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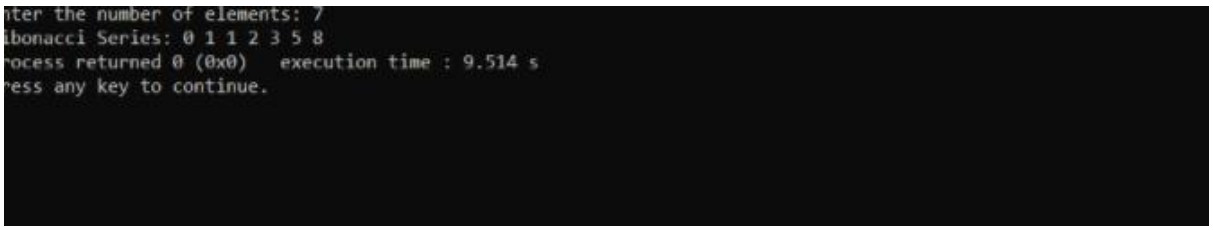
1.fibonacci using recursion

```
#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);
  return 0;
 }
```

Output:



2.Armstrong number

```
#include<stdio.h>
int main()
{
    int n,r,sum=0,temp;
    printf("enter the number:");
    scanf("%d",&n);
    temp=n;
    while(n>0)
```

```
    {
        r=n%10;
        sum=sum+(r*r*r);
        n=n/10;
    }
    if(temp==sum)
        printf("armstrong number");
    else
        printf("not armstrong number");
    return 0;
}
```

Output:

3.GCD of two numbers

```
#include <stdio.h>
int main()
{
    int n1, n2, i, gcd;

    printf("Enter two integers: ");
    scanf("%d %d", &n1, &n2);

    for(i=1; i <= n1 && i <= n2; ++i)
    {
        // Checks if i is factor of both integers
        if(n1%i==0 && n2%i==0)
            gcd = i;
    }

    printf("G.C.D of %d and %d is %d", n1, n2,
gcd);

    return 0;
}
```

Output:

4.Largest number in an array

```
#include <stdio.h>
int main() {
  int n;
  double arr[100];
  printf("Enter the number of elements (1 to 100): ");
  scanf("%d", &n);

  for (int i = 0; i < n; ++i) {
    printf("Enter number%d: ", i + 1);
    scanf("%lf", &arr[i]);
```

```
  }

  // storing the largest number to arr[0]
  for (int i = 1; i < n; ++i) {
    if (arr[0] < arr[i]) {
      arr[0] = arr[i];
    }
  }

  printf("Largest element = %.2lf", arr[0]);

  return 0;
}
```

Output:

5.Factorial of a number using recursion

```
#include<stdio.h>
long int multiplyNumbers(int n);
int main() {
    int n;
    printf("Enter a positive integer: ");
    scanf("%d",&n);
    printf("Factorial of %d = %ld", n,
multiplyNumbers(n));
    return 0;
}

long int multiplyNumbers(int n) {
    if (n>=1)
        return n*multiplyNumbers(n-1);
    else
        return 1;
}
```

Output:

6.To check the given number is prime or not

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

  int n, i, flag = 0;
  printf("Enter a positive integer: ");
  scanf("%d", &n);
  if (n == 0 || n == 1)
    flag = 1;

  for (i = 2; i <= n / 2; ++i) {
    if (n % i == 0) {
      flag = 1;
      break;
```

```
    }
  }

  if (flag == 0)
    printf("%d is a prime number.", n);
  else
    printf("%d is not a prime number.", n);

  return 0;
}
```

Output:

7. Selection sort

```
#include <stdio.h>
 void swap(int *xp, int *yp)
{
    int temp = *xp;
```

```
    *xp = *yp;
    *yp = temp;
}

void selectionSort(int arr[], int n)
{
    int i, j, min_idx;
    for (i = 0; i < n-1; i++)
    {
        min_idx = i;
        for (j = i+1; j < n; j++)
          if (arr[j] < arr[min_idx])
            min_idx = j;
          if(min_idx != i)
            swap(&arr[min_idx], &arr[i]);
    }
}

void printArray(int arr[], int size)
{
```

```
    int i;
    for (i=0; i < size; i++)
        printf("%d ", arr[i]);
    printf("\n");
}

int main()
{
    int arr[] = {64, 25, 12, 22, 45};
    int n = sizeof(arr)/sizeof(arr[0]);
    selectionSort(arr, n);
    printf("Sorted array: \n");
    printArray(arr, n);
    return 0;
}
```

Output: