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DATA STRUCTURES DAY ONE CODES

1. Write a C program to perform Matrix Multiplication

#include<stdio.h>

int main()

{

int a[10][10],b[10][10],mul[10][10],r,c,i,j,k;

printf("enter the number of rows=");

scanf("%d",&r);

printf("enter the number of columns=");

scanf("%d",&c);

printf("enter the first matrix elements=\n");

for(i=0;i<r;i++)

{

for(j=0;j<c;j++)

{

scanf("%d",&a[i][j]);

}

}

printf("enter the second matrix elements=\n");

for(i=0;i<r;i++)

{

for(j=0;j<c;j++)

{

scanf("%d",&b[i][j]);

}

}

printf("multiplication of the matrices=\n");

for(i=0;i<r;i++)

{

for(j=0;j<c;j++)

{

mul[i][j]=0;

for(k=0;k<c;k++)

{

mul[i][j]+=a[i][k]\*b[k][j];

}

}

}

for(i=0;i<r;i++)

{

for(j=0;j<c;j++)

{

printf("%d\t",mul[i][j]);

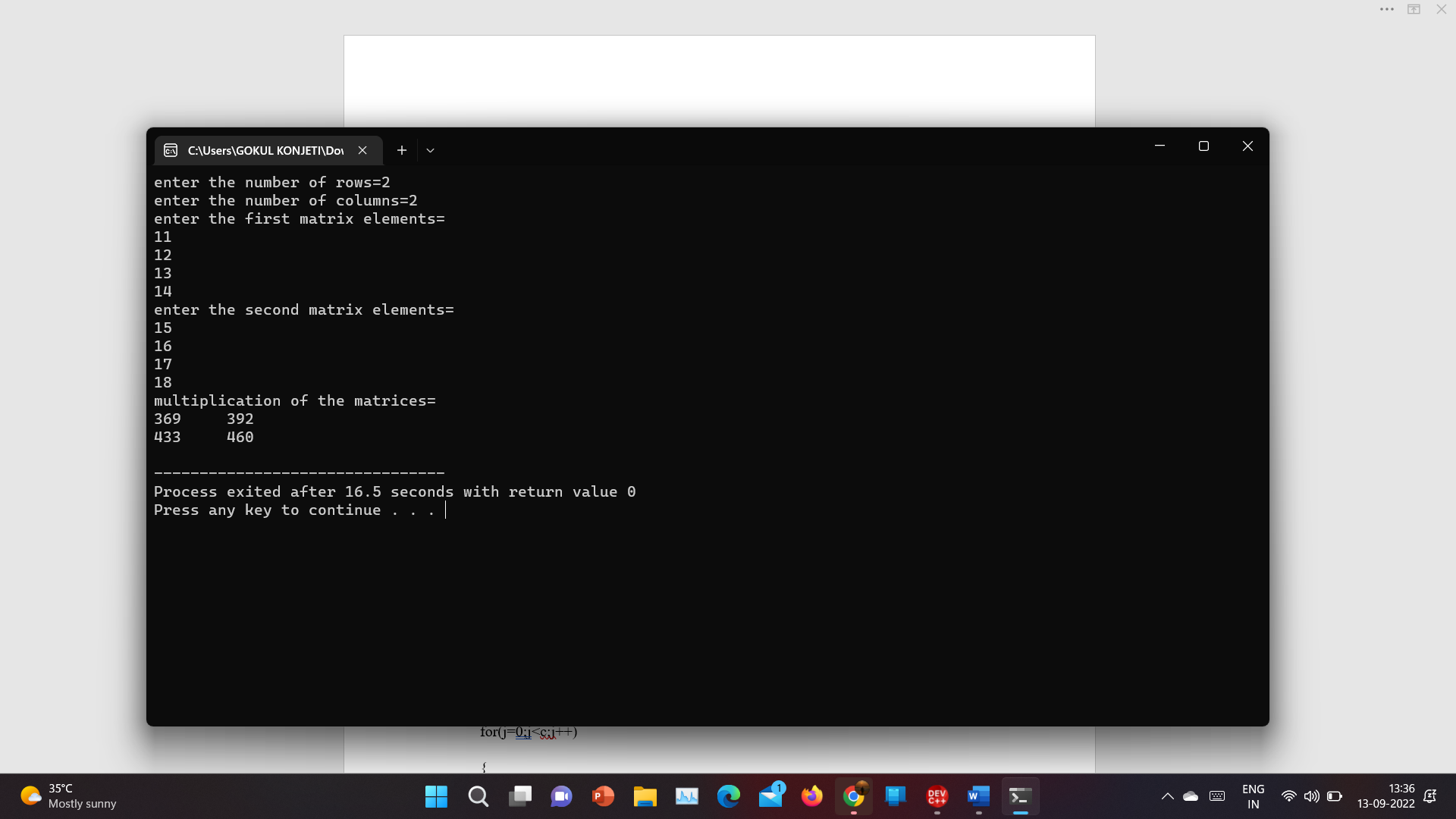
}

printf("\n");

}

return 0;

}



1. Write a C program to find Odd or Even number from a given set of numbers

#include<stdio.h>

int main()

{

int a[100],n,i,odd\_count=0,even\_count=0;

printf("Enter array size:");

scanf("%d",&n);

printf("Enter the elements:");

for(i=0;i<n;i++)

{

scanf("%d",&a[i]);

}

for(i=0;i<n;i++)

{

if(a[i]%2==0)

{

even\_count++;

}

else

{

odd\_count++;

}

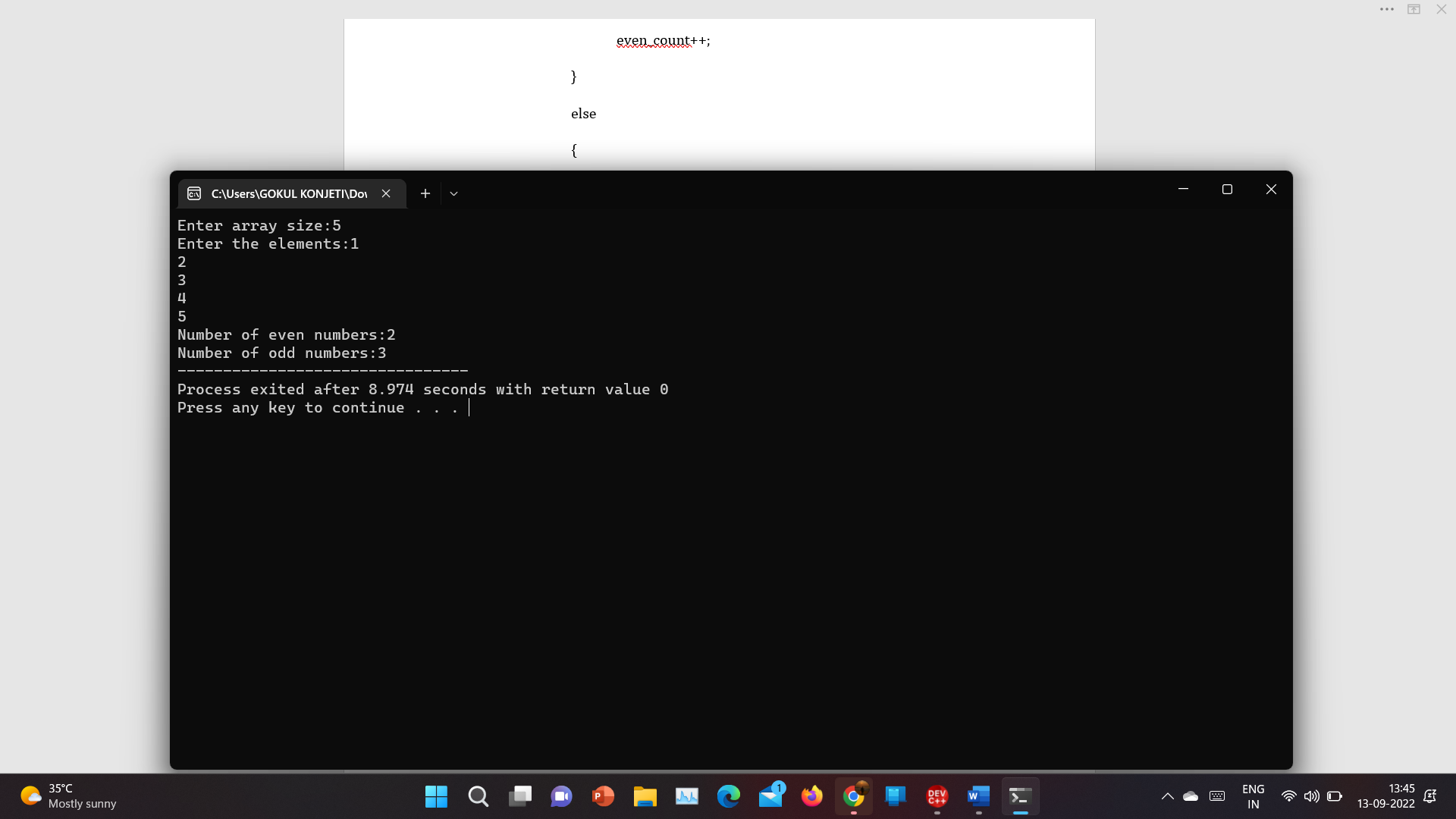
}

printf("Number of even numbers:%d\n",even\_count);

printf("Number of odd numbers:%d",odd\_count);

return 0;

}



1. Write a C program to find Factorial of a given number without using Recursion

#include<stdio.h>

int main()

{

int i,n,fact=1;

printf("Enter the number:");

scanf("%d",&n);

for(i=1;i<=n;i++)

{

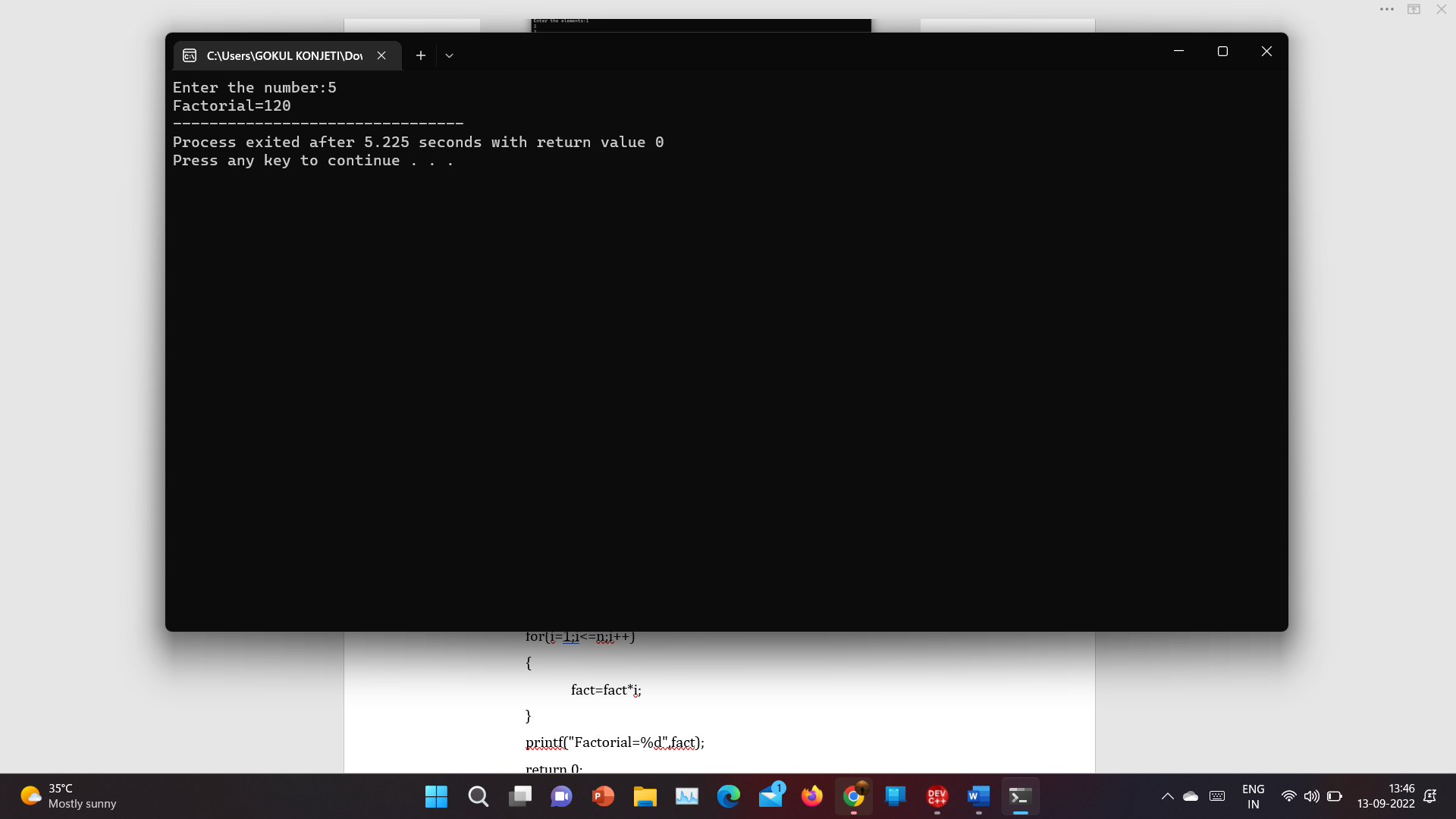
fact=fact\*i;

}

printf("Factorial=%d",fact);

return 0;

}



1. Write a C program to find Fibonacci series without using Recursion

#include<stdio.h>

int main()

{

int first=0, second=1, i, n, sum=0;

printf("Enter the number of terms: ");

scanf("%d",&n);

printf("Fibonacci Series:");

for(i=0 ; i<n ; i++)

{

if(i <= 1)

{

sum=i;

}

else

{

sum=first + second;

first=second;

second=sum;

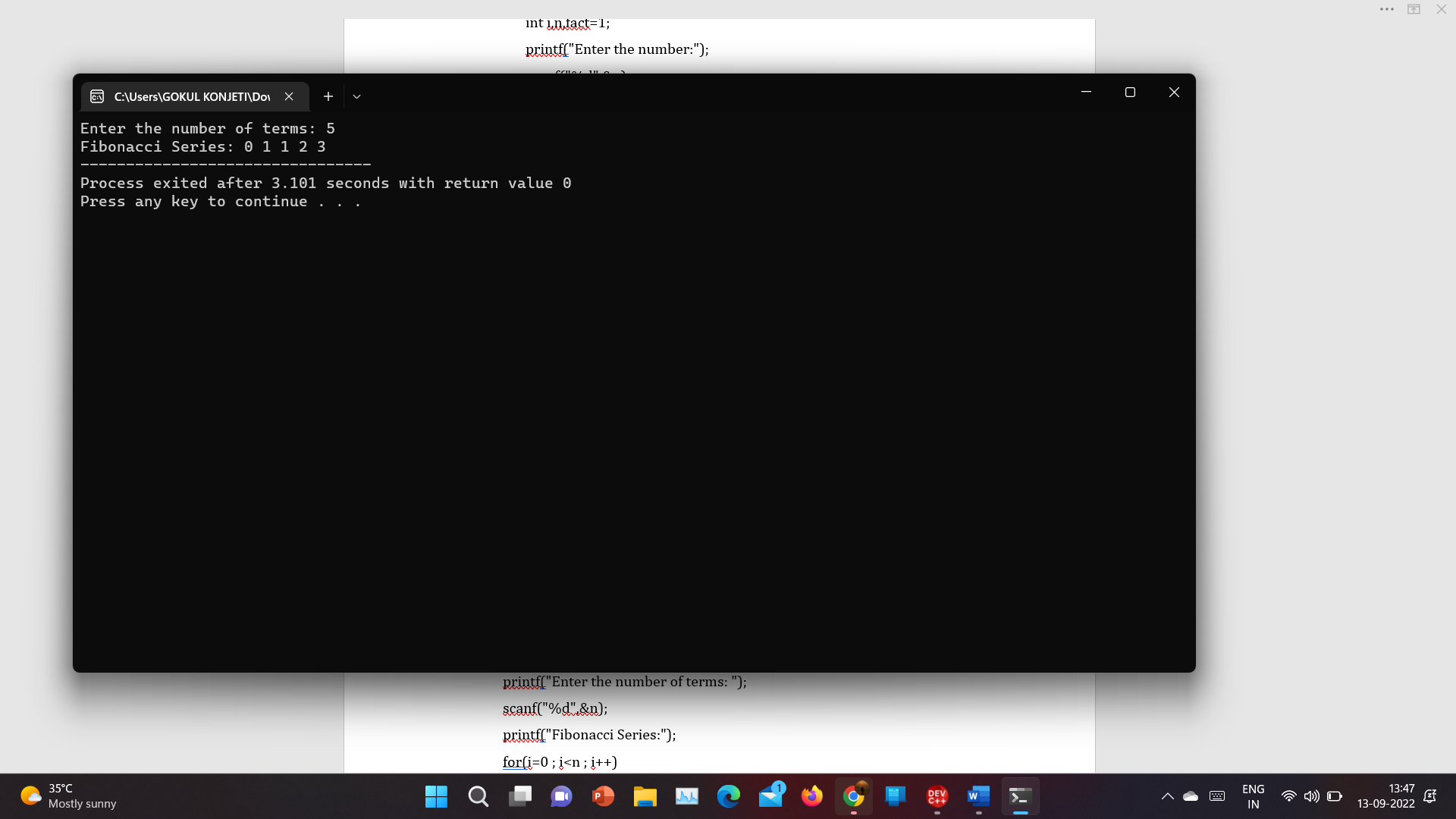
}

printf(" %d",sum);

}

return 0;

}



1. Write a C program to find Factorial of a given 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)

{

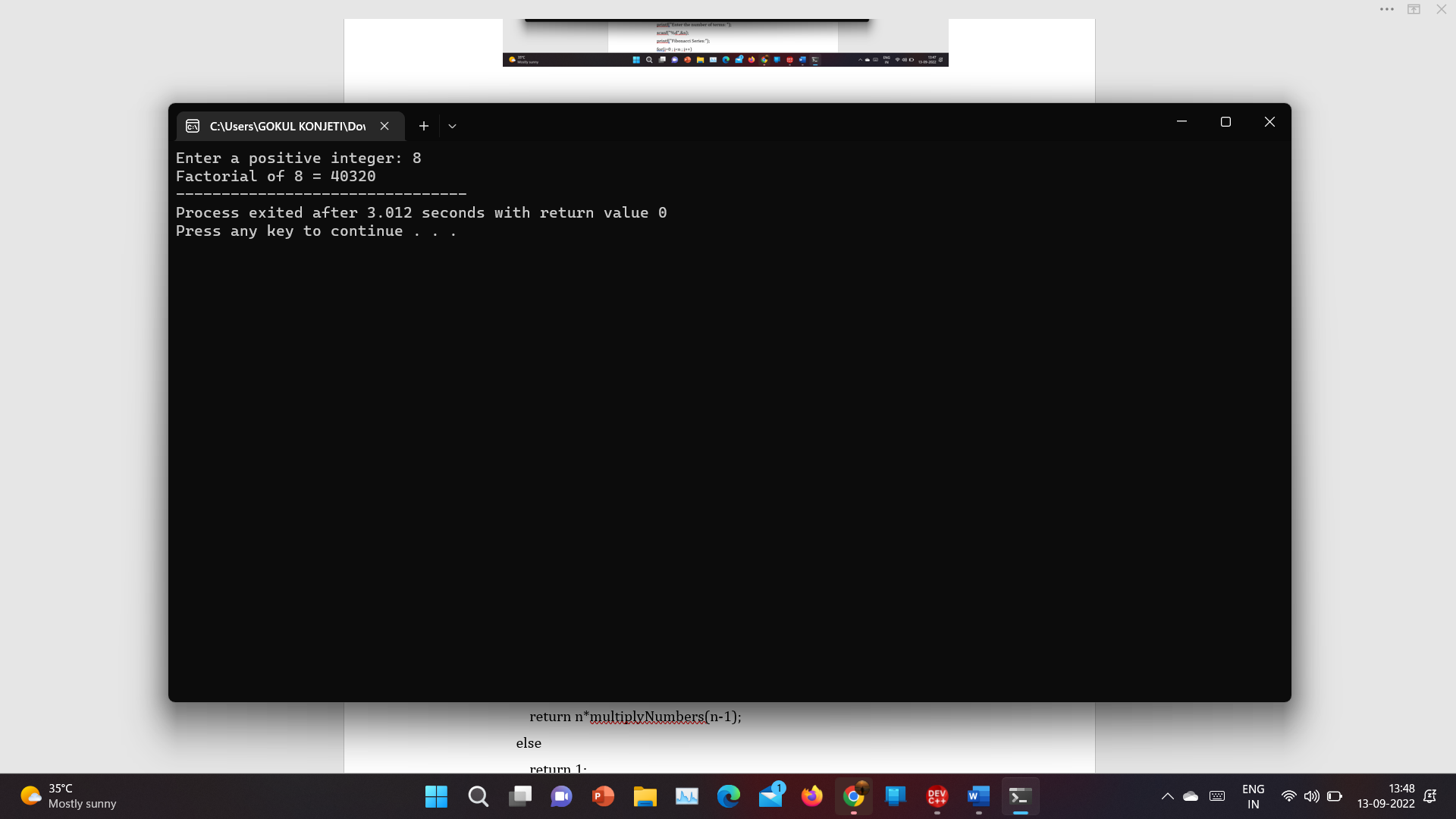
if (n>=1)

return n\*multiplyNumbers(n-1);

else

return 1;

}



1. Write a C program to find Fibonacci series using Recursion

#include<stdio.h>

int fibonacci(int);

int main()

{

int n, i;

printf("Enter the number of element you want in series :\n");

scanf("%d",&n);

printf("fibonacci series is : \n");

for(i=0;i<n;i++)

{

printf("%d ",fibonacci(i));

}

return 0;

}

int fibonacci(int i)

{

if(i==0)

{

return 0;

}

else if(i==1)

{

return 1;

}

else

{

return (fibonacci(i-1)+fibonacci(i-2));

}

}

