Practical 3

01

#include <stdio.h>

int main()

{

int no1, no2;

printf("Enter the first number: ");

scanf("%d", &no1);

printf("Enter the second number: ");

scanf("%d", &no2);

if (no1 > no2) {

printf("The highest number is: %d\n", no1);

} else if (no2 > no1) {

printf("The highest number is: %d\n", no2);

} else {

printf("Both numbers are equal \n\n");

}

return 0;

}

02

#include <stdio.h>

int main()

{

int no1, no2, no3;

printf("Enter the first number: ");

scanf("%d", &no1);

printf("Enter the second number: ");

scanf("%d", &no2);

printf("Enter the third number: ");

scanf("%d", &no3);

int largest = no1;

if (num2 > largest) {

largest = no2;

}

if (num3 > largest) {

largest = no3;

}

int smallest = no1;

if (no2 < smallest) {

smallest = no2;

}

if (num3 < smallest) {

smallest = no3;

}

printf("The largest number is: %d\n\n", largest);

printf("The smallest number is: %d\n\n", smallest);

return 0;

}

03

#include <stdio.h>

int main()

{

char employeeName[40];

float basicSalary, newSalary, increment;

printf("Enter the employee name: ");

scanf("%s", employeeName);

printf("Enter the basic salary : ");

scanf("%f", &basicSalary);

if (basicSalary < 5000) {

increment = basicSalary \* 0.05;

} else if (basicSalary >= 5000 && basicSalary < 10000) {

increment = basicSalary \* 0.1;

} else {

increment = basicSalary \* 0.15;

}

newSalary = increment + basicSalary ;

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

printf("New Salary: %.2f\n\n", newSalary);

return 0;

}

04

#include <stdio.h>

int main()

{

float radius;

const float pi = 3.14159;

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

scanf("%f", &radius);

if (radius >= 0) {

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

printf("Circumference: %.2f\n\n", 2 \* pi \* radius);

printf("Area: %.2f\n\n", pi \* radius \* radius);

} else {

printf("Invalid radius. Radius must be a non-negative value\n\n");

}

return 0;

}

05

#include <stdio.h>

int main()

{

int no1, no2;

printf("Enter the first integer : ");

scanf("%d", &no1);

printf("Enter the second integer: ");

scanf("%d", &no2);

if (no2 != 0) {

if (no1 % no2 == 0) {

printf("%d is a multiple of %d\n", no1, no2);

} else {

printf("%d is not a multiple of %d\n", no1, no2);

}

} else {

printf("Cannot divide by zero. Please enter a non-zero second integer\n\n");

}

return 0;

}

07

#include <stdio.h>

int main()

{

float basicSalary, monthlySales;

char city;

float additionalAllowance = 0;

float bonusPercentage = 0;

float bonusAmount, grossRemuneration;

printf("Enter the Basic Salary : ");

scanf("%f", &basicSalary);

printf("Enter the monthly sales: ");

scanf("%f", &monthlySales);

printf("Enter the city ('C' for Colombo, 'O' for other cities) : ");

scanf(" %c", &city);

if (basicSalary > 0 && monthlySales >= 0) {

if (city == 'C') {

additionalAllowance = 2500;

}

if (monthlySales >= 0 && monthlySales <= 25000)

bonusPercentage = 10;

else if (monthlySales > 25000 && monthlySales <= 50000)

bonusPercentage = 12;

else if (monthlySales > 50000)

bonusPercentage = 15;

bonusAmount = (bonusPercentage / 100) \* monthlySales;

grossRemuneration = basicSalary + additionalAllowance + bonusAmount;

printf("Gross Monthly Remuneration: %.2f\n\n", grossRemuneration);

} else {

printf("Invalid input. Basic Salary and monthly sales must be non negative\n\n");

}

return 0;

}

Practical 4

01

#include <stdio.h>

int main()

{

int number;

printf("Enter an integer : ");

scanf("%d", &number);

if (number % 2 == 0) {

printf("%d is an even number\n\n", number);

} else {

printf("%d is an odd number\n\n", number);

}

return 0;

}

#include <stdio.h>

int main() {

int number;

printf("Enter an integer : ");

scanf("%d", &number);

switch (number % 2)

{

case 0:

printf("%d is an even number\n\n", number);

break;

case 1:

printf("%d is an odd number\n\n", number);

break;

}

return 0;

}

02

#include <stdio.h>

int main()

{

float no1, no2;

char operator;

printf("Enter the first number: ");

scanf("%f", &no1);

printf("Enter the second number: ");

scanf("%f", &no2);

printf("Select an operation :\n\n");

printf("1. Addition (+)\n");

printf("2. Subtraction (-)\n");

printf("3. Multiplication (\*)\n");

printf("4. Division (/)\n");

printf("Enter your choice (1-4): ");

scanf(" %c", &operator);

if (operator == '1') {

float result = no1 + no2;

printf("%.2f + %.2f = %.2f\n", no1, no2, result);

} else if (operator == '2') {

float result = no1 - no2;

printf("%.2f - %.2f = %.2f\n", no1, no2, result);

} else if (operator == '3') {

float result = num1 \* no2;

printf("%.2f \* %.2f = %.2f\n", no1, no2, result);

} else if (operator == '4') {

if (num2 != 0) {

float result = no1 / no2;

printf("%.2f / %.2f = %.2f\n", no1, no2, result);

} else {

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

}

} else {

printf("Error: Invalid choice\n\n");

}

return 0;

}

03

#include <stdio.h>

#define PI 3.14159

int main()

{

int choice;

float radius;

printf("Menu :\n");

printf("1. Calculate circumference of a circle\n");

printf("2. Calculate area of a circle\n");

printf("3. Calculate volume of a sphere\n");

printf("Enter your choice (1-3) : ");

scanf("%d", &choice);

printf("Enter the radius : ");

scanf("%f", &radius);

if (choice == 1) {

float circumference = 2 \* PI \* radius;

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

} else if (choice == 2) {

float area = PI \* pow(radius, 2);

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

} else if (choice == 3) {

float volume = (4.0 / 3.0) \* PI \* pow(radius, 3);

printf("Volume of the sphere: %.2f\n\n", volume);

} else {

printf("Error: Invalid choice\n\n");

}

return 0;

}

04

#include <stdio.h>

int main()

{

char letter;

printf("Enter a letter : ");

scanf("%c", &letter);

if (letter == 'a' || letter == 'A' ||

letter == 'e' || letter == 'E' ||

letter == 'i' || letter == 'I' ||

letter == 'o' || letter == 'O' ||

letter == 'u' || letter == 'U') {

printf("%c is a vowel\n\n", letter);

} else {

printf("%c is not a vowel\n\n", letter);

}

return 0;

}

05

#include <stdio.h>

int main()

{

int month;

printf("Enter the month number (1-12 ): ");

scanf("%d", &month);

int days;

if (month >= 1 && month <= 12) {

switch (month) {

case 2:

days = 28;

break;

case 4 :

case 6 :

case 9 :

case 11 :

days = 30;

break;

default:

days = 31;

break;

}

printf("Total number of days in month %d: %d\n\n", month, days);

} else {

printf("Invalid month number\n\n");

}

return 0;

}

Practical 5

01

#include <stdio.h>

int main()

{

int number = 0;

while (number <= 100) {

printf("%d ", number);

number++;

}

return 0;

}

#include <stdio.h>

int main()

{

int number = 0;

do {

printf("%d ", number);

number++;

} while (number <= 100);

return 0;

}

#include <stdio.h>

int main()

{

for (int num = 0; num <= 100; num++) {

printf("%d ", num);

}

return 0;

}

02

#include <stdio.h>

int main()

{

int marks[10];

int total = 0;

printf("Enter the marks :\n\n");

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

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

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

total += marks[i];

}

float average = (float)total / 10.0;

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

printf("Average marks: %.2f\n\n", average);

if (average < 50) {

printf("Fail!\n");

} else {

printf("Pass!\n");

}

return 0;

}

03

#include <stdio.h>

int main()

{

int number;

int factorial = 1;

printf("Enter a number : ");

scanf("%d", &number);

for (int i = number; i >= 1; i--) {

factorial \*= i;

}

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

return 0;

}

04

#include <stdio.h>

int main()

{

Int numbe;

int sum = 0;

printf("Enter a number : ");

scanf("%d", &number);

int digit;

while (number > 0) {

digit = number % 10;

sum += digit;

number /= 10;

}

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

return 0;

}

05

#include <stdio.h>

int main()

{

int number, reversedNumber = 0;

printf("Enter a number : ");

scanf("%d", &number);

do {

int digit = number % 10;

reversedNumber = (reversedNumber \* 10) + digit;

number /= 10;

} while (number != 0);

printf("Reversed number : %d\n\n", reversedNumber);

return 0;

}

06

#include <stdio.h>

int main()

{

int base, exponent;

int result = 1;

printf("Enter the base : ");

scanf("%d", &base);

printf("Enter the exponent : ");

scanf("%d", &exponent);

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

result \*= base;

}

printf("%d raised to the power %d is: %d\n\n", base, exponent, result);

return 0;

}

07

#include <stdio.h>

int main()

{

int no1 = 0, no2 = 1;

int nextNo;

printf("First 10 numbers of the Fibonacci sequence :\n\n");

printf("%d %d ", no1, no2);

for (int i = 3; i <= 10; i++) {

nextNum = no1 + no2;

printf("%d ", nextNo);

num1 = no2;

num2 = nextNo;

}

printf("\n");

return 0;

}

08

#include <stdio.h>

int main()

{

int number, originalNumber, remainder, result = 0;

int digits = 0;

printf("Enter a number : ");

scanf("%d", &number);

originalNumber = number;

while (originalNumber != 0)

originalNumber /= 10;

digits++;

originalNumber = number;

while (originalNumber != 0)

remainder = originalNumber % 10;

result += pow(remainder, digits);

originalNumber /= 10;

if (result == number) {

printf("%d is an Armstrong number\n\n", number);

} else {

printf("%d is not an Armstrong number\n\n", number);

}

return 0;

}

09

#include <stdio.h>

int main()

{

char letter;

printf("ASCII values for letters A to Z :\n\n");

for (letter = 'A'; letter <= 'Z'; letter++) {

printf("%c: %d\n", letter, letter);

}

return 0;

}

10

#include <stdio.h>

int main()

{

int rows = 5;

printf("Pattern :\n\n");

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

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

printf("\*");

}

printf("\n");

}

return 0;

}

11

#include <stdio.h>

int main()

{

int number;

int isPrime = 1;

printf("Enter a number : ");

scanf("%d", &number);

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

if (number % i == 0) {

isPrime = 0;

break;

}

}

if (isPrime == 1)

printf("%d is a prime number\n\n", number);

else

printf("%d is not a prime number\n\n", number);

return 0;

}

12

#include <stdio.h>

int main()

{

int number;

printf("Enter an integer : ");

scanf("%d", &number);

printf("Factors of %d: ", number);

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

if (number % i == 0) {

printf("%d ", i);

}

}

printf("\n");

return 0;

}

13

#include <stdio.h>

int main()

{

int number;

int sum = 0;

printf("Enter numbers to add (enter -1 to stop )\n:\n");

while (1) {

scanf("%d", &number);

if (number == -1) {

break;

}

sum += number;

}

printf("Sum: %d\n\n", sum);

return 0;

}

14

#include <stdio.h>

int main()

{

int array[10];

printf("Enter 10 integers :\n");

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

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

}

printf("Array elements :\n\n");

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

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

}

printf("\n");

return 0;

}

15

#include <stdio.h>

int main()

{

int array[10];

int count = 0;

printf("Enter 10 integers :\n\n");

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

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

}

printf("Array elements :\n\n");

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

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

if (array[i] % 2 == 0) {

count++;

}

}

printf("\n");

printf("Count of even numbers: %d\n\n", count);

return 0;

}

Section B

01

#include <stdio.h>

int main()

{

int numbers[10];

int positiveCount = 0, negativeCount = 0, zeroCount = 0;

printf("Enter 10 numbers:\n");

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

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

}

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

if (numbers[i] > 0) {

positiveCount++;

} else if (numbers[i] < 0) {

negativeCount++;

} else {

zeroCount++;

}

}

printf("Positive numbers: %d\n\n", positiveCount);

printf("Negative numbers: %d\n\n", negativeCount);

printf("Zeros: %d\n\n", zeroCount);

return 0;

}

02

#include <stdio.h>

int main() {

int marks[10];

int sum = 0;

int maximum = 0, minimum = 100;

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

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

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

sum += marks[i];

if (marks[i] > maximum) {

maximum = marks[i];

}

if (marks[i] < minimum) {

minimum = marks[i];

}

}

float average = (float)sum / 10;

printf("Maximum marks: %d\n\n", maximum);

printf("Minimum marks: %d\n\n", minimum);

printf("Average marks: %.2f\n\n", average);

return 0;

}

03

#include <stdio.h>

int main()

{

float prices[10];

float sum = 0;

int count = 0;

printf("Enter prices of 10 items :\n\n");

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

scanf("%f", &prices[i]);

sum += prices[i];

if (prices[i] > 200) {

count++;

}

}

float average = sum / 10;

printf("Average value of an item: %.2f\n\n", average);

printf("Number of items with price greater than 200: %d\n\n", count);

return 0;

}

04

#include <stdio.h>

int main()

{

int employeeNo;

float basicSalary;

int count = 0;

printf("Enter Employee No and Basic Salary (-999 to stop) :\n\n");

while (1) {

scanf("%d", &employeeNo);

if (employeeNo == -999) {

break;

}

scanf("%f", &basicSalary);

if (basicSalary >= 5000) {

count++;

}

}

printf("Number of Employees with Basic Salary >= 5000: %d\n\n", count);

return 0;

}

05

#include <stdio.h>

int main()

{

int employeeNo;

float hoursWorked;

float overtimeRate = 150;

float overtimePayment;

int count = 0;

int countExceeding4000 = 0;

printf("Enter Employee No and Hours Worked (-999 to stop) :\n\n");

while (1) {

scanf("%d", &employeeNo);

if (employeeNo == -999) {

break;

}

scanf("%f", &hoursWorked);

if (hoursWorked > 40) {

overtimePayment = (hoursWorked - 40) \* overtimeRate;

} else {

overtimePayment = 0;

}

printf("Employee No: %d\n\n", employeeNo);

printf("Overtime Payment: %.2f\n\n", overtimePayment);

if (overtimePayment > 4000) {

countExceeding4000++;

}

count++;

}

float percentageExceeding4000 = (float) countExceeding4000 / count \* 100;

printf("Percentage of Employees with Overtime Payment exceeding Rs. 4000 : %.2f%%\n\n", percentageExceeding4000);

return 0;

}