BASICS OF C

HELLO WORLD

```c
#include <stdio.h>

int main() {
    // Write C code here
    printf("Hello world");

    return 0;
}
```

Addition of two numbers

```c
#include <stdio.h>

int main()
{
    int a,b;
    printf ("enter the value of a \n");
    scanf ("%d",&a);
    printf ("enter the value of b \n");
    scanf ("%d",&b);
    printf ("the sum of a and b is %d",a+b);


    return 0;
}
```

Area of rectangle

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

```c
int lenght , breadth ;
printf ("what is the lenght of rectangle\n");
scanf ("%d",&lenght);
printf ("what is the breadth of rectangle\n");
scanf ("%d",&breadth);
printf ("the area of your rectangle is %d",lenght*breadth);
    return 0;
    }
```

Area of the circle

```c
#include <stdio.h>
int main()
{
float radius, area;
printf("Enter the radius of Circle ");
scanf("%f", &radius);
area = 3.14 * radius * radius;
printf("Area of Circle %f", area);
return 0;
}
```

Simple interest

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

   int principal,rate ,years;
   float interst;

   printf ("enter the principal\n");
   scanf("%d",&principal);

   printf ("enter the rate\n ");
   scanf("%d",&rate);
```

```c
    printf("enter the numbers of years \n");
    scanf("%d",&years);

    interst=(principal*rate*years)/100;
    printf("your simple interst is %f",interst);

    return 0;
}
```

Remainder if divisible by 97

```c
#include <stdio.h>

int main() {
 int num;
    printf ("enter the number\n");
    scanf  ("%d",&num);
    printf ("the remainder is %d",num%97 );
    return 0;
}
```

odd even

```c
#include <stdio.h>

int main() {
int a ,b ;
printf("enter a number\n");
scanf ("%d",&a);
if(a%2==0){
    printf ("this number is even\n");
}
else {
    printf("the number is odd");
}
return 0;
```

```
}
```

Subjects percentage calculator

```c
#include <stdio.h>
int main()
{
    int physics ,chemistry , maths, total ;

    printf ("enter marks in maths\n");
    scanf ("%d",&maths);

    printf ("enter marks in physics\n");
    scanf ("%d",&physics);

    printf ("enter marks in chemistry\n");
    scanf ("%d",&chemistry);
    total= (physics+maths+chemistry)/3;
    if ((total<40)|| physics<33 || maths <33|| chemistry <33){
        printf ("your total percentage is %d and you are fail\n",total);
        }
        else{
         printf ("your total percentage is %d and you are pass\n",total);
        }
    return 0;
}
```

Income tax

```c
#include <stdio.h>
int main()
{
 int tax=0, income ;
 printf ("enter your income \n");
```

```c
 scanf ("%d",&income );
 if (income>=250000 && income<=500000)
{
    tax =tax +0.05*(income-250000);
}
 if (income>=500000 && income<=1000000){
     tax =tax +0.20*(income-500000);
 }
 if (income>=1000000){
     tax =tax +0.30*(income-1000000);
 }
 printf ("your income tax to be paid is %d\n",tax);

    return 0;
}
```

Largest in three numbers

```c
#include <stdio.h>

int main()
{
    int A, B, C;

    printf("Enter the numbers A, B and C: ");
    scanf("%d %d %d", &A, &B, &C);

    if (A >= B && A >= C)
        printf("%d is the largest number.", A);

    if (B >= A && B >= C)
        printf("%d is the largest number.", B);

    if (C >= A && C >= B)
        printf("%d is the largest number.", C);

    return 0;
}
```

n natural numbers in reverse order

```c
#include <stdio.h>

int main()
{
    int n;
    printf ("the value of n is\n ");
    scanf("%d",&n);
    for(int i=n;i;i--){
        printf ("the numbers are %d\n",i);
    }
    return 0;
}
```

Table of a given number

```c
#include <stdio.h>

int main()
{
    int n;
    printf ("the given number is ");
    scanf ("%d",&n);
    for(int i=n;i;i--){
        printf("10 x %d = %d\n",i,10*i);
    }
    return 0;
}
```

Guess game

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

int main() {
    int number,guess,numberofguesses;
    srand(time(0));
    number =rand()%100 +1 ;//generate random number between 1 to 100
    printf("%d\n",number);
    do {printf ("guess the number between 1 to 100\n");
    scanf ("%d",&guess);
    if (guess>number){
        printf("lower number please\n");
    }
    else if(guess<number) {
        printf("higher number please\n");
    }else{
        printf("you guessed it in %d attempts\n",numberofguesses);
    }
        numberofguesses++;
    }while(guess!=number);
    return 0;
}
```

Input of marks obtained by student using arrays and loops

```c
#include <stdio.h>

int main() {
int marks [5];
for(int i=0;i<5;i++){
    printf ("the marks of student %d is\n",i+1);
    scanf ("%d",&marks[i]);
```

```c
}
for(int i=0;i<5;i++){
    printf ("the marks obtained by student %d is %d\n",i+1 , marks[i]);
}


    return 0;
}
```

Print first n integers

```c
#include <stdio.h>

int main()
{
    int i=0;
    int n;
    printf ("enter the value of n\n");
    scanf ("%d",&n);

do {
    printf("the number is %d\n",i);
    i++;
}while(i<n);

    return 0;
}
```

#.   Function basics

```c
#include <stdio.h>
void display ();//function prototype
int main() {
```

```c
    int a ;
    printf ("initalizing the display function\n");
    display();//function call
    printf("display function finished its work\n");



    return 0;
}
//function definition
void display(){
    printf ("this is display\n");
}
```

#.   Pointers basics

```c
#include <stdio.h>

int main() {
    int i=34;
    int*j= &i;
    printf("the value of i is %d\n",i);
    printf("the value of j is %d\n",*j);
    printf("the address of i is %u\n", &i);
    printf("the address of j is %u\n", j);

    return 0;
}
```

Two numbers swap using pointers

```c
#include<stdio.h>
void swap(int *a ,int *b);
int main(){
```

```c
    int x=69 , y=96;
printf("the value of x and y before swap is %d and %d\n", x ,y);
swap(&x,&y);
printf("the value of x and y after swap is %d and %d\n", x , y);
return 0;
    }
    void swap(int *a , int *b){
        int temp;
        temp=*a;
        *a=*b;
        *b=temp;

    }
```