Pass Individual Array Elements

```
#include <stdio.h>
void display(int age1, int age2) {
  printf("%d\n", age1);
  printf("%d\n", age2);
}
int main() {
  int ageArray[] = {2, 8, 4, 12};

  // pass second and third elements to display()
  display(ageArray[1], ageArray[2]);
  return 0;
}
```

Pass Arrays to Functions

```
// Program to calculate the sum of array elements by passing to a function
#include <stdio.h>
float calculateSum(float num[]);
int main() {
  float result, num[] = {23.4, 55, 22.6, 3, 40.5, 18};
  // num array is passed to calculateSum()
  result = calculateSum(num);
  printf("Result = %.2f", result);
  return 0;
}

float calculateSum(float num[]) {
  float sum = 0.0;
  for (int i = 0; i < 6; ++i) {
          sum += num[i];
  }
  return sum;
}
```

Pass Multidimensional Arrays to a Function

```
#include <stdio.h>
void displayNumbers(int num[2][2]);
int main() {
  int num[2][2];
  printf("Enter 4 numbers:\n");
```

```
  for (int i = 0; i < 2; ++i) {
          for (int j = 0; j < 2; ++j) {
          scanf("%d", &num[i][j]);
          }
  }
  // pass multi-dimensional array to a function
  displayNumbers(num);
  return 0;
}
void displayNumbers(int num[2][2]) {
  printf("Displaying:\n");
  for (int i = 0; i < 2; ++i) {
          for (int j = 0; j < 2; ++j) {
          printf("%d\n", num[i][j]);
          }
  }
}
```

Factorial program in c using loops

```
#include<stdio.h>
int main()
{
 int i,fact=1,number;
 printf("Enter a number: ");
  scanf("%d",&number);
          for(i=1;i<=number;i++){
          fact=fact*i;
  }
  printf("Factorial of %d is: %d",number,fact);
return 0;
}
```

Factorial Program using recursion in C

```
#include<stdio.h>
long factorial(int n)
{
  if (n == 0)
          return 1;
  else
          return(n * factorial(n-1));
```

```
}

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

  fact = factorial(number);
  printf("Factorial of %d is %ld\n", number, fact);
  return 0;
}
```

Fibonacci Series in C without recursion

```
#include<stdio.h>
int main()
{
int n1=0,n2=1,n3,i,number;
printf("Enter the number of elements:");
scanf("%d",&number);
printf("\n%d %d",n1,n2);//printing 0 and 1
for(i=2;i<number;++i)//loop starts from 2 because 0 and 1 are already printed
{
n3=n1+n2;
printf(" %d",n3);
n1=n2;
n2=n3;
}
return 0;
}
```

Fibonacci Series using recursion in C

```
#include<stdio.h>
void printFibonacci(int n){
static int n1=0,n2=1,n3;
if(n>0){
n3 = n1 + n2;
n1 = n2;
n2 = n3;
```

```
        printf("%d ",n3);
        printFibonacci(n-1);
        }
        }
        int main(){
        int n;
        printf("Enter the number of elements: ");
        scanf("%d",&n);
        printf("Fibonacci Series: ");
        printf("%d %d ",0,1);
        printFibonacci(n-2);//n-2 because 2 numbers are already printed
        return 0;
        }
```

Sum of Natural Numbers Using Recursion

```
#include <stdio.h>
int addNumbers(int n);
int main() {
  int num;
  printf("Enter a positive integer: ");
  scanf("%d", &num);
  printf("Sum = %d", addNumbers(num));
  return 0;
}

int addNumbers(int n) {
  if (n != 0)
        return n + addNumbers(n - 1);
  else
        return n;
}
```