# SE - Fundamentals of Programming

**MODULE: 1 (Fundamentals)**

Submitted by Dhaval Bhatti

**Q-1. Display This Information using print a. Your Name b. Your Birth date c. Your Age d. Your Address.**

#include <stdio.h>

int main (){

printf("Name: Dhaval Bhatti \n");

printf("DOB: 11/10/1986 \n");

printf("Age: 36 \n");

printf("Address: B-101, Swastik Sopan-2, Randesan, Gandhinagar-382007");

return 0;

}

**Q-2. Write a program to make addition, Subtraction, multiplication, and Division of Two Numbers.**

**Addition**

#include <stdio.h>

int main (){

int num1,num2,result;

printf("Please enter Number1");

scanf("%d",&num1);

printf("Please enter Number2");

scanf("%d",&num2);

result=num1+num2;

printf("Here is the result %d+%d=%d", num1,num2,result);

return 0;

}

**Subtraction**

#include <stdio.h>

int main (){

int num1,num2,result;

printf("Please enter Number1");

scanf("%d",&num1);

printf("Please enter Number2");

scanf("%d",&num2);

result=num1-num2;

printf("Here is the result %d-%d=%d", num1,num2,result);

return 0;

}

**Multiplication**

#include <stdio.h>

int main (){

int num1,num2,result;

printf("Please enter Number1");

scanf("%d",&num1);

printf("Please enter Number2");

scanf("%d",&num2);

result=num1\*num2;

printf("Here is the result %dx%d=%d", num1,num2,result);

return 0;

}

**Division**

#include <stdio.h>

int main (){

int num1,num2,result;

printf("Please enter Number1");

scanf("%d",&num1);

printf("Please enter Number2");

scanf("%d",&num2);

result=num1/num2;

printf("Here is the result %d/%d=%d", num1,num2,result);

return 0;

}

**Q-3. Write a program to make a square and cube of number.**

**Square**

#include <stdio.h>

int main (){

int num1, result;

printf("Please enter Number = ");

scanf("%d",&num1);

result=num1\*num1;

printf("Here is the square of %d =%d", num1,result);

return 0;

}

**Cube**

#include <stdio.h>

int main (){

int num1, result;

printf("Please enter Number = ");

scanf("%d",&num1);

result=num1\*num1\*num1;

printf("Here is the cube of %d =%d", num1,result);

return 0;

}

**Q-4. Write a program to find the Area of the Circle.**

#include <stdio.h>

int main (){

float num1, result;

printf("Please enter the redius = ");

scanf("%f",&num1);

result=num1\*num1\*3.14;

printf("Here is the Area of the Circle = %f", result);

return 0;

}

**Q-5. Write a program to find the Area of the Triangle**

#include <stdio.h>

int main (){

float num1,num2,area;

printf("Please enter Base: ");

scanf("%f",&num1);

printf("Please enter Height: ");

scanf("%f",&num2);

area=(num1\*num2)/2;

printf("Here is the area of triangle %f", area);

return 0;

}

**Q-6. Write a program to find the simple Interest.**

#include <stdio.h>

int main (){

float num1,num2,num3,result;

printf("Please enter the Principle Amount = ");

scanf("%f",&num1);

printf("Please enter the Rate of Interest = ");

scanf("%f",&num2);

printf("Please enter Time Duration = ");

scanf("%f",&num3);

result=(num1\*num2\*num3)/100;

printf("Simple Interest = %f", result);

return 0;

}

**Q-7. Write a program to convert temperature from degree centigrade to Fahrenheit.**

#include <stdio.h>

int main (){

float n1, result;

printf("Please enter temprature in degrees Celsius (-273.15 to 100) = ");

scanf("%f",&n1);

result= (n1\*1.8)+32;

printf("It's %f Fahrenheit." ,result);

return 0;

}

**8. Write a program to calculate the sum of 5 subjects & find the percentage—subject marks entered by the user.**

#include <stdio.h>

int main (){

float num1,num2,num3,num4,num5,total,percentage;

printf("Please enter Biology marks = ");

scanf("%f",&num1);

printf("Please enter Geography marks = ");

scanf("%f",&num2);

printf("Please enter Mathematics marks = ");

scanf("%f",&num3);

printf("Please enter Political Science marks = ");

scanf("%f",&num4);

printf("Please enter Social Studies marks = ");

scanf("%f",&num5);

total=num1+num2+num3+num4+num5;

percentage=total/5;

printf("Total = %f and Percentage = %f ", total, percentage);

return 0;

}

**Q-9. Write a Program to show a swap of two No's without using third variable.**

#include <stdio.h>

int main (){

int num1,num2;

printf("Please enter Number1 = ");

scanf("%d",&num1);

printf("Please enter Number2 = ");

scanf("%d",&num2);

printf("You entered Number1 as %d = The Swap values is %d \n", num1,num2);

printf("You entered Number2 as %d = The Swap values is %d", num2,num1);

return 0;

}

**Q-10. Write a Program to check the given number is Positive, Negative.**

#include <stdio.h>

int main (){

int num1;

printf("Please enter Num1: ");

scanf("%d",&num1);

if (num1 > 0)

{

printf("The Entered Number is a Positive Number");

}

if (num1 == 0)

{

printf("You entered 0");

}

else {

printf("The Entered Number is a Negative Number");

}

return 0;

}

**Q-11. Write a Program to check the given year is leap year or not.**

#include <stdio.h>

int main (){

int num1;

printf("Please enter the YEAR: ");

scanf("%d",&num1);

if (num1%4 == 0 || num1%400 == 0)

{

printf("Yeah, It's a leap year");

}

else {

printf("It's not a leap year");

}

return 0;

}

**Q-12. Write a Program to check the given number is prime or not prime.**

#include <stdio.h>

int main (){

int num1;

printf("Please enter a number: ");

scanf("%d",&num1);

if (num1%2 != 0 && num1%3 != 0)

{

printf("The Entered Number %d is a Prime Number", num1);

}

else {

printf("The Entered Number %d is NOT a Prime Number", num1);

}

return 0;

}

**Q-13. Write a program to find the Max number from the given three number using Nested If.**

#include <stdio.h>

int main (){

int num1,num2,num3;

printf("Please enter Num1: ");

scanf("%d",&num1);

printf("Please enter Num2: ");

scanf("%d",&num2);

printf("Please enter Num2: ");

scanf("%d",&num3);

if (num1 > num2)

{

if (num1 > num3)

{

printf("Number1 is Maximum");

}

else {

printf("Number3 is Maximum");

}

}

if (num2 > num3)

{

printf("Number2 is Maximum");

}

else {

printf("Number3 is Maximum");

}

return 0; }

**Q-14. Write a program to find the Max number from the given three numbers using Ternary Operator**

#include <stdio.h>

int main (){

int num1,num2,num3;

printf("Please enter Num1: ");

scanf("%d",&num1);

printf("Please enter Num2: ");

scanf("%d",&num2);

printf("Please enter Num3: ");

scanf("%d",&num3);

int result = num1 > num2 ? ((num1 > num3) ? printf("Number1 is Maximum") : printf("Number3 is Maximum")) : ((num2 > num3) ? printf("Number2 is Maximum") : printf("Number3 is Maximum"));

return 0; }

**Q-15. Write a program to find the Max number from the given three number using Nested If**

#include <stdio.h>

int main (){

int num1,num2,num3;

printf("Please enter Num1: ");

scanf("%d",&num1);

printf("Please enter Num2: ");

scanf("%d",&num2);

printf("Please enter Num2: ");

scanf("%d",&num3);

if (num1 > num2)

{

if (num1 > num3)

{

printf("Number1 is Maximum");

}

else {

printf("Number3 is Maximum");

}

}

if (num2 > num3)

{

printf("Number2 is Maximum");

}

else {

printf("Number3 is Maximum");

} return 0; }

**Q-16. Write a program user enter the 5 subjects mark. You have to make a total and find the percentage. percentage > 75 you have to print “Distinction” percentage > 60 and percentage <= 75 you have to print “First class” percentage >50 and percentage <= 60 you have to print “Second class” percentage > 35 and percentage <= 50 you have to print “Pass class” Otherwise print “Fail”**

#include <stdio.h>

int main (){

float num1,num2,num3,num4,num5,total,percentage;

printf("Please enter Biology marks = ");

scanf("%f",&num1);

printf("Please enter Geography marks = ");

scanf("%f",&num2);

printf("Please enter Mathematics marks = ");

scanf("%f",&num3);

printf("Please enter Political Science marks = ");

scanf("%f",&num4);

printf("Please enter Social Studies marks = ");

scanf("%f",&num5);

total=num1+num2+num3+num4+num5;

percentage=total/5;

printf("Total = %f and Percentage = %f \n", total, percentage);

if ((percentage > 75))

{

printf("Grade: Distinction");

}

else if ((percentage <= 75 && percentage > 60))

{

printf("Grade: First Class");

}

else if (percentage <= 60 && percentage > 50)

{

printf("Grade: Second Class");

}

else if (percentage <= 50 && percentage > 35)

{

printf("Grade: Pass Class");

}

else

{

printf("Grade: Failed");

}

return 0;

}

**Q-17. Write Program use switch statement. Display Monday to Sunday**

#include <stdio.h>

int main (){

int n1;

printf("Please enter the weekday (1 to 7) = ");

scanf("%d",&n1);

switch (n1)

{

case 1 /\* constant-expression \*/:

printf("%d is a Monday", n1); /\* code \*/

break;

case 2 /\* constant-expression \*/:

printf("%d is a Tuesday", n1); /\* code \*/

break;

case 3 /\* constant-expression \*/:

printf("%d is a Wednesday", n1); /\* code \*/

break;

case 4 /\* constant-expression \*/:

printf("%d is a Tursday", n1); /\* code \*/

break;

case 5 /\* constant-expression \*/:

printf("%d is a Friday", n1); /\* code \*/

break;

case 6 /\* constant-expression \*/:

printf("%d is a Saturday", n1); /\* code \*/

break;

case 7 /\* constant-expression \*/:

printf("%d is a Sunday", n1); /\* code \*/

break;

default:

printf("Invalid entry! PLease enter between 1 to 7 only.");

break;

}

return 0;

}

**Q-18. Write a Program of Addition, Subtraction ,Multiplication and Division using Switch case.(Must Be Menu Driven)**

#include <stdio.h>

int main (){

float n1, n2;

int s1;

printf("Welcome to Switch Based Program.\n");

printf("1. Addition \n");

printf("2. Substraction \n");

printf("3. Multiplication \n");

printf("4. Division \n");

printf("Please select from (1-4) to start a program = ");

scanf("%d",&s1);

printf("Please enter Number1 = ");

scanf("%f",&n1);

printf("Please enter Number2 = ");

scanf("%f",&n2);

switch (s1)

{

case 1 /\* Addition \*/:

printf("Addition of %f+%f = %f", n1,n2, n1+n2); /\* code \*/

break;

case 2 /\* Substraction \*/:

printf("Substraction of %f-%f = %f", n1,n2, n1-n2); /\* code \*/

break;

case 3 /\* Multiplication \*/:

printf("Multiplication of %fx%f = %f", n1,n2, n1\*n2); /\* code \*/

break;

case 4 /\* Division \*/:

printf("Division of %f/%f = %f", n1,n2, n1/n2); /\* code \*/

break;

default:

printf("Invalid entry! PLease enter between 1 to 4 only.");

break;

}

return 0;

}

**Q-19. Write a program of to find out the Area of Triangle, Rectangle and Circle using If Condition.(Must Be Menu Driven)**

#include <stdio.h>

int main (){

float n1, n2, result;

int s1;

printf("Welcome to the Area Finding Program.\n");

printf("1. Area of Triangle \n");

printf("2. Area of Rectangle \n");

printf("3. Area of Circle \n");

printf("Please select from (1-3) to start a program = ");

scanf("%d",&s1);

if (s1 == 1)

{

printf("Please enter Height = ");

scanf("%f",&n1);

printf("Please enter Base = ");

scanf("%f",&n2); /\* code \*/

result = ((n1\*n2)/2);

printf("Area of Triangle is = %f", result);

}

else if (s1 == 2)

{

printf("Please enter Length = ");

scanf("%f",&n1);

printf("Please enter Width = ");

scanf("%f",&n2); /\* code \*/

result = ((n1\*n2));

printf("Area of Rectangle is = %f", result);

}

else if (s1 == 3)

{

printf("Please enter the redius of a circle = ");

scanf("%f",&n1);

result = ((n1\*n1)\*3.14);

printf("Area of Rectangle is = %f", result);

}

else {

printf("Invalid entry! PLease enter between 1 to 3 only.");

}

return 0;

}

**Q-20-a. Looping Programs a. Write a program to print the 1 to 10 using For loop.**

#include <stdio.h>

int main (){

for (int i = 1; i < 11; i++)

{

printf("%d \n", i); /\* code \*/

}

return 0;

}

**Q-20-b. Write a Program to print the 51 to 60 using while loop**

#include <stdio.h>

int main (){

int i;

i = 51;

while (i >= 51 && i <= 60 /\* condition \*/)

{

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

i++; /\* code \*/

}

return 0;

}

**Q-20-c. write a program to print the 100 to 81 using do....while loop**

#include <stdio.h>

int main (){

int i;

i = 100;

do

{

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

i--; /\* code \*/

} while (i >= 81 && i <= 100 /\* condition \*/);

return 0;

}

**Q-20-d .write a program you have to find the factorial of given number.**

#include <stdio.h>

int main (){

int num, fact;

fact = 1;

printf("Please enter a number to find it's Factorial = ");

scanf("%d", &num);

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

{

fact=fact\*i; /\* code \*/

}

printf("He is the Factorial of %d! = %d", num, fact);

return 0;

}

**Q-20-e. Write a program you have to print the Fibonacci series up to user given number**

#include <stdio.h>

int main (){

int num1, num2, num3, FS;

num1 = 0;

num2 = 1;

printf("Please enter a number to find Fibonacci Sequence upto that number = ");

scanf("%d", &num3);

printf("Here is the Fibonacci Sequence upto %d = %d , %d ,", num3, num1, num2);

for (int i = 3; i <= num3; i++)

{

FS=num1+num2; /\* code \*/

num1=num2;

num2=FS;

printf(" %d ," ,FS);

}

return 0;

}

**Q-20-f. write a program you have to print the table of given number.**

#include <stdio.h>

int main (){

int i, num;

printf("Please enter the number to find sum of numbers = ");

scanf("%d", &num);

i = 1;

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

while (i <= 10 /\* condition \*/)

{

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

i++; /\* code \*/

}

return 0;

}

**Q-20-g. Write a program to print the number in reverse order.**

#include <stdio.h>

int main (){

int num, result;

printf("Please enter a number = ");

scanf("%d", &num);

while (num > 0 /\* condition \*/)

{

result = num%10; /\* For remainder/modulo/to check last number \*/

printf("%d ", result); /\* code \*/

num=num/10; /\* For reverse counting/sequence \*/

}

return 0;

}

**Q-20-h .Write a program to find out the max from given number (E.g. No:- 562 Max number is 6 )**

#include <stdio.h>

int main (){

int num1,num2,num3,usernum;

printf("Please enter 3 digit number only= ");

scanf("%d",&usernum);

num3=usernum%10;

usernum=usernum/10;

num2=usernum%10;

usernum=usernum/10;

num1=usernum%10;

if (num1 > num2)

{

if (num1 > num3)

{

printf("Number1 is Maximum");

}

else {

printf("Number3 is Maximum");

}

}

if (num2 > num3)

{

printf("Number2 is Maximum");

}

else {

printf("Number3 is Maximum");

}

return 0;

}

**Q-20-i. Write a program make a summation of given number**

#include <stdio.h>

int main (){

int num, result, sum=0;

printf("Please enter a number = ");

scanf("%d", &num);

while (num > 0 /\* condition \*/)

{

result = num%10; /\* For remainder/modulo/to check last number \*/

sum = sum+result;

num=num/10; /\* For reverse counting/sequence \*/

}

printf("The sum of numbers = %d", sum);

return 0;

}

**Q-20-j. Write a program you have to make a summation of first and last Digit.**

#include <stdio.h>

int main (){

int num, lastdigit, firstdigit, original;

printf("Please enter a number (10 onwards) = ");

scanf("%d", &num);

original = num;

lastdigit = num%10; /\* For remainder/modulo/to check last number \*/

while (original > 0 /\* condition \*/)

{

firstdigit=original%10;

original=original/10; /\* For reverse counting/sequence \*/

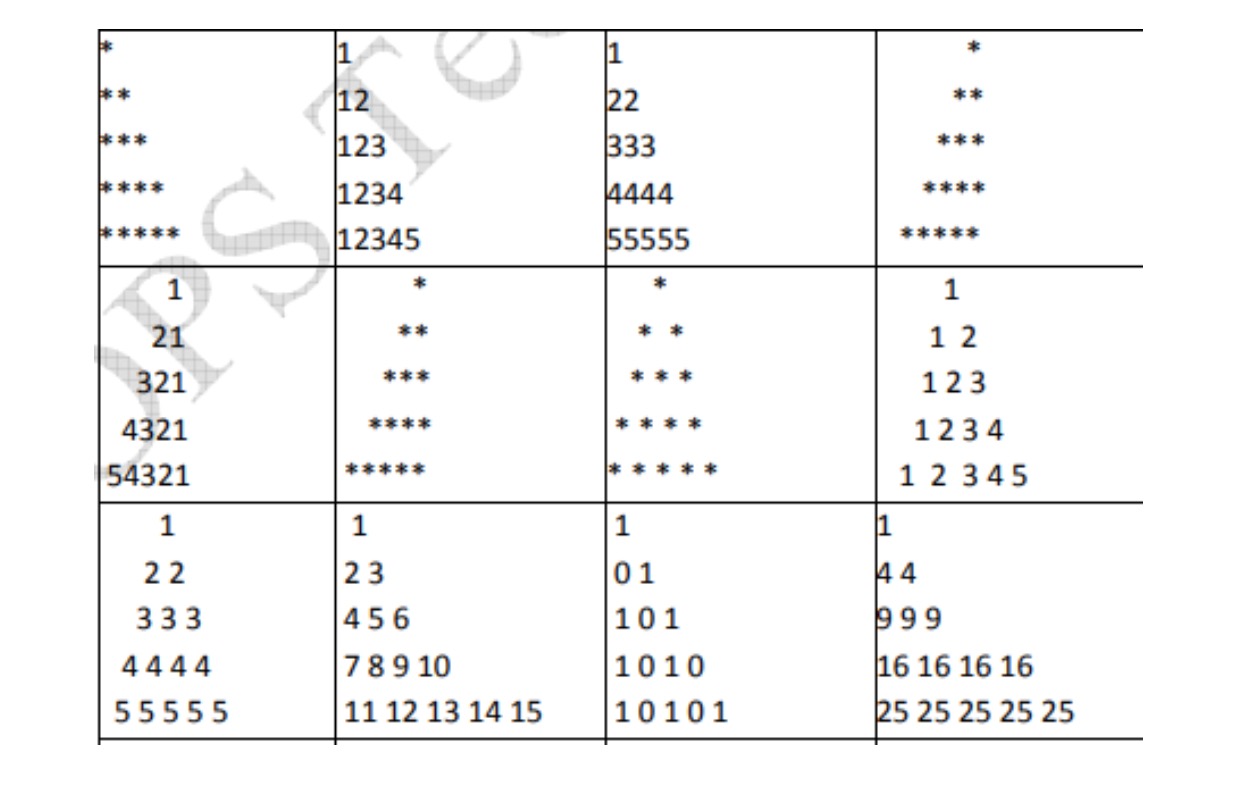
}

printf("The sum of first & last digit is = %d ", firstdigit+lastdigit); /\* code \*/

return 0;

}

**Q-21. Create Below Patterns:**



#include <stdio.h>

int main()

{

int row, col;

for (row = 1; row <= 5; row++)

{

for (col = 1; col <= row; col++)

{

printf("\*");

}

printf("\n");

}

return 0;

}

#include <stdio.h>

int main()

{

int row, col;

for (row = 1; row <= 5; row++)

{

for (col = 1; col <= row; col++)

{

printf("%d",col);

}

printf("\n");

}

return 0;

}

#include <stdio.h>

int main()

{

int row, col;

for (row = 1; row <= 5; row++)

{

for (col = 1; col <= row; col++)

{

printf("%d",row);

}

printf("\n");

}

return 0;

}

#include <stdio.h>

int main()

{

int row, col;

for (row = 5; row >= 1; row--)

{

for (col = 1; (col < row && col >= 1); col++)

{

printf(" ");

}

for (col = 5; (col >= row && col <= 5); col--)

{

printf("\*");

}

printf("\n");

}

return 0;

}

#include <stdio.h>

int main()

{

int row, col, num = 5;

for (row = 1; row <= num; row++)

{

for (col = num; (col >= 1); col--)

{

if (row >= col)

{

printf("%d", col);

}

else

printf(" ");

}

printf("\n");

}

return 0;

}

#include <stdio.h>

int main()

{

int row, col, num = 5;

for (row = 1; row <= num; row++)

{

for (col = num; (col >= 1); col--)

{

if (row >= col)

{

printf("\* ");

}

else

printf(" ");

}

printf("\n");

}

return 0;

}

#include <stdio.h>

int main()

{

int row, col, space;

for (row = 1; row <= 5; row++)

{

for (space = 4; space >= row; space--)

{

printf(" ");

}

for (col = 1; col <= row; col++)

{

printf("%d ", col);

}

printf("\n");

}

return 0;

}

#include <stdio.h>

int main()

{

int row, col, space;

for (row = 1; row <= 5; row++)

{

for (space = 4; space >= row; space--)

{

printf(" ");

}

for (col = 1; col <= row; col++)

{

printf("%d ", row);

}

printf("\n");

}

return 0;

}

#include <stdio.h>

int main()

{

int row, col, num=1;

for (row = 1; row <= 5; row++)

{

for (col = 1; col <= row; col++)

{

printf("%d ", num);

num++;

}

printf("\n");

}

return 0;

}

#include <stdio.h>

int main()

{

int row, col;

for (row = 1; row <= 5; row++)

{

for (col = 0; col < row; col++)

{

printf("%d ", (row + col) % 2);

}

printf("\n");

}

return 0;

}

#include <stdio.h>

int main()

{

int row, col;

for (row = 1; row <= 5; row++)

{

for (col = 1; col <= row; col++)

{

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

}

printf("\n");

}

return 0;

}