1. Print table from 1 to 10 using nested while

```c
#include<stdio.H>
int main()
{
    int i=1,j;
    while(i<=10)
    {
        printf("table of %d \n",i);
        j=1;
        while(j<=10)
        {
            printf("%d x %d = %d  ",i,j,i*j);
            j++;
        }
        i++;
        printf("\n");
    }
}
```

Output

table of 1
1 x 1 = 1 1 x 2 = 2 1 x 3 = 3 1 x 4 = 4 1 x 5 = 5 1 x 6 = 6 1 x 7 = 7 1 x 8 = 8 1 x 9 = 9 1 x 10 = 10
table of 2
2 x 1 = 2 2 x 2 = 4 2 x 3 = 6 2 x 4 = 8 2 x 5 = 10 2 x 6 = 12 2 x 7 = 14 2 x 8 = 16 2 x 9 = 18 2 x 10 = 20
table of 3
3 x 1 = 3 3 x 2 = 6 3 x 3 = 9 3 x 4 = 12 3 x 5 = 15 3 x 6 = 18 3 x 7 = 21 3 x 8 = 24 3 x 9 = 27 3 x 10 = 30
table of 4
4 x 1 = 4 4 x 2 = 8 4 x 3 = 12 4 x 4 = 16 4 x 5 = 20 4 x 6 = 24 4 x 7 = 28 4 x 8 = 32 4 x 9 = 36 4 x 10 = 40
table of 5
5 x 1 = 5 5 x 2 = 10 5 x 3 = 15 5 x 4 = 20 5 x 5 = 25 5 x 6 = 30 5 x 7 = 35 5 x 8 = 40 5 x 9 = 45 5 x 10 = 50
table of 6
6 x 1 = 6 6 x 2 = 12 6 x 3 = 18 6 x 4 = 24 6 x 5 = 30 6 x 6 = 36 6 x 7 = 42 6 x 8 = 48 6 x 9 = 54 6 x 10 = 60
table of 7
7 x 1 = 7 7 x 2 = 14 7 x 3 = 21 7 x 4 = 28 7 x 5 = 35 7 x 6 = 42 7 x 7 = 49 7 x 8 = 56 7 x 9 = 63 7 x 10 = 70
table of 8
8 x 1 = 8 8 x 2 = 16 8 x 3 = 24 8 x 4 = 32 8 x 5 = 40 8 x 6 = 48 8 x 7 = 56 8 x 8 = 64 8 x 9 = 72 8 x 10 = 80
table of 9
9 x 1 = 9 9 x 2 = 18 9 x 3 = 27 9 x 4 = 36 9 x 5 = 45 9 x 6 = 54 9 x 7 = 63 9 x 8 = 72 9 x 9 = 81 9 x 10 = 90
table of 10
10 x 1 = 10 10 x 2 = 20 10 x 3 = 30 10 x 4 = 40 10 x 5 = 50 10 x 6 = 60 10 x 7 = 70 10 x 8 = 80 10 x 9 = 90 10 x 10 = 100

2. print pattern

```
*
* *
* * *
* * * *
```

```c
#include<stdio.H>
int main()
{
    int i=1,j=1;
    while(i<=4)
    {
        j=1;
        while(j<=i)
        {
            printf("* ");
            j++;
        }
        i++;
        printf("\n");
    }
}
```

3. sum of n natural numbers

```c
#include<stdio.H>
int main()
{
   int n,sum=0;
   printf("enter a number \n");
   scanf("%d",&n);
   for(int i=1;i<=n;i++)
   {
        sum=sum+i;
   }
   printf("sum of numbers= %d",sum);
}
```

Output
enter a number
10
sum of numbers= 55

4. reverse a number

```c
#include<stdio.H>
int main()
{
   int n,rev=0,rem;
   printf("enter a number \n");
   scanf("%d",&n);
   for(int i=1;n!=0;i++)
   {
        rem=n%10;
        n=n/10;
        rev=rev*10+rem;
   }
   printf("reverse of number= %d",rev);
}
```

Output
enter a number
123
reverse of number= 321

---

5. Guessing game challenge.

```c
#include <stdio.h>
#include <stdlib.h>
#include <time.h>
int main()
{
    srand(time(0));
    int i=0,num,random = rand() % 21;
    printf("this is a guessing game \n");
    printf("guess the number in 5 tries \n");
    do
    {
        i++;
        printf("enter a number \n");
        scanf("%d",&num);
        if(num==random)
        {
            printf("congratulations!");
```

```
            exit(0);
        }
        else if(num>random)
            printf("wrong...my guess is less than that. You have %d more
   tries\n",5-i);
        else
            printf("wrong...my guess is greater than that. You have %d
   more tries \n",5-i);
    } while (i<5);
    printf("game over...my guess was %d",random);

    return 0;
}
```

Output
this is a guessing game
guess the number in 5 tries
enter a number
10
wrong...my guess is greater than that. You have 4 more tries
enter a number
15
wrong...my guess is greater than that. You have 3 more tries
enter a number
18
wrong...my guess is greater than that. You have 2 more tries
enter a number
19
wrong...my guess is greater than that. You have 1 more tries
enter a number
20
congratulations!

---

6 . Filter even numbers with continue

```
#include <stdio.h>
#include <stdlib.h>
#include <time.h>
int main()
{
    int num,sum=0;
    for (int i=1;i<=20;i++)
    {
        printf("enter a number \n");
        scanf("%d",&num);
```

```
        if(num<0)
        {
            continue;
        }
        else
            if(num%2==0)
            {
                 sum=sum+num;
            }
    }
    printf("sum= %d",sum);
    return 0;
}
```

Output
enter a number
2
enter a number
4
enter a number
6
enter a number
8
enter a number
10
enter a number
-2
enter a number
-4
enter a number
-6
enter a number
-8
enter a number
1
enter a number
3
enter a number
5
enter a number
7
enter a number
9
enter a number
2
enter a number

-2
enter a number
4
enter a number
-4
enter a number
5
enter a number
-5
sum= 36

---

7. Banking System Simulation

```c
#include <stdio.h>
#include <stdlib.h>
int main()
{
char name[10];
int choice, acc_no, acc_no1;
float deposit = 0.0, balance = 0.0, withdraw = 0.0;
printf("Welcome to the banking system \n");

do {
    printf("\n1. Create Account\n2. Deposit Money\n3. Withdraw Money\n4. Check
Balance\n5. Exit\n");
    printf("Enter your choice: ");
    scanf("%d", &choice);

    switch (choice) {
        case 1:
            printf("Enter account holder name: ");
            scanf("%s", name);
            printf("Enter account number: ");
            scanf("%d", &acc_no);
            printf("Account created successfully! Account Number: %d\n", acc_no);
            acc_no = 1001;
            break;

        case 2:
            printf("Enter account number: ");
            scanf("%d", &acc_no);
            printf("Enter amount to deposit: ");
            scanf("%f", &deposit);
            balance = balance + deposit;
```

```
            printf("Deposit successful! New Balance: %.2f\n", balance);
            break;

        case 3:
            printf("Enter account number: ");
            scanf("%d", &acc_no1);
            printf("Enter amount to withdraw: ");
            scanf("%f", &withdraw);
            balance = balance - withdraw;
            printf("Withdraw successful! New Balance: %.2f\n", balance);
            break;

        case 4:
            printf("Enter account number: ");
            scanf("%d", &acc_no1);
            printf("Current balance: %.2f\n", balance);
            break;

        case 5:
            printf("Exiting the system.\n");
            exit(0);

        default:
            printf("Invalid request\n");
     }
    } while (1);

    return 0;
}
```

Output
Welcome to the banking system

1. Create Account
2. Deposit Money
3. Withdraw Money
4. Check Balance
5. Exit
Enter your choice: 1
Enter account holder name: vivek
Enter account number: 1001
Account created successfully! Account Number: 1001

1. Create Account

2. Deposit Money
3. Withdraw Money
4. Check Balance
5. Exit
Enter your choice: 2
Enter account number: 1001
Enter amount to deposit: 1000
Deposit successful! New Balance: 1000.00

1. Create Account
2. Deposit Money
3. Withdraw Money
4. Check Balance
5. Exit
Enter your choice: 3
Enter account number: 1001
Enter amount to withdraw: 500
Withdraw successful! New Balance: 500.00

1. Create Account
2. Deposit Money
3. Withdraw Money
4. Check Balance
5. Exit
Enter your choice: 4
Enter account number: 1001
Current balance: 500.00

1. Create Account
2. Deposit Money
3. Withdraw Money
4. Check Balance
5. Exit
Enter your choice: 5
Exiting the system.

---

8. Weather Data Analysis

```c
#include<stdio.h>
int main()
{
    int count=0;
    float temp[30],highest=0.0,lowest=0.0,total=0.0,average=0.0;
    printf("weather forecast\n");
    printf("enter the temperatures \n");
```

```
    for(int i=0;i<10;i++)
    {
        printf("day %d temperature :  \n",i+1);
        scanf("%f",&temp[i]);
    }
    for(int i=0;i<10;i++)
    {
        if(temp[i]>highest)
        {
            highest=temp[i];
        }
    }
    lowest=temp[0];
    for(int i=0;i<10;i++)
    {
        if(temp[i]<lowest)
        {
            lowest=temp[i];
        }
    }
    for(int i=0;i<10;i++)
    {
        total=total+temp[i];
    }
    average=total/10.0;
    for(int i=0;i<10;i++)
    {
        if(temp[i]>average)
        {
            count++;
        }
    }
    printf("highest temperature: %f \n",highest);
    printf("lowest temperature: %f \n",lowest);
    printf("average temperature: %f \n",average);
    printf("number of days with temperature above average: %f \n",count);

}
```

Output
weather forecast
enter the temperatures
day 1 temperature :
23.5
day 2 temperature :

23
day 3 temperature :
22
day 4 temperature :
24
day 5 temperature :
25
day 6 temperature :
26
day 7 temperature :
22
day 8 temperature :
23
day 9 temperature :
22
day 10 temperature :
22
highest temperature: 26.000000
lowest temperature: 22.000000
average temperature: 23.250000
number of days with temperature above average: 23.250000

---

9. Inventory Management System

```c
#include<stdio.h>
int main()
{
    char name[10];
    float price;
    int choice,quantity;
    printf("Inventory Management System \n 1. Add Product \n 2. Update Product
Quantity \n 3. Delete Product \n 4. View All Products in Inventory \n 5. Exit
\n");
    do
    {
        printf("enter a choice \n");
        scanf("%d",&choice);
        switch(choice)
        {
            case 1:
                printf("enter product name \n");
                gets(name);
                printf("enter product quantity \n");
                scanf("%d",&quantity);
                printf("enter product price \n");
```

```
                scanf("%f",&price);
                break;

            case 2:
                printf("enter product name \n");
                gets(name);
                printf("update product quantity \n");
                scanf("%d",&quantity);
                break;
            case 3:
                printf("enter the product to be deleted \n");
                name[0]='\0';
                price=0;
                quantity=0;
                printf("product is deleted \n");
                break;
            case 4:
                printf("product name= %s quantity= %d
price=%d",name,quantity,price);
                break;
            case 5:
               printf("exiting the system \n");
               exit(0);
        }
    } while(1);

}
```