MANUAL TESTING

1)Matrix Multiplication and perform Testing

```
#include<stdio.h>
int main()
{
  int a[10][10],b[10][10],r[10][10],r1,c1,r2,c2,i,j,k;
  printf("Enter order of first matrix:");
  scanf("%d%d",&r1,&c1);
  printf("Enter order of second matrix:");
  scanf("%d%d",&r2,&c2);
  printf("\n Enter elements into matrice A:");
  for(i=0;i<r1;i++)
  {
     for(j=0;j<c1;j++)
     {
       scanf("%d",&a[i][j]);
     }
  }
  printf("\n Enter elements into matrice B:");
  for(i=0;i<r2;i++)
  {
     for(j=0;j<c2;j++)
     {
       scanf("%d",&b[i][j]);
     }
  }
  for(i=0;i<r1;i++)
  {
```

```
    for(j=0;j<c2;j++)
    {
     r[i][j]=0;
     for(k=0;k<r2;k++)
     {
      r[i][j]=r[i][j]+a[i][k]*b[k][j];
     }
    }
  }
  printf("\n Result:");

  for(i=0;i<r1;i++)
  {
      for(j=0;j<c2;j++)
      {
         printf("%d\t",r[i][j]);

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

OutPut:

Enter order of first matrix:

```
3 3
Enter order of second matrix:
3 3
Enter elements into matrice A:
1 1 1
1 1 1
1 1 1
Enter elements into matrice B:
1 1 1
1 1 1
1 1 1
Result:
3 3 3
3 3 3
3 3 3
```

2)Report various bug by studying any system(Atm)

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

long bal = 1000, amt;

void main()
{
   int ch;

   clrscr();

   while (1)
   {
      printf("******* Welcome to SBI ATM********\n");
      printf("1: Check balance\n 2: Cash withdraw \n 3: Cash deposit\n 4: Quit\n");
      printf("Enter your choice: ");
      scanf("%d", &ch);

      switch (ch)
      {
      case 1:
         printf("Your current balance: %ld\n", bal);
         break;
      case 2:
         printf("\nEnter the amount to withdraw: ");
         scanf("%ld", &amt);
         if (amt % 100 != 0)
```

```
        {
            printf("\nPlease enter the amount multiple of 100!");
        }
        else if (amt > bal - 100)
        {
            printf("\nInsufficient balance");
        }
        else
        {
            bal = bal - amt;
            printf("\nPlease collect cash");
            printf("\nYour current balance is %ld", bal);
        }
        break;
    case 3:
        printf("\nEnter deposit amount: ");
        scanf("%ld", &amt);
        bal = bal + amt;
        printf("\nCash deposited successfully");
        printf("\nYour current balance is %ld", bal);
        break;
    case 4:
        printf("\nThank you for visiting SBI ATM\nVisit Again!!");
        exit(0);
    default:
        printf("Please enter a valid choice");
    }
  }
}
```

3) Banking Application

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

void creation();
void deposit();
void withdrawal();
void info();

char bname[100], branch[100], acname[100], address[100];
long acnumber, bal = 100, with, dep;

int main()
{
   int ch;
   clrscr();

   while (1)
   {
      printf("\n ***** Banking System ******");
      printf("\n 1. Create new Account \n 2. Cash Deposit \n 3. Cash Withdraw \n 4. Account
Info \n 5. Quit");

      printf("\n Enter your choice: ");
      scanf("%d", &ch);

      switch (ch)
      {
      case 1:
         creation();
```

```
            break;

        case 2:
            deposit();
            break;

        case 3:
            withdrawal();
            break;

        case 4:
            info();
            break;

        case 5:
            exit(0);
        }
    }

    return 0;
}

void creation()
{
    printf("\n\n\t*** Account Creation ***");

    printf("\n Enter Bank name: ");
    scanf("%s", bname);

    printf(" Enter Branch name: ");
```

```
    scanf("%s", branch);

    printf(" Enter Account holder name: ");
    scanf("%s", acname);

    printf(" Enter Account holder address: ");
    scanf("%s", address);

    printf(" Enter account number: ");
    scanf("%ld", &acnumber);

    printf("\n Account created successfully!!!\n");
    printf(" Bank Name: %s\n Branch Name: %s\n Account holder name: %s\n Account holder address: %s\n Account number: %ld\n", bname, branch, acname, address, acnumber);
}

void deposit()
{
    long dep;

    printf("\n Available balance: %ld", bal);
    printf("\n Enter depositing amount: ");
    scanf("%ld", &dep);

    bal = bal+dep;

    printf("\n Deposited Successfully");
    printf("\n New Balance: %ld\n", bal);
}

void withdrawal()
```

```
{
   long with;

   printf("\n Available balance: %ld", bal);
   printf("\n Enter withdrawal amount: ");
   scanf("%ld", &with);

   if (with > bal)
   {
      printf("\n Insufficient balance. Withdrawal failed.\n");
   }
   else
   {
      bal =bal-with;
      printf("\n Withdrawal successful");
      printf("\n New Balance: %ld\n", bal);
   }
}

void info()
{
   printf("\n Bank Name: %s\n Branch Name: %s\n Account holder name: %s\n Account holder address: %s\n Account number: %ld\n Balance: %ld\n", bname, branch, acname, address, acnumber, bal);
}
```

5)Loop Constructs

Do While

```
#include<stdio.h>
int main()
{
   int i=1;
   do
   {
      printf("%d\n",i);
      i++;
   }while(i<=10);
   return 0;
}
```

While

```
#include <stdio.h>
int main()
{
   int i = 1; // initialize a counter variable
   while (i <= 5) // check the condition
   {
      printf("%d\n", i); // print the value of i
      i++; // increment the counter
   }
   return 0;
}
```

If-Else

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

```
{
   int num;
   printf("Enter a number: ");
   scanf("%d", &num);
   // check if the number is positive, negative or zero
   if (num > 0)
   {
      printf("The number is positive.\n");
   }
   else if (num < 0)
   {
      printf("The number is negative.\n");
   }
   else
   {
      printf("The number is zero.\n");
   }
   return 0;
}
```

Switch

```
#include <stdio.h>
int main()
{
   int choice;
   printf("Enter a number between 1 and 4: ");
   scanf("%d", &choice);
   switch(choice)
   {
```

```
        case 1:
            printf("You chose one.\n");
            break;
        case 2:
            printf("You chose two.\n");
            break;
        case 3:
            printf("You chose three.\n");
            break;
        case 4:
            printf("You chose four.\n");
            break;
        default:
            printf("Invalid choice.\n");
            break;
    }
    return 0;
}
```

For loop

```
#include <stdio.h>
int main()
{
    int i, n, sum = 0;
    printf("Enter a positive integer: ");
    scanf("%d", &n);
    // for loop to calculate the sum of first n natural numbers
    for (i = 1; i <= n; i++)
    {
```

```
        sum += i;
    }
    printf("Sum = %d\n", sum);
    return 0;
}
```