PROGRAMING C

LAB 01

```
#include <stdio.h>
#include <stdlib.h>

//Q-1
int main()
{
    printf("Dewmi Amodya Mendis\n");
    printf("G\p.de.s.Kularathne Maha
Vidyalaya\n");
}

//Q-2
int main()
{
```

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

//Q-3
int main()
{
    int itemno,qty;
    char desc[20];
    float price,tprice;
    printf("Item Number");
    scanf("%d",&itemno);
    printf("Enter The Item Description");
```

```
    scanf("%s",&desc);
    printf("Enter Item Quantity");
    scanf("%d",&qty);
    printf("Enter  Item Price");
    scanf("%f",&price);
    tprice=qty*price;
    printf("Item no %d\n",itemno);
    printf("Description %s\n",desc);
    printf("Total price %.2f\n",tprice);
}


//Q-4
int main()
{
    int no1,no2,total;
```

```
    printf("Enter First Number");
    scanf("%d",&no1);
    printf("Enter Second Number");
    scanf("%d",&no2);
    total=no1+no2;
    printf("The total is %d\n",total);
}




//Q-5
int main()
{
    float no1,no2,average;
    printf("Enter First Number");
```

```
    scanf("%f",&no1);
    printf("Enter Second Number");
    scanf("%f",&no2);
    average=(no1+no2)/2;
    printf("The average is %f\n",average);
}

//Q-6
int main()
{
    char name[20];
    int byear,age;
    printf("Enter Student Name");
    scanf("%s",&name);
    printf("%s\n",name);
    printf("Enter Birth Year");
```

```
    scanf("%d",&byear);
    age=2023-byear;
    printf("%d\n",age);
}


//Q-8
int main()
{
    printf("The color: %s\n", "blue");
      printf("First number: %d\n", 12345);
      printf("Second number: %04d\n", 25);
      printf("Third number: %i\n", 1234);
      printf("Float number: %3.2f\n", 3.14159);
      printf("Hexadecimal: %x\n", 255);
      printf("Octal: %o\n", 255);
```

```
    printf("Unsigned value: %u\n", 150);
    printf("Just print the percentage sign
%%\n", 10);



}
```

Output :-

```
The color: blue
First number: 12345
Second number: 0025
Third number: 1234
Float number: 3.14
Hexadecimal: ff
Octal: 377
Unsigned value: 150
Just print the percentage sign %
```

```
    return 0;
}
```

LAB 02

```
#include <stdio.h>
#include <stdlib.h>
//Question 1
int main()
{
    int age;
    printf("HI,HOW OLD ARE YOU?");
    scanf("%d",&age);
```

```
    printf("WELCOME%d\n",age);
    printf("LET'S BE FRIENDS\n");
}

//Question 2
int main()
{
    printf("%5d%5d%5d\n", 2, 4, 8);
    printf("%5d%5d%5d\n", 3, 9, 27);
    printf("%5d%5d%5d\n", 4, 16, 64);
}

//Question 3
int main()
{
    float average,distance,time;
```

```
    printf("Enter distance in meters");
    scanf("%f",&distance);
    printf("Enter time in seconds");
    scanf("%f",&time);
    average=distance/time;
    printf("Average speed:%.2f",average);
}

//Question 4
int main()
{
    float farenheit;
    float celsius;
    printf("Enter temperature in degrees
farenheit");
    scanf("%f",&farenheit);
```

```
    celsius=(farenheit-32)*5/9;
    printf("Temperature in degrees celsius:
%.2f\n",celsius);
}
```

LAB 03

```
#include <stdio.h>
#include <stdlib.h>
//Q-1
int main()
{
    int n1,n2,max;
    printf("Enter Two Numbers");
    scanf("%d %d",&n1,&n2);
    if(n1>n2)
```

```
    max=n1;
    else
        max=n2;
    printf("The Highest is %d\n",max);
    return 0;
}

//Q-2
int main()
{
    int n1,n2,n3,largest,smallest;

    printf("Enter Three Integer Numbers");
    scanf("%d %d %d",&n1,&n2,&n3);

    largest=n1;
```

```
if(n2>largest)
{
   largest=n2;
}
if(n3>largest)
{
   largest=n3;
}
smallest=n1;
if(n2<smallest)
{
   smallest=n2;
}
if(n3<smallest)
{
   smallest=n3;
```

```
    }
    printf("Largest Number %d\n",largest);
    printf("Smallest Number %d\n",smallest);

    return 0;
}

//Q-3
int main()
{
    char empname[20];
    float bs,inc,ns;
    printf("Enter Employee Name");
    scanf("%s",&empname);
    printf("Enter Basic Salary");
    scanf("%f",&bs);
```

```
    if (bs>=10000)
        inc=bs*0.15;
    else
        if(bs>=5000)
            inc=bs*0.10;
        else
            inc=bs*0.05;
        ns=bs+inc;
        printf("Employee Name %s\n",empname);
        printf("New Salary %.2f\n",ns);

    return 0;
}

//Q-4
int main()
```

```
{
   float radius;
   printf("Enter the radius");
   scanf("%f",&radius);

   printf("Diameter is %.2f\n",radius*2.0);
   printf("Circumference is
%.2f\n",radius*2.0*3.14159);
   printf("Area is
%.2f\n",radius*radius*3.14159);

   return 0;
}

//Q-5
int main()
{
```

```
    int n1,n2;
    printf("Enter two integer numbers");
    scanf("%d %d",&n1,&n2);
    if(n1%n2==0)
    {
        printf("%d is a multiple of %d.\n",n1,n2);
    }
    else
    {
        printf("%d s not a multiple of
%d.\n",n1,n2);
    }

    return 0;
}
```

```
//Q-6
int main()
{
    char uppercase[]={'A', 'B', 'C'};
    char lowercase[]={'a', 'b', 'c'};
    char digits[]={'0', '1', '2'};
    char symbols[]={'$', '*', '+', '/', ' '};
    printf("Uppercase letters\n");
    for (int i=0;i<3;i++)
    {
        printf("%c
%d\n",uppercase[i],(int)uppercase[i]);
    }
    printf("\nLowercase letters\n");
    for (int i=0;i<3;i++)
    {
```

```
        printf("%c
%d\n",lowercase[i],(int)lowercase[i]);
    }
    printf("\nDigits\n");
    for (int i=0;i<3;i++)
    {
        printf("%c %d\n",digits[i],(int)digits[i]);
    }
    printf("\nSymbols\n");
    for (int i=0;i<5;i++)
    {
        printf("%c
%d\n",symbols[i],(int)symbols[i]);
    }

    return 0;
}
```

```
//Q-7
int main()
{
    float BasicSalary,MonthlySales;
    int YearsOfService;
    char City;
    float AdditionalAllowance;
    float Bonus;
    float GrossRemuneration;

    printf("Enter the Basic Salary");
    scanf("%f",&BasicSalary);

    printf("Enter the number of Years Of
Service");
```

```
    scanf("%d",&YearsOfService);

    printf("Enter the City (C for Colombo,any
other character for other cities)");
    scanf("%c",&City);

    printf("Enter the Monthly Sales amount");
    scanf("%f",&MonthlySales);

    if (YearsOfService>5){
        AdditionalAllowance=0.1*BasicSalary;
    }
    if (City=='C'){

AdditionalAllowance=AdditionalAllowance+250
0;
    }
```

```
    if (MonthlySales>=0 && MonthlySales <=
25000){
        Bonus=0.1*MonthlySales;
    }
    else if (MonthlySales > 25000 &&
MonthlySales <= 50000){
        Bonus=0.12*MonthlySales;
    }
    else if (MonthlySales > 50000){
        Bonus=0.15*MonthlySales;
    }
    GrossRemuneration=BasicSalary +
AdditionalAllowance + Bonus;
    printf("Gross Monthly Remuneration is
%.2f\n",GrossRemuneration);
    return 0;
}
```

LAB 04

```
#include <stdio.h>
#include <stdlib.h>
//Section A
//Q-1
//Using While Loop
int main()
{
   int i=0;
   while(i<=100)
   {
      printf("%d",i);
      i++;
   }
   return 0;
```

```
}
//Using Do-While Loop
int main()
{
   int i=0;
   do
   {
      printf("%d",i);
      i++;
   }
   while(i<=100);
   return 0;
}
//Using For Loop
int main()
{
```

```
    int i=0;
    for (i=0;i<=100;i++);
    {
        printf("%d",i);
    }
    return 0;
}

//Q-2
int main()
{
    int marks[10];
    int i,total=0;
    float average;

    printf("Enter the 10 marks\n");
```

```
for (i=0;i<10;i++)
{
   scanf("%d",&marks[i]);
   total+=marks[i];
}
average=total/10.0;

print("Total marks %d\n",total);
printf("Average marks %.2f\n",average);

if (average<50)
{
   printf("Fail\n");
}
else
```

```
    {
        printf("Pass\n");
    }
    return 0;
}

//Q-3
int main()
{
    int i,num,fac=1;
    printf("Enter num");
    scanf("%d",&num);
    if(num<0)
    {
        printf("error");
    }
```

```
    else
    {
        for(i=1;i<=num;i++)
        {
            fac*=i;
        }
        printf("factorial=%d",fac);
    }
    return 0;
}

//Q-4
int main()
{
    int num,sum=0,result;
    printf("Enter Number");
```

```
    scanf("%d",&num);

    while(num!=0)
    {
        result=num%10;
        sum+=result;
        num/=10;
    }
    printf("sum=%d",sum);
    return 0;
}

//Q-5
int main()
{
    int num,reversedNum=0,remain;
```

```
    printf("Enter a number");
    scanf("%d",&num);

    do
    {
        remain=num%10;
        reversedNum=reversedNum+10+remain;
        num/=10;
    }
    while (num!=0);
    printf("Reversed Number
%d\n",reversedNum);
    return 0;
}

//Q-6
```

```
int main()
{
    int base,exponent,result=1;

    printf("Enter the base");
    scanf("%d",&base);

    printf("Enter the exponent");
    scanf("%d",&exponent);
    if(exponent>=0)
    {
        for(int i=0;i<exponent;i++)
        {
            result*=base;
        }
        else
```

```
            printf("Exponent should be a non-
negative integer\n");
    }
    printf("Result %d\n",result);
    return 0;
}

//Q-7
int main()
{
   int n=10;
   int first=0,second=1,next;

   printf("Fibonacci Sequence");

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

```
  {
     if(i<=1)
     {
        next=i;
     }
     else
     {
        next=first+second;
        first=second;
        second=next;
     }
     printf("%d",next);
  }
  printf("\n");
  return 0;
}
```

```
//Q-8
int main()
{
   int
number,originalNumber,remainder,result=0,n=0
;

   printf("Enter an integer");
   scanf("%d",&number);

   originalNumber=number;

   while(originalNumber != 0)
      {
      originalNumber /= 10;
      ++n;
```

```
    }
  originalNumber = number;

  while(originalNumber != 0)
    {
    remainder=originalNumber%10;
    result+=pow(remainder,n);
    originalNumber/=10;
    }
  if (result==number)
  {
    printf("%d is an Armstrong number.\n",
number);
  }
  else
  {
```

```
        printf("%d is not an Armstrong number.\n", number);
    }
   return 0;
}

//Q-9
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);
    }
   return 0;
```

```
}
//Q-10
int main()
{
    int rows=5;
    for (int i=1; i<=rows;i++)
    {
        for (int j=1;j<=i;j++)
        {
            printf("*");
        }
        printf("\n");
    }
  return 0;
}
```

```
//Q-11
int isPrime(int num)
{
    if (num<=1) {
        return 0;
    }

    for (int i=2;i*i<=num;i++)
        {
        if (num%i==0)
        {
            return 0;
        }
        }

    return 1;
```

```
}

int main()
{
    int number;
    printf("Enter a number: ");
    scanf("%d",&number);

    if (isPrime(number)) {
        printf("%d is a prime number\n",number);
    } else
    {
        printf("%d is not a prime
number\n",number);
    }
```

```
    return 0;
}

//Q-12
void printFactors(int number)
{
    printf("Factors of %d",number);
    for (int i=1;i<=number;i++)
        {
        if (number%i==0)
        {
            printf("%d",i);
        }
        }
}
```

```
int main() {
    int num;
    printf("Enter an integer: ");
    scanf("%d",&num);
    printFactors(num);
    return 0;
}

//Q-13
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);
    return 0;
}
```

```
//Q-14
int main()
{
    int arr[10];
    int i;

    printf("Please enter 10 integers\n");

    for (i=0;i<10;i++)
    {
        printf("Enter element %d", i + 1);
        scanf("%d",&arr[i]);
    }

    printf("\nThe array you entered is\n");
```

```
    for (i=0;i<10;i++)
    {
        printf("%d",arr[i]);
    }
    return 0;
}

//Q-15
int main()
{
    int arr[10];
    int i;
    int evenCount=0;

    printf("Please enter 10 integers\n");
```

```
for (i=0;i<10;i++)
{
    printf("Enter element %d",i+1);
    scanf("%d",&arr[i]);

    if (arr[i]%2==0)
    {
        evenCount++;
    }
}

printf("\nThe array you entered is\n");

for (i=0;i<10;i++)
{
    printf("%d",arr[i]);
```

```
    }
printf("\n\nThe count of even numbers in the
array is %d\n",evenCount);

    return 0;
}

//Section B
//Q-1
int main()
{
    int numbers[10];
    int
positiveCount=0,negativeCount=0,zeroCount=0;

    printf("Please 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("Number of positive numbers
%d\n",positiveCount);
    printf("Number of negative numbers
%d\n",negativeCount);
    printf("Number of zeros %d\n",zeroCount);

    return 0;
}

//Q-2
int main()
{
    int marks[10];
    int i,sum=0,max=0,min=100;
    float average;
```

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

    for (i=0;i<10;i++)
    {
        printf("Enter the marks of student
%d",i+1);
        scanf("%d",&marks[i]);

        sum+=marks[i];

        if (marks[i]>max)
        {
            max=marks[i];
        }
```

```
        if (marks[i]<min)
        {
            min=marks[i];
        }
    }

    average=(float)sum/10;

    printf("\nMaximum marks %d\n",max);
    printf("Minimum marks %d\n",min);
    printf("Average marks %.2f\n",average);
    return 0;
}

//Q-3
int main()
```

```
{
    float price[10];
    int count=0;
    float sum=0;

    printf("Please enter the prices of 10
items\n");
    for (int i=0;i<10;i++)
    {
        printf("Item %d",i+1);
        scanf("%f",&price[i]);
        sum+=price[i];

        if (price[i]>200)
        {
            count++;
```

```
        }
    }

    float average=sum/10;
    printf("\nAverage price of an item
%.2f\n",average);

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

    return 0;
}

//Q-4
int main()
{
    int employeeNo,count=0;
```

```
    float basicSalary;

    printf("Enter the employee number and basic
salary (enter -999 to stop)\n");

    while(1)
    {
        printf("Employee No");
        scanf("%d",&employeeNo);

        if(employeeNo==-999)
        {
            break;
        }

        printf("Basic Salary");
```

```
        scanf("%f",&basicSalary);

        if(basicSalary>=5000)
        {
            count++;
        }
    }

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

    return 0;
}

//Q-5
int main()
```

```
{
    int employeeNumber,hoursWorked;
    int
overtimePayment,overtimeExceeding4000=0;
    int
totalEmployees=0,employeesWithOvertime=0;

    const int normalOvertimeRate=150;
    const int excessOvertimeRate=200;

    printf("Enter employee number (-999 to
end)");
    scanf("%d",&employeeNumber);

    while (employeeNumber!=-999)
    {
```

```
        printf("Enter hours worked by employee
%d",employeeNumber);
        scanf("%d",&hoursWorked);

        totalEmployees++;

        if (hoursWorked>40)
        {
            employeesWithOvertime++;

            int overtimeHours=hoursWorked-40;

overtimePayment=(normalOvertimeRate*(40-
overtimeHours))+(excessOvertimeRate*overtim
eHours);

            if (overtimePayment>4000)
```

```
        {
            overtimeExceeding4000++;
        }
    }
    else
    {
        overtimePayment = 0;
    }

    printf("Employee Number %d\n", employeeNumber);
    printf("Overtime Payment %d\n", overtimePayment);

    printf("\nEnter employee number (-999 to end)");
    scanf("%d",&employeeNumber);
```

```
    }

    float
percentageExceeding4000=(float)overtimeExce
eding4000/employeesWithOvertime*100;

    printf("\nPercentage of employees with
overtime payment exceeding Rs.4000
%.2f%%\n",percentageExceeding4000);

    return 0;
}
```

LAB 05

```
#include <stdio.h>
#include <stdlib.h>
```

```
//Section A
//Q-1
//Using While Loop
int main()
{
   int i=0;
   while(i<=100)
   {
      printf("%d",i);
      i++;
   }
   return 0;
}
//Using Do-While Loop
int main()
{
```

```
    int i=0;
    do
    {
        printf("%d",i);
        i++;
    }
    while(i<=100);
    return 0;
}
//Using For Loop
int main()
{
    int i=0;
    for (i=0;i<=100;i++);
    {
        printf("%d",i);
```

```
    }
    return 0;
}

//Q-2
int main()
{
    int marks[10];
    int i,total=0;
    float average;

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

    for (i=0;i<10;i++)
    {
        scanf("%d",&marks[i]);
```

```
    total+=marks[i];
}
average=total/10.0;

print("Total marks %d\n",total);
printf("Average marks %.2f\n",average);

if (average<50)
{
    printf("Fail\n");
}
else
{
    printf("Pass\n");
}
return 0;
```

```
}

//Q-3
int main()
{
    int i,num,fac=1;
    printf("Enter num");
    scanf("%d",&num);
    if(num<0)
    {
        printf("error");
    }
    else
    {
        for(i=1;i<=num;i++)
        {
```

```
            fac*=i;
        }
        printf("factorial=%d",fac);
    }
    return 0;
}

//Q-4
int main()
{
    int num,sum=0,result;
    printf("Enter Number");
    scanf("%d",&num);

    while(num!=0)
    {
```

```
        result=num%10;
        sum+=result;
        num/=10;
    }
    printf("sum=%d",sum);
    return 0;
}

//Q-5
int main()
{
    int num,reversedNum=0,remain;
    printf("Enter a number");
    scanf("%d",&num);

    do
```

```
    {
        remain=num%10;
        reversedNum=reversedNum+10+remain;
        num/=10;
    }
    while (num!=0);
    printf("Reversed Number
%d\n",reversedNum);
    return 0;
}

//Q-6
int main()
{
    int base,exponent,result=1;
```

```
    printf("Enter the base");
    scanf("%d",&base);

    printf("Enter the exponent");
    scanf("%d",&exponent);
    if(exponent>=0)
    {
       for(int i=0;i<exponent;i++)
       {
          result*=base;
       }
       else
          printf("Exponent should be a non-
negative integer\n");
    }
    printf("Result %d\n",result);
```

```
    return 0;
}

//Q-7
int main()
{
   int n=10;
   int first=0,second=1,next;

   printf("Fibonacci Sequence");

   for(int i=0;i<n;i++);
   {
      if(i<=1)
      {
         next=i;
```

```
        }
        else
        {
            next=first+second;
            first=second;
            second=next;
        }
        printf("%d",next);
    }
    printf("\n");
    return 0;
}

//Q-8
int main()
{
```

```
    int
number,originalNumber,remainder,result=0,n=0
;

    printf("Enter an integer");
    scanf("%d",&number);

    originalNumber=number;

    while(originalNumber != 0)
        {
        originalNumber /= 10;
        ++n;
        }
    originalNumber = number;

    while(originalNumber != 0)
```

```
        {
        remainder=originalNumber%10;
        result+=pow(remainder,n);
        originalNumber/=10;
        }
    if (result==number)
    {
        printf("%d is an Armstrong number.\n",
number);
    }
    else
    {
        printf("%d is not an Armstrong number.\n",
number);
    }
   return 0;
}
```

```
//Q-9
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);
    }
   return 0;
}
//Q-10
int main()
{
    int rows=5;
```

```
    for (int i=1; i<=rows;i++)
    {
        for (int j=1;j<=i;j++)
        {
            printf("*");
        }
        printf("\n");
    }
  return 0;
}

//Q-11
int isPrime(int num)
{
    if (num<=1) {
        return 0;
```

```
    }

    for (int i=2;i*i<=num;i++)
        {
        if (num%i==0)
        {
            return 0;
        }
        }

    return 1;
}

int main()
{
    int number;
```

```
    printf("Enter a number: ");
    scanf("%d",&number);

    if (isPrime(number)) {
        printf("%d is a prime number\n",number);
    } else
    {
        printf("%d is not a prime
number\n",number);
    }

    return 0;
}

//Q-12
void printFactors(int number)
```

```
{
    printf("Factors of %d",number);
    for (int i=1;i<=number;i++)
        {
        if (number%i==0)
        {
            printf("%d",i);
        }
        }
}

int main() {
    int num;
    printf("Enter an integer: ");
    scanf("%d",&num);
    printFactors(num);
```

```
    return 0;
}

//Q-13
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);
    return 0;
}

//Q-14
int main()
{
    int arr[10];
    int i;
```

```
printf("Please enter 10 integers\n");

for (i=0;i<10;i++)
{
   printf("Enter element %d", i + 1);
   scanf("%d",&arr[i]);
}

printf("\nThe array you entered is\n");

for (i=0;i<10;i++)
{
   printf("%d",arr[i]);
}
return 0;
```

```
}

//Q-15
int main()
{
    int arr[10];
    int i;
    int evenCount=0;

    printf("Please enter 10 integers\n");

    for (i=0;i<10;i++)
    {
        printf("Enter element %d",i+1);
        scanf("%d",&arr[i]);
```

```
        if (arr[i]%2==0)
        {
            evenCount++;
        }
    }

    printf("\nThe array you entered is\n");

    for (i=0;i<10;i++)
    {
        printf("%d",arr[i]);
    }
printf("\n\nThe count of even numbers in the
array is %d\n",evenCount);

    return 0;
```

```
}

//Section B
//Q-1
int main()
{
    int numbers[10];
    int
positiveCount=0,negativeCount=0,zeroCount=0;

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

```
    printf("Number of negative numbers
%d\n",negativeCount);
    printf("Number of zeros %d\n",zeroCount);

    return 0;
}

//Q-2
int main()
{
    int marks[10];
    int i,sum=0,max=0,min=100;
    float average;

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

```
    for (i=0;i<10;i++)
    {
        printf("Enter the marks of student
%d",i+1);
        scanf("%d",&marks[i]);

        sum+=marks[i];

        if (marks[i]>max)
        {
            max=marks[i];
        }

        if (marks[i]<min)
        {
            min=marks[i];
```

```
        }
    }

    average=(float)sum/10;

    printf("\nMaximum marks %d\n",max);
    printf("Minimum marks %d\n",min);
    printf("Average marks %.2f\n",average);
    return 0;
}

//Q-3
int main()
{
    float price[10];
    int count=0;
```

```
    float sum=0;


    printf("Please enter the prices of 10
items\n");
    for (int i=0;i<10;i++)
    {
        printf("Item %d",i+1);
        scanf("%f",&price[i]);
        sum+=price[i];


        if (price[i]>200)
        {
            count++;
        }
    }
```

```
    float average=sum/10;
    printf("\nAverage price of an item
%.2f\n",average);


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


    return 0;
}


//Q-4
int main()
{
    int employeeNo,count=0;
    float basicSalary;
```

```
    printf("Enter the employee number and basic
salary (enter -999 to stop)\n");


    while(1)
    {
        printf("Employee No");
        scanf("%d",&employeeNo);

        if(employeeNo==-999)
        {
            break;
        }

        printf("Basic Salary");
        scanf("%f",&basicSalary);
```

```
        if(basicSalary>=5000)
        {
            count++;
        }
    }

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

    return 0;
}

//Q-5
int main()
{
    int employeeNumber,hoursWorked;
```

```
    int
overtimePayment,overtimeExceeding4000=0;
    int
totalEmployees=0,employeesWithOvertime=0;

    const int normalOvertimeRate=150;
    const int excessOvertimeRate=200;

    printf("Enter employee number (-999 to
end)");
    scanf("%d",&employeeNumber);

    while (employeeNumber!=-999)
    {
        printf("Enter hours worked by employee
%d",employeeNumber);
        scanf("%d",&hoursWorked);
```

```
        totalEmployees++;

        if (hoursWorked>40)
        {
            employeesWithOvertime++;

            int overtimeHours=hoursWorked-40;

overtimePayment=(normalOvertimeRate*(40-
overtimeHours))+(excessOvertimeRate*overtim
eHours);

            if (overtimePayment>4000)
            {
                overtimeExceeding4000++;
            }
```

```
        }
        else
        {
            overtimePayment = 0;
        }

        printf("Employee Number %d\n",
employeeNumber);
        printf("Overtime Payment %d\n",
overtimePayment);

        printf("\nEnter employee number (-999 to
end)");
        scanf("%d",&employeeNumber);
    }
```

```
    float
percentageExceeding4000=(float)overtimeExce
eding4000/employeesWithOvertime*100;


    printf("\nPercentage of employees with
overtime payment exceeding Rs.4000
%.2f%%\n",percentageExceeding4000);


    return 0;
}
```

LAB 06

```
#include <stdio.h>
#include <stdlib.h>
//Q-1
int main()
```

```
{
    int arr[10], i, sum = 0;
    float avg;

    // input values to the array
    for (i = 0; i < 10; i++) {
        printf("Enter value for index %d: ", i);
        scanf("%d", &arr[i]);
    }

    //Minimum value
    int min_val = arr[0];
    for (i = 1; i < 10; i++) {
        if (arr[i] < min_val) {
            min_val = arr[i];
        }
```

```
    }
    printf("Minimum value in the array: %d\n",
min_val);

    //Maximum value
    int max_val = arr[0];
    for (i = 1; i < 10; i++) {
        if (arr[i] > max_val) {
            max_val = arr[i];
        }
    }
    printf("Maximum value in the array: %d\n",
max_val);

    //Average value
    for (i = 0; i < 10; i++) {
        sum += arr[i];
```

```
    }
    avg = (float)sum / 10;
    printf("Average value of the array: %.2f\n",
avg);

    //Reverse the order of values
    printf("Reverse order of values in the array:
");
    for (i = 9; i >= 0; i--) {
        printf("%d ", arr[i]);
    }

    return 0;
}

//Q-2
int main() {
```

```
int size, i;

//Size of arrays
printf("Enter size of arrays: ");
scanf("%d", &size);

//Declare two arrays with size given
int arr1[size], arr2[size], arr3[size];

//Input values to the first array
printf("Enter values for first array:\n");
for (i = 0; i < size; i++) {
    printf("Enter value for index %d: ", i);
    scanf("%d", &arr1[i]);
}
```

```
    //Input values to the second array
    printf("Enter values for second array:\n");
    for (i = 0; i < size; i++) {
        printf("Enter value for index %d: ", i);
        scanf("%d", &arr2[i]);
    }

    //Scalar sum
    int scalar_sum = 0;
    for (i = 0; i < size; i++) {
        scalar_sum += arr1[i] + arr2[i];
    }
    printf("Scalar sum of arrays: %d\n",
scalar_sum);

    //Vector sum and store in third array
```

```
    printf("Vector sum of arrays: ");
    for (i = 0; i < size; i++) {
        arr3[i] = arr1[i] + arr2[i];
        printf("%d ", arr3[i]);
    }

    return 0;
}
```

LAB 07

```
#include <stdio.h>
#include <stdlib.h>
int main()
{
```

```
    int matrix1[3][3], matrix2[3][3],
matrix_sum[3][3];
    int i, j;

    //Input values to the first matrix
    printf("Enter values for first matrix:\n");
    for (i = 0; i < 3; i++) {
        for (j = 0; j < 3; j++) {
            printf("Enter value for row %d, column
%d: ", i+1, j+1);
            scanf("%d", &matrix1[i][j]);
        }
    }

    //Input values to the second matrix
    printf("Enter values for second matrix:\n");
    for (i = 0; i < 3; i++) {
```

```
        for (j = 0; j < 3; j++) {
            printf("Enter value for row %d, column
%d: ", i+1, j+1);
            scanf("%d", &matrix2[i][j]);
        }
    }

    //Find matrix sum and store in third matrix
    for (i = 0; i < 3; i++) {
        for (j = 0; j < 3; j++) {
            matrix_sum[i][j] = matrix1[i][j] +
matrix2[i][j];
        }
    }

    //Display matrix sum
    printf("Matrix sum:\n");
```

```
    for (i = 0; i < 3; i++) {
        for (j = 0; j < 3; j++) {
            printf("%d ", matrix_sum[i][j]);
        }
        printf("\n");
    }

    return 0;
}
```