Name:Dulena Sathvindra Abayarathna

Student Number:30312

Batch number:23.1

Practical 05

Section A

01.

.1 While loop

#include<stdio.h>

int main()

{

int x=0;

while(x <= 100)

{

printf("%d ",x);

x++;

}

}

.2 do while loop

#include <stdio.h>

int main()

{

int num = 0;

do {

printf("%d ", num);

num++;

} while (num <= 100);

}

.3 For

#include <stdio.h>

int main() {

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

printf("%d ", num);

}

}

02.

#include <stdio.h>

int main() {

int marks[10],i,total=0;

float average;

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

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

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

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

total += marks[i];

}

average = (float)total / 10.0;

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

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

if (average < 50) {

printf("Fail!\n");

} else {

printf("Pass!\n");

}

}

03.

#include<stdio.h>

int main()

{

int num,result=1;

printf("enter a number:");

scanf("%d",&num);

if(num<0)

printf("Error: Factorial of a negative number is undefined.");

else if(num==0)

printf("Error: Factorial of a negative number is undefined.");

else

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

{

result\*=i;

}

printf("%d",result);

}

04.

#include<stdio.h>

int main()

{

int num,result=0;

printf("enter a number:");

scanf("%d",&num);

if(num<0)

printf("Error: Factorial of a negative number is undefined.");

else if(num==0)

printf("Error: Factorial of a negative number is undefined.");

else

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

{

result+=i;

}

printf("%d",result);

}

05.

#include<stdio.h>

int main()

{

int num,rem,rev=0;

printf("Enter a number: ");

scanf("%d", &num);

do{

rem=num%10;

rev=rem+(rev\*10);

num/=10;

} while (num!=0);

printf("%d",rev);

}

06.

#include<stdio.h>

int main()

{

int base,exp,res=1,i=1;

printf("enter number:");

scanf("%d",&base);

printf("enter power for number:");

scanf("%d",&exp);

if(exp>=0){

while(i<=exp){

res=res\*base;

i++;

}

printf("%d",res);

} else

printf("invalid exp value");

}

07.

#include<stdio.h>

int main()

{

char x[]="Fibonacci Sequence";

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

{

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

}

}

09.

#include<stdio.h>

int main()

{

char letter;

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

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

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

}

}

10.

#include<stdio.h>

int main()

{

int x=5;

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

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

printf("\*");

}

printf("\n");

}

}

11.

#include<stdio.h>

int main()

{

int number, is\_prime = 1;

printf("Enter a number: ");

scanf("%d", &number);

if (number < 2) {

is\_prime = 0;

} else {

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

if (number % i == 0) {

is\_prime = 0;

break;

}

}

}

if (is\_prime) {

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

} else {

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

}

}

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");

}

13.

#include<stdio.h>

int main()

{

int num, sum = 0;

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

while (1) {

scanf("%d", &num);

if (num == -1) {

break;

}

sum += num;

}

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

}

14.

#include<stdio.h>

int main()

{

int x[10];

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

printf("enter %d ",i);

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

}

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

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

}

}

15.

#include<stdio.h>

int main()

{

int x[10],count,new[10];

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

printf("enter %d ",i);

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

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

count++;

}

}

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

}

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]);

if (numbers[i] > 0) {

positiveCount++;

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

negativeCount++;

} else {

zeroCount++;

}

}

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

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

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

}

02.

#include<stdio.h>

int main()

{

int marks[10];

int i, sum = 0;

int max\_mark = 0, min\_mark = 100;

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

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

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

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

if (marks[i] > max\_mark)

max\_mark = marks[i];

if (marks[i] < min\_mark)

min\_mark = marks[i];

sum += marks[i];

}

float average = (float)sum / 10;

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

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

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

}

03.

#include<stdio.h>

int main()

{

int price[10];

int i, sum = 0;

int greater = 200, count = 0;

printf("Enter the price of 10 idems:\n");

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

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

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

if (price[i] > greater)

count+=1;

sum += price[i];

}

float average = (float)sum / 10;

printf("number of items which the price is greater than 200: %d\n", count);

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

}

04.

#include<stdio.h>

int main()

{

int employee\_no;

float basic\_salary;

int count = 0;

printf("Enter the Employee no and Basic Salary (Enter -999 to exit):\n");

while (1) {

printf("Employee no: ");

scanf("%d", &employee\_no);

if (employee\_no == -999)

break;

printf("Basic Salary: ");

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

if (basic\_salary >= 5000)

count++;

}

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

}

05.

#include <stdio.h>

int main() {

int employeeNo;

float hworked, opayment, totp = 0;

int count = 0, countExceeding4000 = 0;

printf("Enter the Employee No and Hours Worked:\n");

while (1) {

printf("Employee No: ");

scanf("%d", &employeeNo);

if (employeeNo == -999) {

break;

}

printf("Hours Worked: ");

scanf("%f", &hworked);

if (hworked > 40) {

opayment = 150 \* 40 + 200 \* (hworked - 40);

} else {

opayment = 150 \* hworked;

}

totp += opayment;

count++;

if (opayment > 4000) {

countExceeding4000++;

}

}

printf("Employee No\tOvertime Payment\n");

printf("Total\t\t%.2f\n", totp);

printf("Percentage of Employees with Overtime Payment > 4000: %.2f%%\n",

(float)countExceeding4000 / count \* 100);

}