c programming - Samples

1- until i< or > n

```
#include <stdio.h>

int main() {
	int i=0;
	while(i<34)
	{
		printf("the value of n is %d\n",i);
		i++;
	}
	return 0;
}
```

2.

```
// square and cube of n
#include <stdio.h>

int main() {
	float n,cube,square;
	printf("enter any number :");
	scanf("%f",&n);
	square=n*n;
	cube=n*n*n;
	printf("square= %f\n cube=%f",square,cube);

	return 0;
}
```

3.

```
// arithmetic operators
#include <stdio.h>

int main() {
	float a=4.2,b=2,c;

	c=a+b;
	printf("a+b= %f\n",c);

	c=a-b;
	printf("a-b= %f\n",c);

	c=a*b;
	printf("a*b= %f\n",c);

	c=a/b;
	printf("a/b= %f\n",c);


	return 0;
```

---

4. sum of the 3 digit numbers

```
#include<stdio.h>
main()
{
	int n;
	printf("Enter a 3-digit number: ");
	scanf("%d",&n);
	printf("%d",n/100+n/10%10+n%10);
}
```

---

5. To find if the given number is 3 digits or not

```
#include<stdio.h>
int main()
{
	int num;
	printf("Enter a number:");
	scanf("%d",&num);
	if(num==0)
	  printf("INVALID");
	else
	{
	if(num>99 && num<1000)
	{
		printf("%d is a 3 digit number",num);
	}
	else
	{
		printf("%d is not a 3 digit number",num);
	}
	}
	return 0;
}
```

---

6. reverse of a number

```
#include <stdio.h>


int main()
{
	int num,d,rev=0;
	scanf("%d",&num);
	while(num!=0)
	{
		d=num%10;
		rev=rev*10+d;
		num=num/10;

	}
	printf("reversed number = %d",rev);
	return 0;
}
```

---
7. to find if the the year is leap year

```
#include <stdio.h>
int main() {
    int year;
    printf("Enter a year: ");
    scanf("%d", &year);


    if (year % 400 == 0) {
        printf("%d is a leap year.", year);
    }

    else if (year % 100 == 0) {
        printf("%d is not a leap year.", year);
    }

    else if (year % 4 == 0) {
        printf("%d is a leap year.", year);
    }

    else {
        printf("%d is not a leap year.", year);
    }

    return 0;
}
```

---
8. staff user and total users

```
#include <stdio.h>
int main()
{
      int su,tu,stu;
      printf("enter Total user ");
      scanf("%d",&tu);

      if(tu>0)
      {
            printf("enter Staff user ");
            scanf("%d",&stu);
            if(tu!=stu&&tu>stu+stu/3)
            {
            su=tu-(stu+stu/3);
            printf("%d",su);
            }
            else
            printf("Invalid as staff and total users are equal/more");
      }
      else
      printf("Invalid as total users are 0 /less");
}
```

9.reversing array

```
#include<stdio.h>
#include<stdlib.h>
#define n 7
int main(){

int arr[n] = {16,18,27,16,23,21,19};
	int temp;
	for(int i = 0; i<n/2; i++){
		temp = arr[i];
		arr[i] = arr[n-i-1];
		arr[n-i-1] = temp;
	}
	for(int i = 0; i < n; i++){
		printf("%d,", arr[i]);
	}
}
```

---

10. reversing an array

```
#include <stdio.h>


int main() {
	int a[]={16, 18, 27, 16, 23, 21, 19},n,i,temp;
	n=sizeof(a)/sizeof(a[0]);
	printf("array before\n");
	for(i=0;i<n;i++)
	     printf("%d ",a[i]);
	for(i=0;i<n/2;i++)
	   {
		temp=a[i];
		a[i]=a[n-i-1];
		a[n-i-1]=temp;
	   }
	printf("\narray after\n");
	for(i=0;i<n;i++)
	     printf("%d ",a[i]);

	  return 0;

}
```

---

11. addition of matrices

```
#include <stdio.h>
int main() {
   int r1, c1,r2,c2, a[10][10], b[10][10], sum[10][10], i, j;
   printf("Enter the number of rows and column of matrix 1: ");
   scanf("%d%d", &r1,&c1);
   printf("Enter the number of columns (between 1 and 100): ");
   scanf("%d%d", &r2,&c2);
   if(r1!=r2&&c1!=c2)
        printf("Invalid");
```

```
    else
    {

    printf("\nEnter elements of 1st matrix:\n");
    for (i = 0; i < r1; ++i)
        for (j = 0; j < c1; ++j) {
            scanf("%d", &a[i][j]);
        }

    printf("Enter elements of 2nd matrix:\n");
    for (i = 0; i < r2; ++i)
        for (j = 0; j < c2; ++j) {
            scanf("%d", &b[i][j]);
        }

    // adding two matrices
    for (i = 0; i < r1; ++i)
        for (j = 0; j < c1; ++j) {
            sum[i][j] = a[i][j] + b[i][j];
        }

    // printing the result
    printf("\nSum of two matrices: \n");
    for (i = 0; i < r1; ++i){

        for (j = 0; j < c1; ++j)
                printf("%d      ", sum[i][j]);
            printf("\n\n");
            }


    return 0;
}
}
```

---

12. sum of elements of a matrix

```
#include <stdio.h>
int main() {
    int r, c, a[10][10], i, j,sum=0;
    printf("Enter the number of rows");
    scanf("%d", &r);
    printf("Enter the number of columns");
    scanf("%d", &c);

    printf("\nEnter elements of 1st matrix:\n");
    for (i = 0; i < r; ++i)
        for (j = 0; j < c; ++j)
            scanf("%d", &a[i][j]);


    // finding sum of elements i matrix
    for (i = 0; i < r; ++i)
        for (j = 0; j < c; ++j) {
            sum = sum + a[i][j];
        }
```

```
    // printing the result
    printf("\nSum of elements in a matrix: \n");
    printf("Sum = %d      ", sum);

    return 0;
}
```

---

13. pythagoran triplets

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

int main() {


int a,b,c = 0,m=2,limit;
    scanf("%d",&limit);
        while (c < limit) {
            for (int n = 1; n < m; ++n) {
                    a = m * m - n * n;
                b = 2 * m * n;
                c = m * m + n * n;

                if (c > limit)
                    break;

                printf("%d %d %d\n", a, b, c);
            }
            m++;
        }
        return 0;
}
```

sample input : A= 12, output = (3,4,5)(8 6 10)

---

14. function to add and subtract

```
#include<stdio.h>
int main()
{
        int add(int, int);
        int a,b,ch;
        printf("enter values");
        scanf("%d%d",&a,&b);
        printf("enter choice    ");
        scanf("%d",&ch);
        switch(ch)
        {
            case 1:
                printf("add(a,b)=%d",add(a,b));
                break;
```

```
      }

}
int add(int a, int b)
 {
    return(a+b) ;
 }
```

---

15. function to add , subtract,multiply,divide

```
#include<stdio.h>
#include<conio.h>
int main()
{
      int num1, num2, res;
      printf("Enter any two number: ");
      scanf("%d%d", &num1, &num2);
      res = num1+num2;
      printf("\nAddition = %d", res);
      res = num1-num2;
      printf("\nSubtraction = %d", res);
      res = num1*num2;
      printf("\nMultiplication = %d", res);
      res = num1/num2;
      printf("\nDivision = %d", res);
      getch();
      return 0;
}
```

---

16 number pyramid based on number of rows input

```
#include<stdio.h>
int main() {
    int rows, i, j, number = 1;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 1; i <= rows; i++) {
        for (j = 1; j <= i; ++j) {
            printf("%d ", number);
            ++number;
        }
        printf("\n");
    }
    return 0;
}
```

---

17 print * pattern

```
#include <stdio.h>
int main() {
    int rows, i, j, number = 1;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 1; i <= rows; i++) {
        for (j = 1; j <= i; ++j) {
```

```
            printf("*");

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

---

18. printing repeated numbers pattern(put space after"%d" to give space between the elements)

```
#include <stdio.h>
int main() {
    int rows, i, j, number = 1;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 1; i <= rows; i++) {
        for (j = 1; j <= i; ++j) {
            printf("%d",j);

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

---

19. inverted * pattern according to input row count

```
#include <stdio.h>
int main() {
    int rows, i, j, number = 1;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = rows; i >= 1; i--) {
        for (j = 1; j <= i; ++j) {
            printf("*");

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

20.inverted number pattern

```
#include <stdio.h>
int main() {
    int rows, i, j, number = 1;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = rows; i >= 1; i--) {
        for (j = 1; j <= i; ++j) {
            printf("%d",j);
```

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

---

21. full pyramid of numbers

```
#include <stdio.h>
int main() {
    int i, space, rows, k = 0, count = 0, count1 = 0;
    printf("Enter the number of rows: ");
    scanf("%d", &rows);
    for (i = 1; i <= rows; ++i) {
        for (space = 1; space <= rows - i; ++space) {
            printf("    ");
            ++count;
        }
        while (k != 2 * i - 1) {
            if (count <= rows - 1) {
                printf("%d ", i + k);
                ++count;
            } else {
                ++count1;
                printf("%d ", (i + k - 2 * count1));
            }
            ++k;
        }
        count1 = count = k = 0;
        printf("\n");
    }
    return 0;
}
```

22.taking string input and checking if string is palindrome

```
#include<stdio.h>
#include <string.h>
int main(){
   char str1[20],str2[20];
   printf("Enter string: ");
   gets(str1);
   strcpy(str2,str1);
   if(strcmp(strrev(str1),str2)==0)
      printf("The given String is a Palindrome");
   else
      printf("the given string is not Palindrome");
  return 0;
}
```
