# **Practical 03**

1. #include <stdio.h>

int main() {

int no1, no2;

printf("Enter 2 numbers ");

scanf("%d %d", &no1, &no2);

if(no1>no2)

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

else

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

}

1. #include <stdio.h>

int main() {

int no1, no2, no3, min, max;

printf("Enter 3 numbers ");

scanf("%d %d %d", &no1, &no2, &no3);

if(no1>no2 && no1>no3)

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

else if(no2>no3 && no2>no1)

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

else

printf("The highest number is %d", no3);

}

1. #include <stdio.h>

int main() {

char employeeName[20];

float newSalary, basicSalary;

printf("Enter Employee Name ");

scanf("%s", &employeeName);

printf("Enter Your Basic Salary ");

scanf("%f", &basicSalary);

if (basicSalary <5000){

newSalary = basicSalary\*1.05;

printf("Employee %s New Salary is %.2f\n", employeeName, newSalary);

}

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

newSalary = basicSalary\*1.1;

printf("Employee %s New Salary is %.2f\n", employeeName, newSalary);

}

if(basicSalary >=10000) {

newSalary = basicSalary\*1.15;

printf("Employee %s New Salary is %.2f\n", employeeName, newSalary);

}

}

1. #include <stdio.h>

int main() {

float radius, diameter, circumference, area;

printf("Enter radius of the circle ");

scanf("%f", &radius);

diameter=2\*radius;

circumference=2\*3.14159\*radius;

area=3.14159\*radius\*radius;

printf("Diameter of the Circle is %f\n", diameter);

printf("Circumference of the Circle is %f\n", circumference);

printf("Area of the Circle is %f\n", area);

}

1. #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 (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);

}

}

1. #include <stdio.h>

int main() {

printf("Integer equivalents\n");

printf("Uppercase letters\n");

printf("A %d\n", 'A');

printf("B %d\n", 'B');

printf("C %d\n", 'C');

printf("Lowercase letters\n");

printf("a %d\n", 'a');

printf("b %d\n", 'b');

printf("c %d\n", 'c');

printf("Digits:\n");

printf("0 %d\n", '0');

printf("1 %d\n", '1');

printf("2 %d\n", '2');

printf("Special symbols\n");

printf("$ %d\n", '$');

printf("\* %d\n", '\*');

printf("+ %d\n", '+');

printf("/ %d\n", '/');

printf("Blank character %d\n", ' ');

}

1. #include <stdio.h>

int main() {

float basicSalary, additionalAllowance = 0, monthlySales, bonusPercentage, bonusAmount, grossRemuneration;

char city;

printf("Enter the basic salary of the Salesmen ");

scanf("%f", &basicSalary);

printf("Enter the number of years of service of the Salesmen ");

int serviceYears;

scanf("%d", &serviceYears);

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

scanf(" %c", &city);

printf("Enter the monthly sales amount of the Salesmen ");

scanf("%f", &monthlySales);

if (serviceYears > 5) {

additionalAllowance = 0.1 \* basicSalary;

}

if (city == 'C') {

additionalAllowance += 2500;

}

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

bonusPercentage = 0.1;

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

bonusPercentage = 0.12;

} else if (monthlySales > 50000) {

bonusPercentage = 0.15;

}

bonusAmount = bonusPercentage \* monthlySales;

grossRemuneration = basicSalary + additionalAllowance + bonusAmount;

printf("Gross monthly remuneration is %.2f\n", grossRemuneration);

}

**Practical 04**

1. #include <stdio.h>

int main() {

int no;

printf("Enter the number ");

scanf("%d", &no);

if(no%2)

printf("The number is a odd number", no);

else

printf("The number is a even number", no);

}

#include <stdio.h>

int main() {

int no;

printf("Enter the number ");

scanf("%d", &no);

switch(no%2){

case 0: printf("The number is an even number", no); break;

case 1: printf("The number is an odd number", no); break;

}

}

1. #include <stdio.h>

int main() {

int choice;

float no1, no2, result;

printf("Menu Driven Calculator\n");

printf("1. Addition\n");

printf("2. Subtraction\n");

printf("3. Division\n");

printf("4. Multiplication\n\n");

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

scanf("%d", &choice);

printf("\nEnter two numbers: ");

scanf("%f %f", &no1, &no2);

switch (choice) {

case 1:

result = no1 + no2;

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

break;

case 2:

result = no1 - no2;

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

break;

case 3:

if (no2 != 0) {

result = no1 / no2;

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

} else {

printf("Error: Division by zero\n");

}

break;

case 4:

result = no1 \* no2;

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

break;

default:

printf("Invalid choice\n");

break;

}

}

1. #include <stdio.h>

int main() {

int choice;

float radius, result;

printf("Menu Driven Calculator\n");

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

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

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

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

scanf("%d", &choice);

printf("\n Enter the radius ");

scanf("%f", &radius);

switch (choice) {

case 1:

result = 2 \* 3.14159\* radius;

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

break;

case 2:

result = 3.14159 \* pow(radius, 2);

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

break;

case 3:

result = (4 \* 3.14159 \* pow(radius, 3)) / 3;

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

break;

default:

printf("Invalid choice\n");

break;

}

}

1. #include <stdio.h>

int main() {

char letter;

printf("Enter a letter: ");

scanf(" %c", &letter);

switch (letter) {

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", letter);

break;

default:

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

break;

}

}

5. #include <stdio.h>

int main() {

int month;

printf("Enter the month number: ");

scanf("%d", &month);

switch (month) {

case 1:

case 3:

case 5:

case 7:

case 10:

case 12:

printf("This month has 31 days.\n");

break;

case 2:

printf("This month has 28 days.\n");

break;

case 4:

case 9:

case 11:

printf("This month has 30 days.\n");

break;

default:

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

break;

}

}

**Practical 05**

1. #include <stdio.h>

int main() {

int i;

// Using while loop

i = 0;

while (i <= 100) {

printf("%d ", i);

i++;

}

printf("\n");

}

#include <stdio.h>

int main() {

int i;

// Using do-while loop

i = 0;

do {

printf("%d ", i);

i++;

} while (i <= 100);

printf("\n");

}

#include <stdio.h>

int main() {

int i;

// Using for loop

for (i = 0; i <= 100; i++) {

printf("%d ", i);

}

printf("\n");

}

1. #include <stdio.h>

int main() {

int marks[10];

int i, total = 0;

printf("Enter 10 marks\n");

while (i < 10) {

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

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

total += marks[i];

i++;

}

float average = (float)total /10;

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

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

if (average < 50) {

printf("Fail!\n");

} else {

printf("Pass!\n");

}

}

1. #include <stdio.h>

int main() {

int num;

long factorial = 1;

printf("Enter a number ");

scanf("%d", &num);

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

factorial \*= i;

}

printf("Factorial of %d is %llu.\n", num, factorial);

}

1. #include <stdio.h>

int main() {

int number, digit, sum = 0;

printf("Enter a number ");

scanf("%d", &number);

while (number != 0) {

digit = number % 10;

sum += digit;

number /= 10;

}

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

}

1. #include <stdio.h>

int main() {

int no, rev = 0, digit=0;

printf("Enter a number ");

scanf("%d", &no);

do {

digit = no % 10;

rev= rev\* 10 + digit;

no = no / 10;

} while (no > 0);

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

}

1. #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 to the power %d is %d\n", base, exponent, result);

}

1. #include <stdio.h>

int main() {

int no1 = 0, no2 = 1, nextNo, i;

printf("%d\n", no1);

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

printf("%d\n", no2);

nextNo = no1 + no2;

no1 = no2;

no2 = nextNo;

}

}

1. #include <stdio.h>

int main() {

int no, originalNo, remainder, result = 0, n = 0;

printf("Enter a number ");

scanf("%d", &no);

originalNo = no;

while (originalNo != 0) {

originalNo /= 10;

++n;

}

originalNo = no;

while (originalNo != 0) {

remainder = originalNo % 10;

result += pow(remainder, n);

originalNo /= 10;

}

if (result == no) {

printf("%d is an Armstrong number\n", no);

} else {

printf("%d is not an Armstrong number\n", no);

}

}

1. #include <stdio.h>

int main() {

char letter;

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

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

}

}

10. #include <stdio.h>

int main()

{

printf("\*\n");

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

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

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

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

}

11. #include <stdio.h>

int main() {

int no, i, isPrime = 1;

printf("Enter a number ");

scanf("%d", &no);

if (no <= 1) {

isPrime = 0;

} else {

for (i = 2; i <= no / 2; i++) {

if (no % i == 0) {

isPrime = 0;

break;

}

}

}

if (isPrime) {

printf("%d is a prime number\n", no);

} else {

printf("%d is not a prime number\n", no);

}

}

12. #include <stdio.h>

int main() {

int no, i;

printf("Enter an integer ");

scanf("%d", &no);

printf("Factors of %d are ", no);

for (i = 1; i <= no; i++) {

if (no % i == 0) {

printf("%d ", i);

}

}

}

13. #include <stdio.h>

int main() {

int number, sum = 0;

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

while (1) {

printf("Enter a number ");

scanf("%d", &number);

if (number == -1) {

break;

}

sum += number;

}

printf("Sum of the entered numbers %d\n", sum);

}

14. #include <stdio.h>

int main() {

int arr[10];

int i;

printf("Enter 10 integers\n");

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

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

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

}

printf("The entered array is ");

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

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

}

}

#include <stdio.h>

int main() {

int arr[10];

int i, count = 0;

printf("Enter 10 integers\n");

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

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

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

}

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

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

count++;

}

}

printf("The count of even numbers in the array is %d\n", count);

}

**Section B**

1. #include <stdio.h>

int main() {

int no[10];

int positives = 0;

int negatives = 0;

int zeros = 0;

printf("Enter 10 numbers\n");

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

scanf("%d", &no[i]);

if (no[i] > 0)

positives++;

else if (no[i] < 0)

negatives++;

else

zeros++;

}

printf("Number of positive numbers %d\n", positives);

printf("Number of negative numbers %d\n", negatives);

printf("Number of zeros %d\n", zeros);

}

1. #include <stdio.h>

int main() {

int marks[10];

int max, min, sum = 0;

float average;

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

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

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

if (i == 0) {

max = marks[0];

min = marks[0];

} else {

if (marks[i] > max)

max = marks[i];

if (marks[i] < min)

min = marks[i];

}

sum += marks[i];

}

average = (float)sum / 10;

printf("Maximum Marks %d\n", max);

printf("Minimum Marks %d\n", min);

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

}

1. #include <stdio.h>

int main() {

float prices[10];

float sum = 0;

float average;

int noGreaterThan200 = 0;

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

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

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

sum += prices[i];

if (prices[i] > 200)

noGreaterThan200++;

}

average= sum / 10;

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

printf("Number of items with price greater than 200 is %d\n", noGreaterThan200);

}

1. #include <stdio.h>

int main() {

int employeeNo, count = 0;

float basicSalary;

printf("Enter employee number (-999 to exit) ");

scanf("%d", &employeeNo);

while (employeeNo != -999) {

printf("Enter basic salary for employee number %d ", employeeNo);

scanf("%f", &basicSalary);

if (basicSalary >= 5000) {

count++;

}

printf("Enter employee number (-999 to exit) ");

scanf("%d", &employeeNo);

}

printf("Number of employees with a basic salary >= 5000 is %d\n", count);

}

1. #include <stdio.h>

int main() {

int employeeNo;

float hoursWorked;

float overtimePayment;

int countExceeding4000 = 0;

int totalEmployees = 0;

printf("Enter employee number (or -999 to end the program)\n");

scanf("%d", &employeeNo);

while (employeeNo != -999) {

printf("Enter hours worked by employee %d ", employeeNo);

scanf("%f", &hoursWorked);

float normalPay = 150 \* hoursWorked;

float overtimeHours = (hoursWorked > 40)? (hoursWorked - 40) 0;

overtimePayment = normalPay + (overtimeHours \* 200);

printf("Employee Number %d\n", employeeNo);

printf("Over Time Payment %.2f\n", overtimePayment);

if (overtimePayment > 4000) {

countExceeding4000++;

}

totalEmployees++;

printf("\nEnter employee number (or -999 to end the program)\n");

scanf("%d", &employeeNo);

}

if (totalEmployees > 0) {

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

printf("\nPercentage of employees whose Over Time Payment exceeds Rs. 4000 is %.2f%%\n", percentageExceeding4000);

} else {

printf("\nNo data entered.\n");

}

}