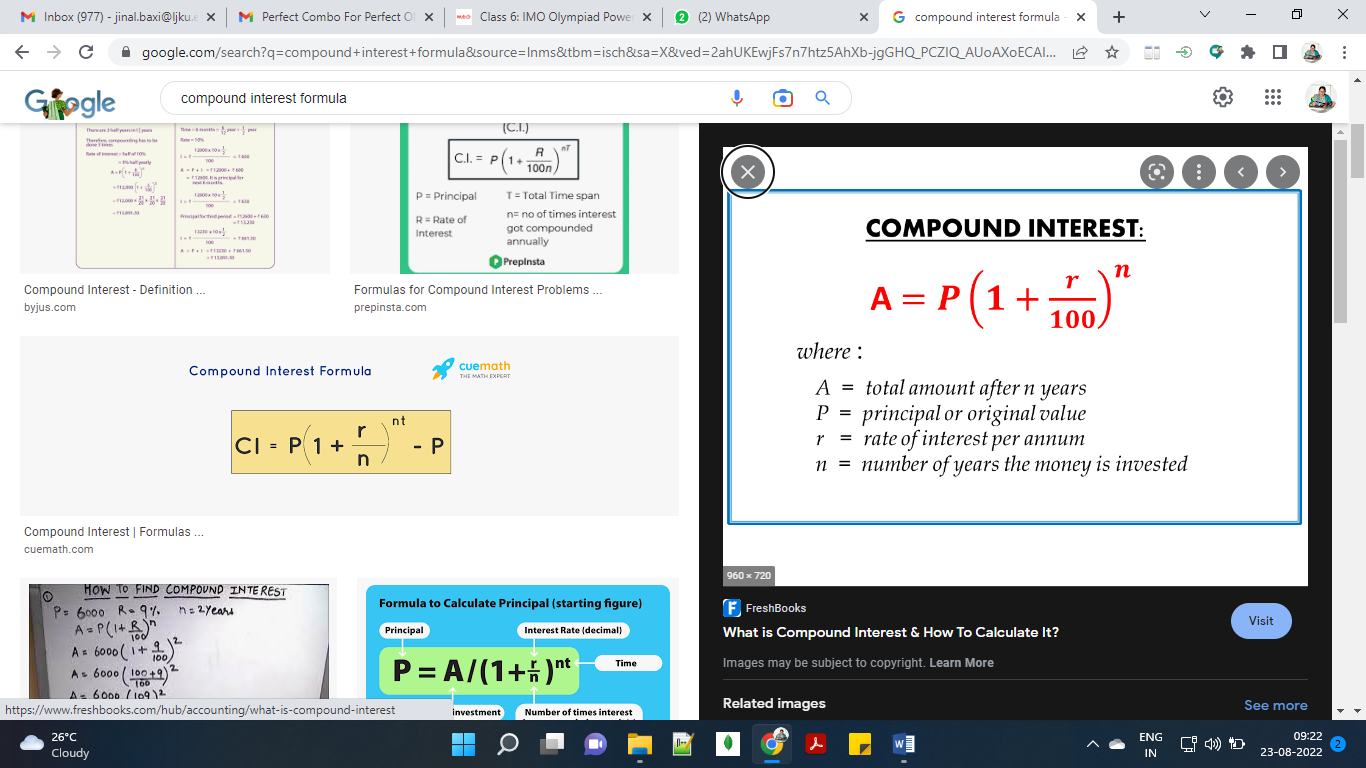
float simple\_interest;

simple\_interest = (principal \* time \* rate) / 100;

printf("The Simple Interest is: %.2f\n", simple\_interest);

}

2. Write a C program for calculating the compound interest using the formula:



#include <stdio.h>

#include <math.h>

void calculate\_compound\_interest(float principal, float rate, int years);

void main() {

float principal, rate, amount;

int years;

printf("Enter the principal amount: ");

scanf("%f", &principal);

printf("Enter the rate of interest (in percentage): ");

scanf("%f", &rate);

printf("Enter the number of years: ");

scanf("%d", &years);

calculate\_compound\_interest(principal, rate, years);

}

void calculate\_compound\_interest(float principal, float rate, int years) {

float amount;

amount = principal \* pow((1 + rate / 100), years);

printf("Total amount after %d years: %.2f\n", years, amount);

printf("Compound Interest: %.2f\n", amount - principal);

}

Day-8

1. Write a C Program to Print student Marksheet of three subjects.

(Marks and student details should be enter by keyboard)

#include <stdio.h>

#include<conio.h>

void print\_marksheet(char name[], int roll\_number, int marks1, int marks2, int marks3);

void main() {

char name[50];

int roll\_number, marks1, marks2, marks3;

printf("Enter student's name: ");

scanf(“ %s”,name);

printf("Enter student's roll number: ");

scanf("%d", &roll\_number);

printf("Enter marks for Subject 1: ");

scanf("%d", &marks1);

printf("Enter marks for Subject 2: ");

scanf("%d", &marks2);

printf("Enter marks for Subject 3: ");

scanf("%d", &marks3);

print\_marksheet(name, roll\_number, marks1, marks2, marks3);

getch();

}

void print\_marksheet(char name[], int roll\_number, int marks1, int marks2, int marks3) {

int total\_marks = marks1 + marks2 + marks3;

float percentage = (float)total\_marks / 3;

printf("\n---------- STUDENT MARKSHEET ----------\n");

printf("Name: %s", name);

printf("Roll Number: %d\n", roll\_number);

printf("Marks in Subject 1: %d\n", marks1);

printf("Marks in Subject 2: %d\n", marks2);

printf("Marks in Subject 3: %d\n", marks3);

printf("--------------------------------------\n");

printf("Total Marks: %d\n", total\_marks);

printf("Percentage: %.2f%%\n", percentage);

}

2. Write a C program to calculate gross salary based on following formula. Gross Pay = Basic + DA + HRA + Conveyance + Medical + Other

Where DA is 10% of basic, HRA is 8% of basic, Conveyance is 5% of basic, medical is10% of basic, traveling allowance is 5% of basic salary.

#include <stdio.h>

#include <conio.h>

void calculate\_gross\_salary(float basic\_salary);

void main() {

float basic\_salary;

clrscr();

printf("Enter the basic salary: ");

scanf("%f", &basic\_salary);

calculate\_gross\_salary(basic\_salary);

getch();

}

void calculate\_gross\_salary(float basic\_salary) {

float DA, HRA, conveyance, medical, other, gross\_salary;

DA = 0.10 \* basic\_salary; // 10% of basic salary

HRA = 0.08 \* basic\_salary; // 8% of basic salary

conveyance = 0.05 \* basic\_salary; // 5% of basic salary

medical = 0.10 \* basic\_salary; // 10% of basic salary

other = 0.05 \* basic\_salary; // 5% of basic salary

gross\_salary = basic\_salary + DA + HRA + conveyance + medical + other;

printf("\n--------- GROSS SALARY ---------\n");

printf("Basic Salary: %.2f\n", basic\_salary);

printf("DA (10%%): %.2f\n", DA);

printf("HRA (8%%): %.2f\n", HRA);

printf("Conveyance (5%%): %.2f\n", conveyance);

printf("Medical (10%%): %.2f\n", medical);

printf("Other (5%%): %.2f\n", other);

printf("---------------------------------\n");

printf("Gross Salary: %.2f\n", gross\_salary);

}

Day-9

1. C program to print ASCII value of a character

#include <stdio.h>

#include <conio.h>

void print\_ascii\_value(char ch);

void main() {

char ch;

clrscr();

printf("Enter a character: ");

scanf("%c", &ch);

print\_ascii\_value(ch);

getch();

}

void print\_ascii\_value(char ch) {

printf("The ASCII value of '%c' is %d\n", ch, ch);

}

2. Write a C Program to create variable using built in datatype (int,float, char,long, short, double) and assign and print the value of each variable.

#include <stdio.h>

#include <conio.h>

void main() {

int int\_var = 10;

float float\_var = 20.5;

char char\_var = 'A';

long long\_var = 1000000;

short short\_var = 1500;

double double\_var = 12345.6789;

clrscr();

printf("Integer value: %d\n", int\_var);

printf("Float value: %.2f\n", float\_var);

printf("Character value: %c\n", char\_var);

printf("Long value: %ld\n", long\_var);

printf("Short value: %d\n", short\_var);

printf("Double value: %.4f\n", double\_var);

getch();

}

Day-10

1. Simple program to demonstrate operator.

#include <stdio.h>

#include <conio.h>

void main() {

int a = 10, b = 5;

float x = 5.5, y = 2.0;

clrscr();

printf("Arithmetic Operators:\n");

printf("a + b = %d\n", a + b);

printf("a - b = %d\n", a - b);

printf("a \* b = %d\n", a \* b);

printf("a / b = %d\n", a / b);

printf("a %% b = %d\n\n", a % b);

printf("Relational Operators:\n");

printf("a > b = %d\n", a > b);

printf("a < b = %d\n", a < b);

printf("a == b = %d\n", a == b);

printf("a != b = %d\n\n", a != b);

printf("Logical Operators:\n");

printf("a > b && b < a = %d\n", (a > b) && (b < a));

printf("a > b || b > a = %d\n", (a > b) || (b > a));

printf("!(a > b) = %d\n\n", !(a > b));

printf("Assignment Operator:\n");

a += 5; // a = a + 5

printf("a += 5: %d\n", a);

a -= 3; // a = a - 3

printf("a -= 3: %d\n", a);

a \*= 2; // a = a \* 2

printf("a \*= 2: %d\n", a);

a /= 4; // a = a / 4

printf("a /= 4: %d\n", a);

getch();

}

2. Write a C Program to find the Size of int, float, double and char datatype.

#include <stdio.h>

#include <conio.h>

void main() {

clrscr();

printf("Size of int: %lu bytes\n", sizeof(int));

printf("Size of float: %lu bytes\n", sizeof(float));

printf("Size of double: %lu bytes\n", sizeof(double));

printf("Size of char: %lu byte\n", sizeof(char));

getch();

}

Day-12

1. Write a program in C to Check whether the two given numbers are equal.

#include <stdio.h>

#include <conio.h>

void main() {

int num1, num2;

clrscr();

printf("Enter first number: ");

scanf("%d", &num1);

printf("Enter second number: ");

scanf("%d", &num2);

if (num1 == num2) {

printf("The two numbers are equal.\n");

} else {

printf("The two numbers are not equal.\n");

}

getch();

}

2. Write a program in C to check whether a number given by the

user is odd or even.

#include <stdio.h>

#include <conio.h>

void main() {

int num;

clrscr();

printf("Enter a number: ");

scanf("%d", &num);

if (num % 2 == 0) {

printf("The number %d is even.\n", num);

} else {

printf("The number %d is odd.\n", num);

}

getch();

}

3. Write a C Program to check whether a character is an alphabet or not using ASCII Value.

#include <stdio.h>

#include <conio.h>

void main() {

char ch;

clrscr();

printf("Enter a character: ");

scanf("%c", &ch);

if ((ch >= 65 && ch <= 90) || (ch >= 97 && ch <= 122)) {

printf("The character '%c' is an alphabet.\n", ch);

} else {

printf("The character '%c' is not an alphabet.\n", ch);

}

getch();

}

Day-13

1. Write a C Program to create a simple calculator. Take the two number from the user and one character as operator(‘+’,‘-’,‘\*’, ‘/’ ,‘%’)(using if….else if)

#include <stdio.h>

#include <conio.h>

void main() {

float num1, num2, result;

char operator;

clrscr();

printf("Enter first number: ");

scanf("%f", &num1);

printf("Enter second number: ");

scanf("%f", &num2);

printf("Enter operator (+, -, \*, /, %%): ");

scanf(" %c", &operator);

if (operator == '+') {

result = num1 + num2;

printf("Result: %.2f\n", result);

}

else if (operator == '-') {

result = num1 - num2;

printf("Result: %.2f\n", result);

}

else if (operator == '\*') {

result = num1 \* num2;

printf("Result: %.2f\n", result);

}

else if (operator == '/') {

if (num2 != 0) {

result = num1 / num2;

printf("Result: %.2f\n", result);

} else {

printf("Error: Division by zero is not allowed.\n");

}

}

else if (operator == '%') {

if ((int)num2 != 0) {

result = (int)num1 % (int)num2;

printf("Result: %.0f\n", result);

} else {

printf("Error: Division by zero is not allowed.\n");

}

}

else {

printf("Invalid operator.\n");

}

getch();

}

2. Write a program to read marks from keyboard and your program should display equivalent grade according following table

(if-else if ladder)

Marks Grade

----------------------

80-100 Distinction

60-79 First Class

35-59 Second Class

0-34 Fail

#include <stdio.h>

#include <conio.h>

void main() {

int marks;

clrscr();

printf("Enter marks: ");

scanf("%d", &marks);

if (marks >= 80 && marks <= 100) {

printf("Grade: Distinction\n");

}

else if (marks >= 60 && marks <= 79) {

printf("Grade: First Class\n");

}

else if (marks >= 35 && marks <= 59) {

printf("Grade: Second Class\n");

}

else if (marks >= 0 && marks <= 34) {

printf("Grade: Fail\n");

}

else {

printf("Invalid marks entered.\n");

}

getch();

}

Day-14

1. Write a program in C to calculate gross salary of employee using :

Gross Salary = Basic Pay + DA + HRA – PF.

DA = 30% If Basic Pay < 5000 otherwise DA = 45% of the Basic Pay.

HRA = 15% of Basic Pay.

PF = 12% of Basic Pay.

#include <stdio.h>

#include <conio.h>

void main() {

float basicPay, DA, HRA, PF, grossSalary;

clrscr();

printf("Enter Basic Pay: ");

scanf("%f", &basicPay);

if (basicPay < 5000) {

DA = 0.30 \* basicPay;

} else {

DA = 0.45 \* basicPay;

}

HRA = 0.15 \* basicPay;

PF = 0.12 \* basicPay;

grossSalary = basicPay + DA + HRA - PF;

printf("Gross Salary = %.2f\n", grossSalary);

getch();

}

2. Write a C program to find out given year, which is leap or not. Hint :( A year is a leap year which is divisible by 100 then it check it is divisible by 400, if yes so it is leap year. If it is not divisible by 100 so it check is divisible by 4 if yes, so it is leap year else it is not leap year)

#include <stdio.h>

#include <conio.h>

int isLeapYear(int year);

void main() {

int year;

clrscr();

printf("Enter a year: ");

scanf("%d", &year);

if (isLeapYear(year)) {

printf("%d is a leap year.\n", year);

} else {

printf("%d is not a leap year.\n", year);

}

getch();

}

int isLeapYear(int year) {

if ((year % 400 == 0) || (year % 100 != 0 && year % 4 == 0)) {

return 1;

} else {

return 0;

}

}

**Day-15**

1. Write a program to check eligibility of student for admission.

Student should fulfill the following criteria for admission :

Mathematics >= 50, Physics >= 45, Chemistry >= 60,

Total of all subject >= 170

OR

Total of Mathematics + Physics >= 120

Accept the marks of all the three subjects from the user and check if the student is eligible for admission.

Print the message : Student is eligible for Admission

OR

Student is not eligible for admission

#include <stdio.h>

#include <conio.h>

int checkEligibility(int math, int physics, int chemistry);

void main() {

int math, physics, chemistry;

clrscr();

printf("Enter marks for Mathematics: ");

scanf("%d", &math);

printf("Enter marks for Physics: ");

scanf("%d", &physics);

printf("Enter marks for Chemistry: ");

scanf("%d", &chemistry);

if (checkEligibility(math, physics, chemistry)) {

printf("Student is eligible for Admission.\n");

} else {

printf("Student is not eligible for Admission.\n");

}

getch();

}

int checkEligibility(int math, int physics, int chemistry) {

int total = math + physics + chemistry;

if ((math >= 50 && physics >= 45 && chemistry >= 60 && total >= 170) || (math + physics >= 120)) {

return 1;

} else {

return 0;

}

}

**Day-16**

1. Write a program that read a number from 1 TO 7 and then print corresponding day name from the week using switch-case

#include <stdio.h>

#include <conio.h>

void printDayName(int day);

void main() {

int day;

clrscr();

printf("Enter a number between 1 and 7: ");

scanf("%d", &day);

printDayName(day);

getch();

}

void printDayName(int day) {

switch(day) {

case 1:

printf("Monday\n");

break;

case 2:

printf("Tuesday\n");

break;

case 3:

printf("Wednesday\n");

break;

case 4:

printf("Thursday\n");

break;

case 5:

printf("Friday\n");

break;

case 6:

printf("Saturday\n");

break;

case 7:

printf("Sunday\n");

break;

default:

printf("Invalid input! Please enter a number between 1 and 7.\n");

}

}

2. Write a C program to check whether given character is VOWEL or CONSONANT using switch.

(Hint : Vowels : a, e, i, o, u

Consonants : Rest of the alphabet characters )

#include <stdio.h>

#include <conio.h>

void checkVowelOrConsonant(char ch);

void main() {

char ch;

clrscr();

printf("Enter a character: ");

scanf("%c", &ch);

checkVowelOrConsonant(ch);

getch();

}

void checkVowelOrConsonant(char ch) {

switch(ch) {

case 'a':

case 'A':

case 'e':

case 'E':

case 'i':

case 'I':

case 'o':

case 'O':

case 'u':

case 'U':

printf("%c is a Vowel.\n", ch);

break;

default:

if ((ch >= 'a' && ch <= 'z') || (ch >= 'A' && ch <= 'Z')) {

printf("%c is a Consonant.\n", ch);

} else {

printf("%c is not an alphabet.\n", ch);

}

}

}

3. Write a C program for calculator with basic operations (+,-,\*, /). User needs to provide two numbers and an operator from above list. Program should print the values inserted along with its answer. Use the switch statement for the same. If user inserts wrong choice, program should print the appropriate message.

#include <stdio.h>

#include <conio.h>

void performOperation(float num1, float num2, char operator);

void main() {

float num1, num2;

char operator;

clrscr();

printf("Enter first number: ");

scanf("%f", &num1);

printf("Enter second number: ");

scanf("%f", &num2);

printf("Enter operator (+, -, \*, /): ");

scanf(" %c", &operator

performOperation(num1, num2, operator);

getch();

}

void performOperation(float num1, float num2, char operator) {

switch(operator) {

case '+':

printf("%.2f %c %.2f = %.2f\n", num1, operator, num2, num1 + num2);

break;

case '-':

printf("%.2f %c %.2f = %.2f\n", num1, operator, num2, num1 - num2);

break;

case '\*':

printf("%.2f %c %.2f = %.2f\n", num1, operator, num2, num1 \* num2);

break;

case '/':

if (num2 != 0) {

printf("%.2f %c %.2f = %.2f\n", num1, operator, num2, num1 / num2);

} else {

printf("Error! Division by zero.\n");

}

break;

default:

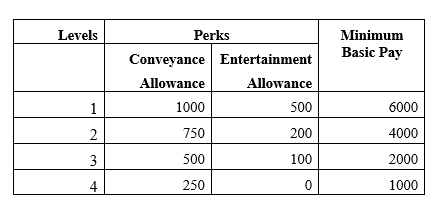
printf("Invalid operator! Please enter one of the following: +, -, \*, /.\n");

}

}

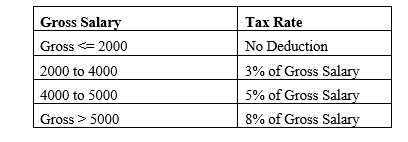
**Day-17**

1. A manufacturing company classified its executives into 4 levels for the benefit of certain perks. The levels and corresponding perks are shown below (All figures are in Rs.):



Income tax is deducted from the salary on a percentage basis as follows.

Write a program that will read an executive's job number, level number and basic pay and then compute the net salary after withholding (deducting) Income tax. Gross Salary = Basic + HRA + Perks ( HRA = 10% of Basic) Net Salary = Gross Salary – Income Tax.



#include<stdio.h>

#include<conio.h>

void pay\_slip(int level)

{

 int CA,EA,bas\_sal;

  double gross\_sal;

   float incomtax;

    double net\_sal ;

 if(level == 1)

 {

  CA=1000;

  EA=500;

 }

 else if(level == 2)

 {

 CA=750;

 EA=200;

 }

 else if(level == 3)

 {

 CA=500;

 EA=100;

 }

 else if(level ==4)

 {

 CA=250;

 EA=0;

 }

 else

 {

 CA=0;

 EA=0;

 }

 printf("enter basic salary:");

 scanf("%d",&bas\_sal);

 gross\_sal = bas\_sal + (bas\_sal\*0.10) + (CA+EA);

 if(gross\_sal<=2000)

 {

 incomtax = gross\_sal - 0;

 }

 else if(gross\_sal >= 2000 && gross\_sal < 4000)

 {

 incomtax = gross\_sal \* 0.03;

 }

 else if(gross\_sal >= 4000  && gross\_sal < 5000)

 {

 incomtax = gross\_sal \* 0.05;

 }

 else if(gross\_sal >5000)

 {

 incomtax = gross\_sal \* 0.08;

 }

 net\_sal = gross\_sal - incomtax;

 printf("net salary is:%2.lf",net\_sal);

}

void main()

{

 int level;

 clrscr();

 printf("enter level:");

 scanf("%d",&level);

 pay\_slip(level);

 getch();

}

**Day-18**

1. Write a program in C to display a first N numbers.

#include <stdio.h>

#include<conio.h>

void displayNumbers(int N);

void main() {

int N;

printf("Enter the value of N: ");

scanf("%d", &N);

displayNumbers(N);

getch();

}

void displayNumbers(int N) {

for(int i = 1; i <= N; i++) {

printf("%d ", i);

}

printf("\n");

}

2. Write a program to Print multiplication table of given number entered by user.

#include <stdio.h>

#include <conio.h>

void printTable(int num);

void main() {

int num;

clrscr();

printf("Enter a number: ");

scanf("%d", &num);

printTable(num);

getch();

}

void printTable(int num) {

for(int i = 1; i <= 10; i++) {

printf("%d x %d = %d\n", num, i, num \* i);

}

}

1. Write a program in C to display a sum of first N even numbers.

#include <stdio.h>

#include <conio.h>

void sumEvenNumbers(int N);

void main() {

int N;

clrscr();

printf("Enter the value of N: ");

scanf("%d", &N);

sumEvenNumbers(N);

getch();

}

void sumEvenNumbers(int N) {

int sum = 0;

for(int i = 1; i <= N; i++) {

sum += 2 \* i;

}

printf("The sum of the first %d even numbers is: %d\n", N, sum);

}

1. Write a program in C to find out factorial of a given number.

#include <stdio.h>

#include <conio.h>

long int factorial(int n);

void main() {

int num;

long int result;

clrscr();

printf("Enter a number: ");

scanf("%d", &num);

result = factorial(num);

printf("The factorial of %d is: %ld\n", num, result);

getch();

}

long int factorial(int n) {

if (n == 0 || n == 1)

return 1;

else

return n \* factorial(n - 1);

}

**Day-19**

1. Write a program in C to display a sum of even numbers up to N with while and do while loop. Take N from the user. If user gives 10 as input then sum=2+4+6+8+10.

#include <stdio.h>

#include <conio.h>

void sumEvenNumbersWhile(int N);

void sumEvenNumbersDoWhile(int N);

void main() {

int N;

clrscr();

printf("Enter a number N: ");

scanf("%d", &N);

printf("\nSum of even numbers using while loop: ");

sumEvenNumbersWhile(N);

printf("\nSum of even numbers using do-while loop: ");

sumEvenNumbersDoWhile(N);

getch();

}

void sumEvenNumbersWhile(int N) {

int sum = 0, i = 2;

while(i <= N) {

sum += i;

i += 2

}

printf("%d", sum);

}

void sumEvenNumbersDoWhile(int N) {

int sum = 0, i = 2;

do {

sum += i;

i += 2;

} while(i <= N);

printf("%d", sum);

}

2. Find out the sum of the following series:

1+2+3+……+n . Take n as input from the user.

#include <stdio.h>

#include <conio.h>

void sumSeries(int n);

void main() {

int n;

clrscr();

printf("Enter the value of n: ");

scanf("%d", &n);

sumSeries(n);

getch();

}

void sumSeries(int n) {

int sum = 0;

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

sum += I;

}

printf("The sum of the series 1 + 2 + ... + %d is: %d\n", n, sum);

}

3. Find out the sum of the following series :

12 +22 +32 +42 ….. up to nth terms . If user enters n=5 then it will do the sum of 12 +22 +32 +42+52 .

#include <stdio.h>

#include <conio.h>

void sumSeries(int n);

void main() {

int n;

clrscr();

printf("Enter the value of n: ");

scanf("%d", &n);

sumSeries(n);

getch();

}

void sumSeries(int n) {

int sum = 0;

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

sum += (i \* 10 + 2);

}

printf("The sum of the series 12 + 22 + 32 + ... up to %d terms is: %d\n", n, sum);

}

**Day-20**

1. Find out the sum of the following series

1 +1/4 +1/9 +1/16 +….n terms.

If user enters n=4 then it will do the sum like 1+ 1/4 + 1/9 +1/16

#include <stdio.h>

#include <conio.h>

void sumSeries(int n);

void main() {

int n;

clrscr();

printf("Enter the value of n: ");

scanf("%d", &n);

sumSeries(n);

getch();

}

void sumSeries(int n) {

float sum = 0.0;

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

sum += 1.0 / (i \* i);

}

printf("The sum of the series 1 + 1/4 + 1/9 + 1/16 + ... up to %d terms is: %.4f\n", n, sum);

}

1. Write a C program to check whether the given number is perfect or not. Hint: A perfect number is a positive integer that is equal to the sum of its positive divisors, excluding the number itself. For example, 6 is a positive number that is completely divisible by 1, 2, and 3. When we add these divisors (1 + 2 + 3 = 6), it produces 6, which is equal to the number that we have considered. So, we can say that 6 is a perfect number.

#include <stdio.h>

#include <conio.h>

void checkPerfectNumber(int num);

void main() {

int num;

clrscr();

printf("Enter a number: ");

scanf("%d", &num);

checkPerfectNumber(num);

getch();

}

void checkPerfectNumber(int num) {

int sum = 0;

for(int i = 1; i <= num / 2; i++) {

if(num % i == 0) {

sum += i; // Add divisor to sum

}

}

if(sum == num) {

printf("%d is a Perfect Number.\n", num);

} else {

printf("%d is not a Perfect Number.\n", num);

}

}

**Day-21,22,23,24 All Pattern**

Program:61

#include<stdio.h>

#include<conio.h>

void pattern\_61(int n)

{

int i,j;

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

{

for(j=1; j<=n; j++)

{

printf("%d ",j);

}

printf("\n");

}

}

void main()

{

int n;

clrscr();

printf("enter n:");

scanf("%d",&n);

pattern\_61(n);

getch();

}

Program:62

#include<stdio.h>

#include<conio.h>

void pattern\_62(int n)

{

int i,j;

int nm=1;

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

{

for(j=1; j<=n; j++)

{

printf("%d ",nm);

nm++;

}

printf("\n");

}

}

void main()

{

int n;

clrscr();

printf("enter n:");

scanf("%d",&n);

pattern\_62(n);

getch();

}

Program:63

#include<stdio.h>

#include<conio.h>

void pattern\_63(int n)

{

int i,j;

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

{

for(j=1; j<=n-i; j++)

{

printf(" ");

}

for(j=1; j<=i; j++)

{

printf("\*");

}

printf("\n");

}

}

void main()

{

int n;

clrscr();

printf("enter n:");

scanf("%d",&n);

pattern\_63(n);

getch();

}

Program:64

#include<stdio.h>

#include<conio.h>

void pattern\_64(int n)

{

int i,j;

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

{

for(j=1; j<=i; j++)

{

printf("\*");

}

printf("\n");

}

}

void main()

{

int n;

clrscr();

printf("enter n:");

scanf("%d",&n);

pattern\_64(n);

getch();

}

Program:65

#include<stdio.h>

#include<conio.h>

void pattern\_63(int n)

{

int i,j;

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

{

for(j=1; j<=n-i; j++)

{

printf(" ");

}

for(j=1; j<=i; j++)

{

printf(" \* ");

}

printf("\n");

}

}

void main()

{

int n;

clrscr();

printf("enter n:");

scanf("%d",&n);

pattern\_63(n);

getch();

}

Program:66

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j,k;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

for(j=1; j<=n-i+1; j++)

{

printf(" ");

}

for(k=1; k<=i; k++)

{

printf("%d ",k);

}

printf("\n");

}

getch();

}

Program:67

#include<stdio.h>

#include<conio.h>

void pattern\_67(int n)

{

int i,j;

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

{

for(j=1; j<=n-i; j++)

{

printf(" ");

}

for(j=1; j<=i; j++)

{

printf(" %d ",i);

}

printf("\n");

}

}

void main()

{

int n;

clrscr();

printf("enter n:");

scanf("%d",&n);

pattern\_67(n);

getch();

}

Program:68

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j,k;

int num;

clrscr();

printf("enter n:");

scanf("%d",&n);

num=n;

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

{

for(j=1; j<i; j++)

{

printf(" ");

}

for(k=1; k<=n-i+1; k++)

{

printf("%d ",num);

}

num-=1;

printf("\n");

}

getch();

}

Program:69

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j,k;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

for(j=1; j<i; j++)

{

printf(" ");

}

for(k=1; k<=n-i+1; k++)

{

printf("$");

}

printf("\n");

}

getch();

}

Program:70

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j,k;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

for(j=1; j<=n-i+1; j++)

{

printf("$");

}

printf("\n");

}

getch();

}

Program:71

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j;

int k=1;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

for(j=1; j<=i; j++)

{

printf("%d ",k++);

}

printf("\n");

}

getch();

}

Program:72

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j;

int k=1;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

k=1;

for(j=1; j<=i; j++)

{

printf("%d",k++);

}

printf("\n");

}

getch();

}

Program:73

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j,k;

int num=1;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

for(j=1; j<=n-i+1; j++)

{

printf("%d ",num++);

}

printf("\n");

}

getch();

}

Program:74

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j,k;

int num=1;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

num=1;

for(j=1; j<=n-i+1; j++)

{

printf("%d ",num++);

}

printf("\n");

}

getch();

}

Program:75

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j,k;

int num=1;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

for(j=1; j<=i; j++)

{

printf(" ");

}

for(k=1; k<=n-i; k++)

{

printf("%d ",num++);

}

printf("\n");

}

getch();

}

Program:76

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j,k;

int num;

clrscr();

printf("enter n:");

scanf("%d",&n);

num = n\*n;

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

{

for(j=1; j<=n; j++)

{

printf("%d ",num--);

}

printf("\n");

}

getch();

}

Program:77

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j,k,num;

clrscr();

printf("enter n:");

scanf("%d",&n);

num = n\*2;

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

{

for(j=1; j<i; j++)

{

printf(" ");

}

for(k=1; k<=n-i+1; k++)

{

printf("%d ",num--);

}

printf("\n");

}

getch();

}

Program:78

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

for(j=1; j<=i; j++)

{

printf("%d",j);

}

for(j=1; j<=(n-i)\*2-1; j++)

{

printf(" ");

}

for(j=i; j>=1; j--)

{

if(j!=n)

{

printf("%d",j);

}

}

printf("\n");

}

getch();

}

Program:79

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i, j;

char ch;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

ch='A';

for(j=1; j<=i; j++)

{

if(i%2!=0)

{

printf("%d ",j);

}else

{

printf("%c ",ch++);

}

}

printf("\n");

}

getch();

}

Program:80

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i, j;

char ch;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

ch='A';

for(j=1; j<=i; j++)

{

printf("%c ",ch++);

}

printf("\n");

}

getch();

}

Program:81

#include<stdio.h>

#include<conio.h>

void pattern(int);

void main()

{

int n;

clrscr();

printf("\n Enter Range :");

scanf("%d",&n);

pattern(n);

getch();

}

void pattern(int n)

{

int i,j,k;

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

{

for(j=n; j>i; j--)

{

printf(" ");

}

for(k=1; k<=i; k++)

{

printf("\* ");

}printf("\n");

}

for(i=2; i<=n; i++)

{

for(k=1; k<=i; k++)

{

printf(" ");

}

for(j=n; j>i; j--)

{

printf(" \*");

}printf("\n");

}

}

Program:82

#include<stdio.h>

#include<conio.h>

void pattern(int);

void main()

{

int n;

clrscr();

printf("\n Enter Range :");

scanf("%d",&n);

pattern(n);

getch();

}

void pattern(int n)

{

int i,j,k;

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

{

for(j=n; j>=i; j--)

{

printf(" ");

}

for(k=1; k<=i; k++)

{

If(k==1 || k==i)

{

printf(" \*");

}

else{

printf(" ");

}

}printf("\n");

}

for(i=2; i<=n; i++)

{

for(k=1; k<=i; k++)

{

printf(" ");

}

for(j=n; j>=i; j--)

{

If(j==n || j==i)

{

printf(" \*");

}

else{

printf(" ");

}

}printf("\n");

}

}

Program:83

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

for(j=1; j<=n; j++)

{

if(i==1 || j==1 || i==n || j==n)

{

printf("\* ");

}else{

printf(" ");

}

}

printf("\n");

}

getch();

}

Program:84

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

for(j=1; j<=i; j++)

{

printf("\*");

}

for(j=1; j<=(n-i)\*2; j++)

{

printf(" ");

}

for(j=i; j>=1; j--)

{

printf("\*");

}

printf("\n");

}

getch();

}

Program:85

#include<stdio.h>

#include<conio.h>

int factorial(int);

int combination(int , int);

void main() {

int n,i,j,k;

clrscr();

printf("Enter Range ");

scanf("%d", &n);

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

{

for (k = 0; k < n - i - 1; k++)

{

printf(" ");

}

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

{

printf("%4d", combination(i, j));

}

printf("\n");

}

getch();

}

int factorial(int n) {

int fact = 1,i;

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

fact \*= i;

}

return fact;

}

int combination(int n, int r) {

return factorial(n) / (factorial(r) \* factorial(n - r));

}

Program:86

#include<stdio.h>

#include<conio.h>

void pattern(int);

void main()

{

int n;

clrscr();

printf("\n Enter Range :");

scanf("%d",&n);

pattern(n);

getch();

}

void pattern(int n)

{

int i,j,k;

for(i=n; i>=n; i--)

{

for(j=n; j>i; j--)

{

printf(" ");

}

for(k=1; k<=i; k++)

{

printf(" %c ",k+96);

}printf("\n");

}

}

Program:87

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j,flg=1;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

if(i%2==0){

flg=0;

}else{

flg=1;

}

for(j=1; j<=i; j++)

{

if(flg==1)

{

printf("%d ",flg);

flg=0;

}

else{

printf("%d ",flg);

flg=1;

}

}

printf("\n");

}

getch();

}

Program:88

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j,num;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

num=1;

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

printf("%d ",num);

num+=2;

}

printf("\n");

}

getch();

}

Program:89

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

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

{

printf(" ");

}

for(j=1; j<=n-i; j++)

{

printf("%d ",j\*j);

}

printf("\n");

}

getch();

}

Program:90

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j,flg=1;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

for(j=1; j<=n; j++)

{

if(flg==1){

printf("A ");

flg=0;

}else{

printf("a ");

flg=1;

}

}

printf("\n");

}

getch();

}

Program:91

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,j;

char ch='a';

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

for(j=1; j<=n; j++)

{

printf("%c ",ch++);

}

printf("\n");

}

getch();

}

Program:92

#include<stdio.h>

#include<conio.h>

void pattern(int);

void main()

{

int n;

clrscr();

printf("\n Enter Range :");

scanf("%d",&n);

pattern(n);

getch();

}

void pattern(int n)

{

int i,j,k=97;

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

{

for(j=1; j<=n; j++)

{

printf(" %c",k++);

}

printf("\n");

}

}

Program:93

#include<stdio.h>

#include<conio.h>

void pattern(int);

void main()

{

int n;

clrscr();

printf("\n Enter Range :");

scanf("%d",&n);

pattern(n);

getch();

}

void pattern(int n);

{

int i,j,k;

for(i=n; i>=1; i--)

{

for(j=1; j<=i; j++)

{

printf(" \*");

}

for(k=n; k>1; k--)

{

printf(" ");

}

for(j=1; j<=i; j++)

{

printf(" \*")l

}

printf("\n");

}

}

Program:93

#include<stdio.h>

#include<conio.h>

void pattern(int);

void main()

{

int n;

clrscr();

printf("\n Enter Range :");

scanf("%d",&n);

pattern(n);

getch();

}

void pattern(int n)

{

int i,j,k;

for(i=n; i>=1; i--)

{

for(j=1; j<=i; j++)

{

printf(" \*");

}

for(k=n; k>1; k--)

{

printf(" ");

}

for(j=1; j<=i; j++)

{

printf(" \*")l

}

printf("\n");

}

}

Program:94

#include<stdio.h>

#include<conio.h>

void pattern(int);

void main()

{

int n;

clrscr();

printf("\n Enter Range :");

scanf("%d",&n);

pattern(n);

getch();

}

void pattern(int n)

{

int i,j,k;

for(i=n; i>=1; i--)

{

for(j=1; j<=i; j++)

{

printf(" \*");

}

for(k=n; k>i; k--)

{

printf(" ");

}

for(j=1; j<=i; j++)

{

printf(" \*");

}

printf("\n");

}

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

{

for(j=1; j<=i; j++)

{

printf(" \*");

}

for(k=n; k>i; k--)

{

printf(" ");

}

for(j=1; j<=i; j++)

{

printf(" \*")

}

printf("\n");

}

}

Program:95

#include<stdio.h>

#include<conio.h>

#include<math.h>

void sum(int);

void main()

{

int a;

clrscr();

printf("\n Enter Range:");

scanf("%d",&a);

sum(a);

getch();

}

void sum(int n)

{

int i;

long int total=0;

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

{

total+=I;

printf("%d+",i);

}

printf("\n Total of Series :%ld",total);

}

Program:96

#include<stdio.h>

#include<conio.h>

#include<math.h>

void sum(int);

void main()

{

int a;

clrscr();

printf("\n Enter Range:");

scanf("%d",&a);

sum(a);

getch();

}

void sum(int n)

{

int i;

long int total=0;

for(i=2; i<=n; i=i+2)

{

total+=i

printf("%d+",i);

}

printf("\n Total of Series :%ld",total);

}

Program:97

#include<stdio.h>

#include<conio.h>

#include<math.h>

void sum(int);

void main()

{

int a;

clrscr();

printf("\n Enter Range:");

scanf("%d",&a);

sum(a);

getch();

}

void sum(int n)

{

int i;

long int total=0;

for(i=1; i<=n; i=i+2)

{

total+=i

printf("%d+",i);

}

printf("\n Total of Series :%ld",total);

}

Program:98

#include<stdio.h>

#include<conio.h>

#include<math.h>

void sum(int);

void main()

{

int a;

clrscr();

printf("\n Enter Range:");

scanf("%d",&a);

sum(a);

getch();

}

void sum(int n)

{

int i;

long int total=0;

for(i=12; i<=n; i=i+10)

{

total+=i

printf("%d+",i);

}

printf("\n Total of Series :%ld",total);

}

Program:99

#include<stdio.h>

#include<conio.h>

#include<math.h>

void sum(int);

void main()

{

int a;

clrscr();

printf("\n Enter Range:");

scanf("%d",&a);

sum(a);

getch();

}

void sum(int n)

{

int i;

long int total=0;

for(i=22; i<=n; i=i+20)

{

total+=i

printf("%d+",i);

}

printf("\n Total of Series :%ld",total);

}

Program:100

#include<stdio.h>

#include<conio.h>

void main()

{

int flag=0;

int n,i;

int sum=0;

clrscr();

printf("enter n:");

scanf("%d",&n);

for(i=22; i<=n; i+=20)

{

//printf("%d - %d + %d = %d",sum,i);

if(flag == 0)

{

sum+=i;

printf("%d -",i);

flag=1;

}

else{

sum-=i;

printf("%d +",i);

flag=0;

}

}

printf("= %d",sum);

getch();

}

Program:101

#include<stdio.h>

#include<conio.h>

void series\_101(int n)

{

int sum=0;

int i;

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

{

printf("%d\*%d + ",i,i);

sum += i\*i;

}

printf("sum is:%d",sum);

}

void main()

{

int n;

clrscr();

printf("enter n:");

scanf("%d",&n);

series\_101(n);

getch();

}

Program:102

#include<stdio.h>

#include<conio.h>

void main()

{

int flag=1;

int n,i;

int sum=0;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

//printf("%d - %d + %d = %d",sum,i);

if(flag == 0)

{

sum-=i\*i;

printf("%d -",i\*i);

flag=1;

}

else{

sum+=i\*i;

printf("%d +",i\*i);

flag=0;

}

}

printf("= %d",sum);

getch();

}

Program:103

#include<stdio.h>

#include<conio.h>

void main()

{

int flag=1;

int n,i;

int sum=0;

clrscr();

printf("enter n:");

scanf("%d",&n);

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

{

//printf("%d - %d + %d = %d",sum,i);

if(flag == 0)

{

sum-=i\*i;

printf("%d -",i\*i);

flag=1;

}

else{

sum+=i\*i;

printf("%d +",i\*i);

flag=0;

}

}

printf("= %d",sum);

getch();

}

Program:104

#include<stdio.h>

#include<conio.h>

void fac\_series(int n)

{

long int sum=0;

int i,j;

int fac=1;

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

{

for(j=1; j<=i; j++)

{

fac\*=j;

}

printf("%d! +",i);

sum +=fac;

printf("\nfac:%d\n",fac);

fac=1;

}

printf("= %ld",sum);

}

void main()

{

int n;

clrscr();

printf("enter n:");

scanf("%d",&n);

fac\_series(n);

getch();

}

Program:105

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i;

double ans= 0;

clrscr();

printf("enter n:");

scanf("%d",&n);

for(i=22; i<=n; i=i+20)

{

ans+= 1.0/i;

printf("1/%d +",i);

}

printf(" =%lf",ans);

getch();

}

Program:106

#include<stdio.h>

#include<conio.h>

int factorial(int n)

{

int fac=1,i;

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

{

fac\*=i;

}

return fac;

}

void main()

{

int n,i;

int x =5;

int sum=0;

clrscr();

printf("enter n:");

scanf("%d",&n);

for(i=2; i<=n; i++)

{

sum += x+pow(x,i)/factorial(i);

printf("%d+%d^%d/%d + ",x,x,i,factorial(i));

}

printf("= %d",sum);

getch();

}

Program:107

#include<stdio.h>

#include<conio.h>

int factorial(int n)

{

int fac=1,i;

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

{

fac\*=i;

}

return fac;

}

void main()

{

int n,i;

int x =5;

int sum=0;

clrscr();

printf("enter n:");

scanf("%d",&n);

for(i=3; i<=n; i=i+2)

{

sum += x+pow(x,i)/factorial(i);

printf("%d+%d^%d/%d + ",x,x,i,factorial(i));

}

printf("= %d",sum);

getch();

}

Program:108

#include<stdio.h>

#include<conio.h>

#include<math.h>

void main()

{

int x,n,i;

int sum=0;

clrscr();

printf("enter x:");

scanf("%d",&x);

printf("enter n:");

scanf("%d",&n);

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

{

sum+=pow(x,i);

}

printf("sum is:%d",sum);

getch();

}

Program:109

#include<stdio.h>

#include<conio.h>

void series\_109(int n)

{

int i;

long int sum =0;

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

{

sum += i\*i;

}

printf("sum is:%ld",sum);

}

void main()

{

int n;

clrscr();

printf("enter n:");

scanf("%d",&n);

series\_109(n);

getch();

}

Program:110

#include<stdio.h>

#include<conio.h>

void series\_110(int n)

{

int i;

double sum=0.0;

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

{

sum += (double)(1.0/(i\*i));

}

printf("sum is:%lf",sum);

}

void main()

{

int n;

clrscr();

printf("enter n:");

scanf("%d",&n);

series\_110(n);

getch();

}

Program:111

#include<stdio.h>

#include<conio.h>

#include<math.h>

void series(int);

void main()

{

int a;

clrscr();

printf("\n Enter Range:");

scanf("%d",&a);

series(a);

getch();

}

void series(int r)

{

long i,a;

double sum=0,m=1;

for(i=1; i<=r; i++)

{

if(i%2==0)

{

a=pow(i,2);

m=(double)1/a;

sum=(double)sum-m;

printf(" 1/%d + ",a);

}

else{

a=pow(i,2);

m=(double)1/a;

sum=(double)sum+m;

printf(" 1/%d - ",a);

}

}

printf("\n Sum Of series is :%.2lf",sum);

}

Program:112

#include<stdio.h>

#include<conio.h>

#include<Math.h>

int factorial(int n)

{

int fac =1,i;

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

{

fac\*=i;

}

return fac;

}

void series\_112(int n){

int x,i,pw;

int sum=x;

printf("enter x:");

scanf("%d",&x);

for(i=2; i<=n; i=i+2)

{

pw=pow(x,i);

sum += pw/factorial(i);

printf(" (%ld/%ld) + ",pw, factorial(i));

}

printf("sum is:%d",sum);

}

void main()

{

int n;

clrscr();

printf("enter n:");

scanf("%d",&n);

series\_112(n);

getch()

}

**Day 25**

1.Write a program to accept numbers from the user till their sum exceeds 50.

#include <stdio.h>

#include <conio.h>

void main() {

int number, sum = 0;

clrscr();

while (sum <= 50) {

printf("Enter a number: ");

scanf("%d", &number);

sum += number;

}

printf("\nSum exceeded 50. Final Sum: %d\n", sum);

getch();

}

2.Print first 50 odd numbers. Note that program should display only five numbers per line.

#include <stdio.h>

#include <conio.h>

void printOddNumbers() {

int count = 0, number = 1;

while (count < 50) {

printf("%d\t", number);

number += 2;

count++;

if (count % 5 == 0) {

printf("\n");

}

}

}

void main() {

clrscr();

printOddNumbers();

getch();

}

3. Write a program to find sum of all digits of given number.

#include <stdio.h>

#include <conio.h>

int sumOfDigits(int number) {

int sum = 0;

while (number > 0) {

sum += number % 10;

number /= 10;

}

return sum;

}

void main() {

int number, result;

clrscr();

printf("Enter a number: ");

scanf("%d", &number);

result = sumOfDigits(number);

printf("Sum of all digits: %d\n", result);

getch();

}

4. Write a program to print all the numbers and sum of all the integers that are greater than 100 and less than 200 and are divisible by 7.

#include <stdio.h>

#include <conio.h>

void printNumbersAndSum() {

int sum = 0;

printf("Numbers divisible by 7 between 100 and 200:\n");

for (int i = 101; i < 200; i++) {

if (i % 7 == 0) {

printf("%d ", i);

sum += i;

}

}

printf("\nSum of these numbers: %d\n", sum);

}

void main() {

clrscr();

printNumbersAndSum();

getch();

}

**Day 26**

1.Write a program to find reverse of a given number.

#include <stdio.h>

#include <conio.h>

int reverseNumber(int number) {

int reverse = 0;

while (number != 0) {

reverse = reverse \* 10 + number % 10;

number /= 10;

}

return reverse;

}

void main() {

int number, result;

clrscr();

printf("Enter a number: ");

scanf("%d", &number);

result = reverseNumber(number);

printf("Reverse of the number: %d\n", result);

getch();

}

2. To check whether the giver number is palindrome or not.

#include <stdio.h>

#include <conio.h>

int isPalindrome(int number) {

int original = number, reverse = 0, remainder;

while (number != 0) {

remainder = number % 10;

reverse = reverse \* 10 + remainder;

number /= 10;

}

return original == reverse;

}

void main() {

int number;

clrscr();

printf("Enter a number: ");

scanf("%d", &number);

if (isPalindrome(number)) {

printf("The number is a palindrome.\n");

} else {

printf("The number is not a palindrome.\n");

}

getch();

}

**Day 27**

1.C Program to Check Whether a Number is Prime or Not

#include <stdio.h>

#include <conio.h>

int isPrime(int number) {

if (number <= 1) {

return 0;

}

for (int i = 2; i \* i <= number; i++) {

if (number % i == 0) {

return 0;

}

}

return 1;

}

void main() {

int number;

clrscr();

printf("Enter a number: ");

scanf("%d", &number);

if (isPrime(number)) {

printf("The number is prime.\n");

} else {

printf("The number is not prime.\n");

}

getch();

}

2.Write a program to find out and print all prime numbers lying between 1 to 200.

#include <stdio.h>

#include <conio.h>

int isPrime(int number) {

if (number <= 1) {

return 0;

}

for (int i = 2; i \* i <= number; i++) {

if (number % i == 0) {

return 0;

}

}

return 1;

}

void main() {

clrscr();

printf("Prime numbers between 1 and 200 are:\n");

for (int number = 2; number <= 200; number++) {

if (isPrime(number)) {

printf("%d ", number);

}

}

getch();

}

**Day 28**

1.Write a program to Check whether number is Armstrong or not.

#include <stdio.h>

#include <conio.h>

#include <math.h>

int isArmstrong(int number) {

int original = number, sum = 0, remainder, digits = 0;

while (number != 0) {

number /= 10;

digits++;

}

number = original;

while (number != 0) {

remainder = number % 10;

sum += pow(remainder, digits);

number /= 10;

}

return sum == original;

}

void main() {

int number;

clrscr();

printf("Enter a number: ");

scanf("%d", &number);

if (isArmstrong(number)) {

printf("The number is an Armstrong number.\n");

} else {

printf("The number is not an Armstrong number.\n");

}

getch();

}

2.Write a program to check whether number is krishnamurti or not.

#include <stdio.h>

#include <conio.h>

int factorial(int n) {

int fact = 1;

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

fact \*= i;

}

return fact;

}

int isKrishnamurthi(int number) {

int original = number, sum = 0, digit;

while (number != 0) {

digit = number % 10;

sum += factorial(digit);

number /= 10;

}

return sum == original;

}

void main() {

int number;

clrscr();

printf("Enter a number: ");

scanf("%d", &number);

if (isKrishnamurthi(number)) {

printf("The number is a Krishnamurthi number.\n");

} else {

printf("The number is not a Krishnamurthi number.\n");

}

getch();

}

**Day 29**

1.Write a C program for computing the fibonacci number sequence. Take the number of the terms from the user (must be more than 2).

#include <stdio.h>

#include <conio.h>

void fibonacci(int n) {

int a = 0, b = 1, next;

printf("Fibonacci sequence: \n");

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

printf("%d ", a);

next = a + b;

a = b;

b = next;

}

printf("\n");

}

void main() {

int terms;

clrscr();

printf("Enter the number of terms (more than 2): ");

scanf("%d", &terms);

if (terms > 2) {

fibonacci(terms);

} else {

printf("Please enter a number greater than 2.\n");

}

getch();

}

**Day 30**

1.Write a program to find out and print all Happy prime numbers lying between 1 to 200.

#include <stdio.h>

#include <conio.h>

int isPrime(int number) {

if (number <= 1) {

return 0;

}

for (int i = 2; i \* i <= number; i++) {

if (number % i == 0) {

return 0;

}

}

return 1;

}

int isHappy(int number) {

int sum, remainder;

while (number != 1 && number != 4) {

sum = 0;

while (number != 0) {

remainder = number % 10;

sum += remainder \* remainder;

number /= 10;

}

number = sum;

}

return number == 1;

}

void main() {

clrscr();

printf("Happy Prime numbers between 1 and 200 are:\n");

for (int num = 2; num <= 200; num++) {

if (isPrime(num) && isHappy(num)) {

printf("%d ", num);

}

}

getch();

}

**Day 31**

1. Write a Menu driven program to perform following menu using do-while loop. MENU: 1. Addition 2. Subtraction 3. Multiplication 4. Division 5. Exit (Hint: Operator (+,-,\*,/) and two number should be input by user.

#include <stdio.h>

#include <conio.h>

void addition(float a, float b) {

printf("Addition: %.2f\n", a + b);

}

void subtraction(float a, float b) {

printf("Subtraction: %.2f\n", a - b);

}

void multiplication(float a, float b) {

printf("Multiplication: %.2f\n", a \* b);

}

void division(float a, float b) {

if (b != 0) {

printf("Division: %.2f\n", a / b);

} else {

printf("Error! Division by zero.\n");

}

}

void main() {

int choice;

float num1, num2;

clrscr();

do {

printf("\nMENU:\n");

printf("1. Addition\n");

printf("2. Subtraction\n");

printf("3. Multiplication\n");

printf("4. Division\n");

printf("5. Exit\n");

printf("Enter your choice: ");

scanf("%d", &choice);

if (choice != 5) {

printf("Enter two numbers: ");

scanf("%f %f", &num1, &num2);

}

switch (choice) {

case 1:

addition(num1, num2);

break;

case 2:

subtraction(num1, num2);

break;

case 3:

multiplication(num1, num2);

break;

case 4:

division(num1, num2);

break;

case 5:

printf("Exiting the program.\n");

break;

default:

printf("Invalid choice! Please try again.\n");

}

} while (choice != 5);

getch();

}

**Day 32**

1.Write a program in C to enter marks of 10 students and print their marks. (Hint : Use array)

#include <stdio.h>

#include <conio.h>

void printMarks(int marks[], int size) {

printf("\nMarks of students:\n");

for (int i = 0; i < size; i++) {

printf("Student %d: %d\n", i + 1, marks[i]);

}

}

void main() {

int marks[10];

clrscr();

printf("Enter marks of 10 students:\n");

for (int i = 0; i < 10; i++) {

printf("Enter marks of student %d: ", i + 1);

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

}

printMarks(marks, 10);

getch();

}

2.Create an array (marks) of 10 elements. Assign initial value between 0 to 100 to each element Write a code to perform summation of array elements.

#include <stdio.h>

#include <conio.h>

#include <stdlib.h>

#include <time.h>

int sumArray(int marks[], int size) {

int sum = 0;

for (int i = 0; i < size; i++) {

sum += marks[i];

}

return sum;

}

void main() {

int marks[10];

int sum;

clrscr();

srand(time(0)); // Initialize random number generator

for (int i = 0; i < 10; i++) {

marks[i] = rand() % 101; // Assign random value between 0 and 100

}

sum = sumArray(marks, 10);

printf("Marks of 10 students:\n");

for (int i = 0; i < 10; i++) {

printf("Student %d: %d\n", i + 1, marks[i]);

}

printf("\nSum of array elements: %d\n", sum);

getch();

}

**Day 33**

1.Write a program to find Maximum/Minimum of array elements

#include <stdio.h>

#include <conio.h>

void findMaxMin(int arr[], int size, int \*max, int \*min) {

\*max = arr[0];

\*min = arr[0];

for (int i = 1; i < size; i++) {

if (arr[i] > \*max) {

\*max = arr[i];

}

if (arr[i] < \*min) {

\*min = arr[i];

}

}

}

void main() {

int arr[10], max, min;

clrscr();

printf("Enter 10 elements of the array:\n");

for (int i = 0; i < 10; i++) {

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

}

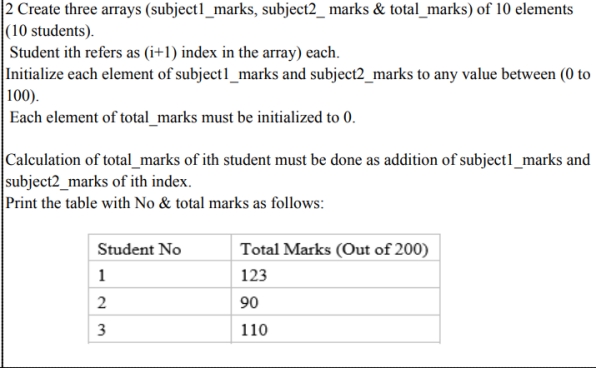
findMaxMin(arr, 10, &max, &min);

printf("\nMaximum element: %d", max);

printf("\nMinimum element: %d", min);

getch();

}

2. 

#include <stdio.h>

#include <conio.h>

void calculateTotalMarks(int subject1\_marks[], int subject2\_marks[], int total\_marks[], int size) {

for (int i = 0; i < size; i++) {

total\_marks[i] = subject1\_marks[i] + subject2\_marks[i];

}

}

void main() {

int subject1\_marks[10], subject2\_marks[10], total\_marks[10];

clrscr();

for (int i = 0; i < 10; i++) {

printf("Enter marks for student %d in subject 1: ", i + 1);

scanf("%d", &subject1\_marks[i]);

printf("Enter marks for student %d in subject 2: ", i + 1);

scanf("%d", &subject2\_marks[i]);

total\_marks[i] = 0;

}

calculateTotalMarks(subject1\_marks, subject2\_marks, total\_marks, 10);

printf("\nStudent No\tTotal Marks (Out of 200)\n");

for (int i = 0; i < 10; i++) {

printf("%d\t\t%d\n", i + 1, total\_marks[i]);

}

getch();

}

**Day 34**

1. Write a program to read an array of 8 integer numbers. Array may have duplicate values. Search the number in array and display "ELEMENT FOUND" or ELEMENT DOES NOT FOUND ". Take this number from the user. If more than one occurrence is there in the array, then display all the relevant indexes.

#include <stdio.h>

#include <conio.h>

void searchElement(int arr[], int size, int element) {

int found = 0;

for (int i = 0; i < size; i++) {

if (arr[i] == element) {

printf("ELEMENT FOUND at index %d\n", i);

found = 1;

}

}

if (found == 0) {

printf("ELEMENT DOES NOT FOUND\n");

}

}

void main() {

int arr[8], element;

clrscr();

printf("Enter 8 integer elements for the array:\n");

for (int i = 0; i < 8; i++) {

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

}

printf("Enter the element to search: ");

scanf("%d", &element);

searchElement(arr, 8, element);

getch();

}

Day 35

1. Write a program to perform bubble sort using 1-D Array of 6 elements. Initialize each element with value between 0 to 100.

#include <stdio.h>

#include <conio.h>

void bubbleSort(int arr[], int size) {

int temp;

for (int i = 0; i < size - 1; i++) {

for (int j = 0; j < size - 1 - i; j++) {

if (arr[j] > arr[j + 1]) {

temp = arr[j];

arr[j] = arr[j + 1];

arr[j + 1] = temp;

}

}

}

}

void main() {

int arr[6];

clrscr();

printf("Enter 6 elements (values between 0 to 100):\n");

for (int i = 0; i < 6; i++) {

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

}

bubbleSort(arr, 6);

printf("\nSorted array:\n");

for (int i = 0; i < 6; i++) {

printf("%d ", arr[i]);

}

getch();

}

**Day 36**

1. Write a program which takes one string from the user and find its length. Display the content of the input string.

#include <stdio.h>

#include <conio.h>

int findLength(char str[]) {

int length = 0;

while (str[length] != '\0') {

length++;

}

return length;

}

void main() {

char str[100];

clrscr();

printf("Enter a string: ");

scanf("%[^\n]", str); // Reading a string with spaces

int length = findLength(str);

printf("The string is: %s\n", str);

printf("Length of the string is: %d\n", length);

getch();

}

2. Write a program which takes one string from the user and display the content of the string in reverse order.

#include <stdio.h>

#include <conio.h>

void reverseString(char str[]) {

int length = 0;

while (str[length] != '\0') {

length++;

}

for (int i = length - 1; i >= 0; i--) {

printf("%c", str[i]);

}

}

void main() {

char str[100];

clrscr();

printf("Enter a string: ");

scanf("%[^\n]", str); // Reading a string with spaces

printf("The string in reverse order is: ");

reverseString(str);

getch();

}

**Day 37**

1. Write a program which takes one string from the user and copy its content to the second string using library function of string.h library file. Display the content of the second string.

#include <stdio.h>

#include <conio.h>

#include <string.h>

void copyString(char str1[], char str2[]) {

strcpy(str2, str1);

}

void main() {

char str1[100], str2[100];

clrscr();

printf("Enter a string: ");

scanf("%[^\n]", str1);

copyString(str1, str2);

printf("The content of the second string is: %s\n", str2);

getch();

}

2. Write a program which takes two strings from the user and concatenate first string content to the second string using library function of string.h library file. Display the content of the second string

#include <stdio.h>

#include <conio.h>

#include <string.h>

void concatenateStrings(char str1[], char str2[]) {

strcat(str2, str1);

}

void main() {

char str1[100], str2[100];

clrscr();

printf("Enter the first string: ");

scanf("%[^\n]", str1);

getchar();

printf("Enter the second string: ");

scanf("%[^\n]", str2);

concatenateStrings(str1, str2);

printf("The concatenated string is: %s\n", str2);

getch();

}

3. Write a program which takes one string from the user and find its length. using library function of string.h library file. Display the content of the input string

#include <stdio.h>

#include <conio.h>

#include <string.h>

void findLengthAndDisplay(char str[]) {

int length = strlen(str); // Using strlen to find the length of the string

printf("The content of the string is: %s\n", str);

printf("The length of the string is: %d\n", length);

}

void main() {

char str[100];

clrscr();

printf("Enter a string: ");

scanf("%[^\n]", str);

findLengthAndDisplay(str);

getch();

}

4. Write a program which takes two strings from the user and compare its content to the third string using library function of string.h library file. Display the content of the third string.

#include <stdio.h>

#include <conio.h>

#include <string.h>

void compareStrings(char str1[], char str2[], char result[]) {

int comparison = strcmp(str1, str2);

if (comparison == 0) {

strcpy(result, "Strings are equal");

} else if (comparison < 0) {

strcpy(result, "First string is less than second");

} else {

strcpy(result, "First string is greater than second");

}

}

void main() {

char str1[100], str2[100], result[100];

clrscr();

printf("Enter the first string: ");

scanf("%[^\n]", str1);

getchar();

printf("Enter the second string: ");

scanf("%[^\n]", str2);

compareStrings(str1, str2, result);

printf("The comparison result: %s\n", result);

getch();

}

5. Write a program which takes one string from the user and display the content of the string in reverse order. For example : Enter the string : LJMCA Reverse string : ACMJL

#include <stdio.h>

#include <conio.h>

#include <string.h>

void reverseString(char str[]) {

int length = strlen(str);

for (int i = length - 1; i >= 0; i--) {

printf("%c", str[i]);

}

}

void main() {

char str[100];

clrscr();

printf("Enter the string: ");

scanf("%[^\n]", str);

printf("Reverse string: ");

reverseString(str);

getch();

}

**Day 38**

1. Write a program to check whether the given string is palindrome or not? A string is said to be palindrome if reverse of the string is same as string. For example, “abba” is palindrome, but “abbc” is not palindrome. Further abbcbba is also palindrome. (Hint: without using library function of string.h)

#include <stdio.h>

#include <conio.h>

int isPalindrome(char str[]) {

int start = 0, end = 0;

while (str[end] != '\0') {

end++;

}

end--;

while (start < end) {

if (str[start] != str[end]) {

return 0;

}

start++;

end--;

}

return 1;

}

void main() {

char str[100];

clrscr();

printf("Enter the string: ");

scanf("%[^\n]", str);

if (isPalindrome(str)) {

printf("The string is a palindrome.\n");

} else {

printf("The string is not a palindrome.\n");

}

getch();

}

**Day 39**

1. Create two arrays named as matrix1 and matrix2 of 3X 3 size each. Initialize each element to 0 to 10 value. Print the content of both the arrays

#include <stdio.h>

#include <conio.h>

void printMatrix(int matrix[3][3]) {

for (int i = 0; i < 3; i++) {

for (int j = 0; j < 3; j++) {

printf("%d ", matrix[i][j]);

}

printf("\n");

}

}

void main() {

int matrix1[3][3], matrix2[3][3];

clrscr();

printf("Enter elements for matrix1 (3x3):\n");

for (int i = 0; i < 3; i++) {

for (int j = 0; j < 3; j++) {

scanf("%d", &matrix1[i][j]);

}

}

printf("Enter elements for matrix2 (3x3):\n");

for (int i = 0; i < 3; i++) {

for (int j = 0; j < 3; j++) {

scanf("%d", &matrix2[i][j]);

}

}

printf("\nMatrix 1:\n");

printMatrix(matrix1);

printf("\nMatrix 2:\n");

printMatrix(matrix2);

getch();

}

2. Perform the matrix addition of the above two matrixes (mentioned in Program No:1 ) and store the answer in the third 3X3 matrix named as matrix3.

#include <stdio.h>

#include <conio.h>

void printMatrix(int matrix[3][3]) {

for (int i = 0; i < 3; i++) {

for (int j = 0; j < 3; j++) {

printf("%d ", matrix[i][j]);

}

printf("\n");

}

}

void addMatrices(int matrix1[3][3], int matrix2[3][3], int matrix3[3][3]) {

for (int i = 0; i < 3; i++) {

for (int j = 0; j < 3; j++) {

matrix3[i][j] = matrix1[i][j] + matrix2[i][j];

}

}

}

void main() {

int matrix1[3][3], matrix2[3][3], matrix3[3][3];

clrscr();

printf("Enter elements for matrix1 (3x3):\n");

for (int i = 0; i < 3; i++) {

for (int j = 0; j < 3; j++) {

scanf("%d", &matrix1[i][j]);

}

}

printf("Enter elements for matrix2 (3x3):\n");

for (int i = 0; i < 3; i++) {

for (int j = 0; j < 3; j++) {

scanf("%d", &matrix2[i][j]);

}

}

addMatrices(matrix1, matrix2, matrix3);

printf("\nMatrix 1:\n");

printMatrix(matrix1);

printf("\nMatrix 2:\n");

printMatrix(matrix2);

printf("\nMatrix 3 (Matrix1 + Matrix2):\n");

printMatrix(matrix3);

getch();

}

**Day 40**

1.Take the 6 students name from the user. Take the one more student name which is supposed to be searched. If it founds, print the message “Student Found” otherwise print the message “Student Does Not Found”.

#include <stdio.h>

#include <conio.h>

#include <string.h>

int searchStudent(char students[6][50], char searchName[50]) {

for (int i = 0; i < 6; i++) {

if (strcmp(students[i], searchName) == 0) {

return 1;

}

}

return 0;

}

void main() {

char students[6][50], searchName[50];

clrscr();

for (int i = 0; i < 6; i++) {

printf("Enter the name of student %d: ", i + 1);

scanf("%s", students[i]);

}

printf("Enter the name to search: ");

scanf("%s", searchName);

if (searchStudent(students, searchName)) {

printf("Student Found\n");

} else {

printf("Student Does Not Found\n");

}

getch();

}

**Day 44**

1.Write a program to demonstrate the use of return keyword.

#include <stdio.h>

#include <conio.h>

int addNumbers(int a, int b) {

return a + b;

}

void main() {

int num1, num2, sum;

clrscr();

printf("Enter two numbers: ");

scanf("%d %d", &num1, &num2);

sum = addNumbers(num1, num2);

printf("Sum of %d and %d is: %d\n", num1, num2, sum);

getch();

}

Day 45

1. Write a C Program for computing the factorial number sequence using recursion. Take the number of the terms from the user (must be more than 1. ( Factorial of 5 is calculated as 5 X 4 X 3 X 2 X 1

#include <stdio.h>

#include <conio.h>

long factorial(int n) {

if (n == 1 || n == 0)

return 1;

else

return n \* factorial(n - 1);

}

void main() {

int num;

clrscr();

printf("Enter a number to compute its factorial (greater than 1): ");

scanf("%d", &num);

if (num > 1) {

printf("Factorial of %d is: %ld\n", num, factorial(num));

} else {

printf("Please enter a number greater than 1.\n");

}

getch();

}

**Day 46**

1. Write a C program which has two integer variables n1 & n2. Write the code to print the address of both the variables.

#include <stdio.h>

#include <conio.h>

void main() {

int n1, n2;

clrscr();

printf("Enter the value of n1: ");

scanf("%d", &n1);

printf("Enter the value of n2: ");

scanf("%d", &n2);

printf("Address of n1: %u\n", &n1);

printf("Address of n2: %u\n", &n2);

getch();

}

**Day 47**

1. Write a program in C to add two numbers using pointers.

#include <stdio.h>

#include <conio.h>

void addNumbers(int \*a, int \*b, int \*sum) {

\*sum = \*a + \*b;

}

void main() {

int num1, num2, sum;

clrscr();

printf("Enter first number: ");

scanf("%d", &num1);

printf("Enter second number: ");

scanf("%d", &num2);

addNumbers(&num1, &num2, &sum);

printf("Sum of %d and %d is: %d\n", num1, num2, sum);

getch();

}

**Day 48**

1. Write a C program to Swapping two integer numbers using function call by value and call by reference.

#include <stdio.h>

#include <conio.h>

void swapByValue(int a, int b) {

int temp;

temp = a;

a = b;

b = temp;

printf("In swapByValue, a = %d, b = %d\n", a, b);

}

void swapByReference(int \*a, int \*b) {

int temp;

temp = \*a;

\*a = \*b;

\*b = temp;

printf("In swapByReference, a = %d, b = %d\n", \*a, \*b);

}

void main() {

int num1, num2;

clrscr();

printf("Enter first number: ");

scanf("%d", &num1);

printf("Enter second number: ");

scanf("%d", &num2);

printf("Before swapping: num1 = %d, num2 = %d\n", num1, num2);

swapByValue(num1, num2); // Call by value

printf("After swapByValue: num1 = %d, num2 = %d\n", num1, num2);

swapByReference(&num1, &num2); // Call by reference

printf("After swapByReference: num1 = %d, num2 = %d\n", num1, num2);

getch();

2. Write a program in C to find string length using pointer. Note: Create user define function to implement it.

#include <stdio.h>

#include <conio.h>

int stringLength(char \*str) {

int length = 0;

while (\*str != '\0') {

length++;

str++;

}

return length;

}

void main() {

char str[100];

clrscr();

printf("Enter a string: ");

scanf("%s", str);

printf("Length of the string is: %d\n", stringLength(str));

getch();

}

**Day 49**

4. Write a program in C to find position of character in string using pointer. Input : Enter String : I am fine Enter Character : m Output : Character position : 4 OR Character Not found

#include <stdio.h>

#include <conio.h>

int findCharPosition(char \*str, char ch) {

int position = 1;

while (\*str != '\0') {

if (\*str == ch) {

return position;

}

str++;

position++;

}

return -1;

}

void main() {

char str[100], ch;

int position;

clrscr();

printf("Enter String: ");

gets(str); // Use gets() to input the string

printf("Enter Character: ");

ch = getchar(); // Use getchar() to input the character

position = findCharPosition(str, ch);

if (position != -1) {

printf("Character position: %d\n", position);

} else {

printf("Character Not found\n");

}

getch();

}

**Day 51**

1. Write a program to read and print array elements. Number of elements and their values must be taken at run time

#include <stdio.h>

#include <conio.h>

void printArray(char arr[][50], int size) {

for (int i = 0; i < size; i++) {

printf("String %d: %s\n", i + 1, arr[i]);

}

}

void main() {

int n;

char arr[10][50];

clrscr();

printf("Enter the number of strings: ");

scanf("%d", &n);

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

printf("Enter string %d: ", i + 1);

scanf("%s", arr[i]);

}

printf("\nThe strings are:\n");

printArray(arr, n);

getch();

}

2. Write a program to find the smallest/largest element. Number of elements and their values must be taken at run time

#include <stdio.h>

#include <conio.h>

void findSmallestLargest(int arr[], int size, int \*smallest, int \*largest) {

\*smallest = arr[0];

\*largest = arr[0];

for (int i = 1; i < size; i++) {

if (arr[i] < \*smallest) {

\*smallest = arr[i];

}

if (arr[i] > \*largest) {

\*largest = arr[i];

}

}

}

void main() {

int n, smallest, largest;

clrscr();

printf("Enter the number of elements: ");

scanf("%d", &n);

int arr[n];

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

printf("Enter element %d: ", i + 1);

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

}

findSmallestLargest(arr, n, &smallest, &largest);

printf("\nSmallest element: %d\n", smallest);

printf("Largest element: %d\n", largest);

getch();

}

**Day 54**

1. Write a C program to create a structure for student and store the following details : (name,course,year,gender,Marks of three subjects) calculate total marks and percentage.

#include <stdio.h>

#include <conio.h>

struct Student {

char name[50];

char course[50];

int year;

char gender;

float marks[3];

float totalMarks;

float percentage;

};

void calculateTotalAndPercentage(struct Student \*s) {

s->totalMarks = 0;

for (int i = 0; i < 3; i++) {

s->totalMarks += s->marks[i];

}

s->percentage = (s->totalMarks / 300) \* 100;

}

void main() {

struct Student s;

clrscr();

printf("Enter student name: ");

scanf("%s", s.name);

printf("Enter course name: ");

scanf("%s", s.course);

printf("Enter year of study: ");

scanf("%d", &s.year);

printf("Enter gender (M/F): ");

scanf(" %c", &s.gender);

for (int i = 0; i < 3; i++) {

printf("Enter marks for subject %d: ", i + 1);

scanf("%f", &s.marks[i]);

}

calculateTotalAndPercentage(&s);

printf("\n--- Student Information ---\n");

printf("Name: %s\n", s.name);

printf("Course: %s\n", s.course);

printf("Year: %d\n", s.year);

printf("Gender: %c\n", s.gender);

printf("Total Marks: %.2f\n", s.totalMarks);

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

getch();

}

**Day 55**

1. Write a C program to read and print employee details using structure. • To store multiple employee details we will use an array of structures. Each element in the array will represent a single employee. • Each Structure i.e. Employee contains: - Name - Id - Salary program, we will read the inputs for each employee from the user, and then output all employee details by iterating through the array using the ‘for’ loop.

#include <stdio.h>

#include <conio.h>

struct Employee {

char name[50];

int id;

float salary;

};

void main() {

int n;

clrscr();

printf("Enter the number of employees: ");

scanf("%d", &n);

struct Employee emp[n]; // Array of structures to store multiple employee details

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

printf("\nEnter details for employee %d\n", i + 1);

printf("Enter Name: ");

scanf("%s", emp[i].name);

printf("Enter ID: ");

scanf("%d", &emp[i].id);

printf("Enter Salary: ");

scanf("%f", &emp[i].salary);

}

printf("\n--- Employee Details ---\n");

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

printf("\nEmployee %d\n", i + 1);

printf("Name: %s\n", emp[i].name);

printf("ID: %d\n", emp[i].id);

printf("Salary: %.2f\n", emp[i].salary);

}

getch();

}

2. In the above program, we are directly asking the user to input the salary of every employee. In case we need to calculate the salary from the basic, we will have to add an extra variable(basic\_salary) to the structure and calculate the net\_salary using the formula: net\_salary = basic\_salary + HRA + DA – PF Where, HRA is 10% of basic salary DA is 5% of basic salary PF is 12% of basic salary

#include <stdio.h>

#include <conio.h>

struct Employee {

char name[50];

int id;

float basic\_salary;

float net\_salary;

};

void calculateNetSalary(struct Employee \*emp) {

emp->net\_salary = emp->basic\_salary + (0.10 \* emp->basic\_salary) + (0.05 \* emp->basic\_salary) - (0.12 \* emp->basic\_salary);

}

void main() {

int n;

clrscr();

printf("Enter the number of employees: ");

scanf("%d", &n);

struct Employee emp[n];

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

printf("\nEnter details for employee %d\n", i + 1);

printf("Enter Name: ");

scanf("%s", emp[i].name);

printf("Enter ID: ");

scanf("%d", &emp[i].id);

printf("Enter Basic Salary: ");

scanf("%f", &emp[i].basic\_salary);

calculateNetSalary(&emp[i]);

}

printf("\n--- Employee Details ---\n");

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

printf("\nEmployee %d\n", i + 1);

printf("Name: %s\n", emp[i].name);

printf("ID: %d\n", emp[i].id);

printf("Basic Salary: %.2f\n", emp[i].basic\_salary);

printf("Net Salary: %.2f\n", emp[i].net\_salary);

}

getch();

}

**Day 57**

1. Write a C program to create a structure for student and store the following details : (name,course,year,gender,percentage) Take the details of N students.

#include <stdio.h>

#include <conio.h>

struct Student {

char name[50];

char course[50];

int year;

char gender;

float percentage;

};

void inputStudentDetails(struct Student \*s) {

printf("Enter Name: ");

scanf("%s", s->name);

printf("Enter Course: ");

scanf("%s", s->course);

printf("Enter Year: ");

scanf("%d", &s->year);

printf("Enter Gender (M/F): ");

scanf(" %c", &s->gender);

printf("Enter Percentage: ");

scanf("%f", &s->percentage);

}

void main() {

int n;

clrscr();

printf("Enter the number of students: ");

scanf("%d", &n);

struct Student students[n];

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

printf("\nEnter details for student %d\n", i + 1);

inputStudentDetails(&students[i]);

}

printf("\n--- Student Details ---\n");

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

printf("\nStudent %d\n", i + 1);

printf("Name: %s\n", students[i].name);

printf("Course: %s\n", students[i].course);

printf("Year: %d\n", students[i].year);

printf("Gender: %c\n", students[i].gender);

printf("Percentage: %.2f\n", students[i].percentage);

}

getch();

}

**Day 60**

1. C program to read name and marks of n number of students and store them in a file.

#include <stdio.h>

#include <conio.h>

struct Student {

char name[50];

int marks;

};

void writeToFile(struct Student \*s, int n) {

FILE \*file;

file = fopen("students.txt", "w");

if (file == NULL) {

printf("Error opening file!\n");

return;

}

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

fprintf(file, "Name: %s\nMarks: %d\n\n", s[i].name, s[i].marks);

}

fclose(file);

}

void main() {

int n;

clrscr();

printf("Enter the number of students: ");

scanf("%d", &n);

struct Student students[n];

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

printf("\nEnter name of student %d: ", i + 1);

scanf("%s", students[i].name);

printf("Enter marks of student %d: ", i + 1);

scanf("%d", &students[i].marks);

}

writeToFile(students, n);

printf("\nStudent data has been written to file 'students.txt'.\n");

getch();

}

2. C program to read name and marks of n number of students from and store them in a file. If the file previously exits, add the information to the file.(Hint: append)

#include <stdio.h>

#include <conio.h>

struct Student {

char name[50];

int marks;

};

void appendToFile(struct Student \*s, int n) {

FILE \*file;

file = fopen("students.txt", "a");

if (file == NULL) {

printf("Error opening file!\n");

return;

}

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

fprintf(file, "Name: %s\nMarks: %d\n\n", s[i].name, s[i].marks);

}

fclose(file);

}

void main() {

int n;

clrscr();

printf("Enter the number of students: ");

scanf("%d", &n);

struct Student students[n];

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

printf("\nEnter name of student %d: ", i + 1);

scanf("%s", students[i].name);

printf("Enter marks of student %d: ", i + 1);

scanf("%d", &students[i].marks);

}

appendToFile(students, n);

printf("\nStudent data has been added to file 'students.txt'.\n");

getch();

}

**Day 61**

1. Write a program to copy content of current source file in to other file with name “duplicate.c”.

#include <stdio.h>

#include <conio.h>

void copyFileContent(char sourceFileName[], char destinationFileName[]) {

FILE \*sourceFile, \*destinationFile;

char ch;

sourceFile = fopen(sourceFileName, "r");

if (sourceFile == NULL) {

printf("Error opening source file.\n");

return;

}

destinationFile = fopen(destinationFileName, "w");

if (destinationFile == NULL) {

printf("Error opening destination file.\n");

fclose(sourceFile);

return;

}

while ((ch = fgetc(sourceFile)) != EOF) {

fputc(ch, destinationFile);

}

printf("Content copied to %s successfully.\n", destinationFileName);

fclose(sourceFile);

fclose(destinationFile);

}

void main() {

clrscr();

char sourceFileName[20], destinationFileName[20];

printf("Enter source file name: ");

scanf("%s", sourceFileName);

printf("Enter destination file name: ");

scanf("%s", destinationFileName);

copyFileContent(sourceFileName, destinationFileName);

getch();

}

2. Write a program to append the content of first file to the second file

#include <stdio.h>

#include <conio.h>

void appendFileContent(char sourceFileName[], char destinationFileName[]) {

FILE \*sourceFile, \*destinationFile;

char ch;

sourceFile = fopen(sourceFileName, "r");

if (sourceFile == NULL) {

printf("Error opening source file.\n");

return;

}

destinationFile = fopen(destinationFileName, "a");

if (destinationFile == NULL) {

printf("Error opening destination file.\n");

fclose(sourceFile);

return;

}

while ((ch = fgetc(sourceFile)) != EOF) {

fputc(ch, destinationFile);

}

printf("Content appended to %s successfully.\n", destinationFileName);

fclose(sourceFile);

fclose(destinationFile);

}

void main() {

clrscr();

char sourceFileName[20], destinationFileName[20];

printf("Enter source file name: ");

scanf("%s", sourceFileName);

printf("Enter destination file name: ");

scanf("%s", destinationFileName);

appendFileContent(sourceFileName, destinationFileName);

getch();

}

**Day 62**

1. Write a program to read n numeric value from keyboard and print into "Data" file. Now read data from "Data file" and print odd number in odd file and even no in even file

#include <stdio.h>

#include <conio.h>

void writeDataToFile(int n, int numbers[]) {

FILE \*dataFile;

dataFile = fopen("Data.txt", "w");

if (dataFile == NULL) {

printf("Error opening Data file.\n");

return;

}

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

fprintf(dataFile, "%d\n", numbers[i]);

}

fclose(dataFile);

}

void readDataAndSeparate() {

FILE \*dataFile, \*oddFile, \*evenFile;

int num;

dataFile = fopen("Data.txt", "r");

if (dataFile == NULL) {

printf("Error opening Data file.\n");

return;

}

oddFile = fopen("odd.txt", "w");

if (oddFile == NULL) {

printf("Error opening odd file.\n");

fclose(dataFile);

return;

}

evenFile = fopen("even.txt", "w");

if (evenFile == NULL) {

printf("Error opening even file.\n");

fclose(dataFile);

fclose(oddFile);

return;

}

while (fscanf(dataFile, "%d", &num) != EOF) {

if (num % 2 == 0) {

fprintf(evenFile, "%d\n", num);

} else {

fprintf(oddFile, "%d\n", num);

}

}

fclose(dataFile);

fclose(oddFile);

fclose(evenFile);

}

void main() {

clrscr();

int n;

printf("Enter the number of values: ");

scanf("%d", &n);

int numbers[n];

printf("Enter %d numeric values:\n", n);

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

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

}

writeDataToFile(n, numbers);

readDataAndSeparate();

printf("Data has been separated into odd and even files.\n");

getch();

}

**Day 63**

1. Write a C program for writing structure to file and reading structure from file using fread() and fwrite() function.

#include <stdio.h>

#include <conio.h>

struct Student {

char name[50];

int age;

float marks;

};

void writeStructureToFile() {

FILE \*file;

struct Student stu;

file = fopen("student.dat", "wb");

if (file == NULL) {

printf("Error opening file for writing.\n");

return;

}

printf("Enter name: ");

scanf("%s", stu.name);

printf("Enter age: ");

scanf("%d", &stu.age);

printf("Enter marks: ");

scanf("%f", &stu.marks);

fwrite(&stu, sizeof(struct Student), 1, file);

fclose(file);

printf("Structure data written to file successfully.\n");

}

void readStructureFromFile() {

FILE \*file;

struct Student stu;

file = fopen("student.dat", "rb");

if (file == NULL) {

printf("Error opening file for reading.\n");

return;

}

// Reading the structure from the file

fread(&stu, sizeof(struct Student), 1, file);

fclose(file);

// Display the structure data

printf("Student Name: %s\n", stu.name);

printf("Student Age: %d\n", stu.age);

printf("Student Marks: %.2f\n", stu.marks);

}

void main() {

clrscr();

writeStructureToFile();

readStructureFromFile();

getch();

}

**Day 65**

write a C program that reads two command line arguments, and performs the addition of argv[1] and argv[2].

#include <stdio.h>

#include <stdlib.h>

int add(int num1, int num2) {

return num1 + num2;

}

void main(int argc, char \*argv[]) {

if (argc != 3) {

printf("Please provide exactly two numbers as command line arguments.\n");

return;

}

int num1 = atoi(argv[1]);

int num2 = atoi(argv[2]);

int sum = add(num1, num2);

printf("The sum of %d and %d is %d\n", num1, num2, sum);

}