Q1.Explain Recursion in java Programming?
Ans:
A function called itself is called a recursion.
A function called is stored in stack data structure
A function may be called infinite times if base condition is not define

Recursion is a programming concept where a function called itself directly or indirectly. The idea is break down a complex problem intp smaller or more manageable sub programs that are similar with original program. This function call continues called itself until a base case condition is met, which stop the recursion

1. Base case : The condition that terminates the recursion to prevent infinite function call
2. Recursive Case: The part of the function where it calls itself to solve a particular smaller problem

Q2. Write a java program to calculate a factorial of given number using loop?

```
class Test{
        int fact(int n){
        int fact=1;
        for(int i=n;i>=1;i--){
        fact=fact*i;
        }
        return fact;

        }

  public static void main(String args[]){
   Test x=new Test();
   System.out.println(x.fact(5));
```

```
 }
 }
```

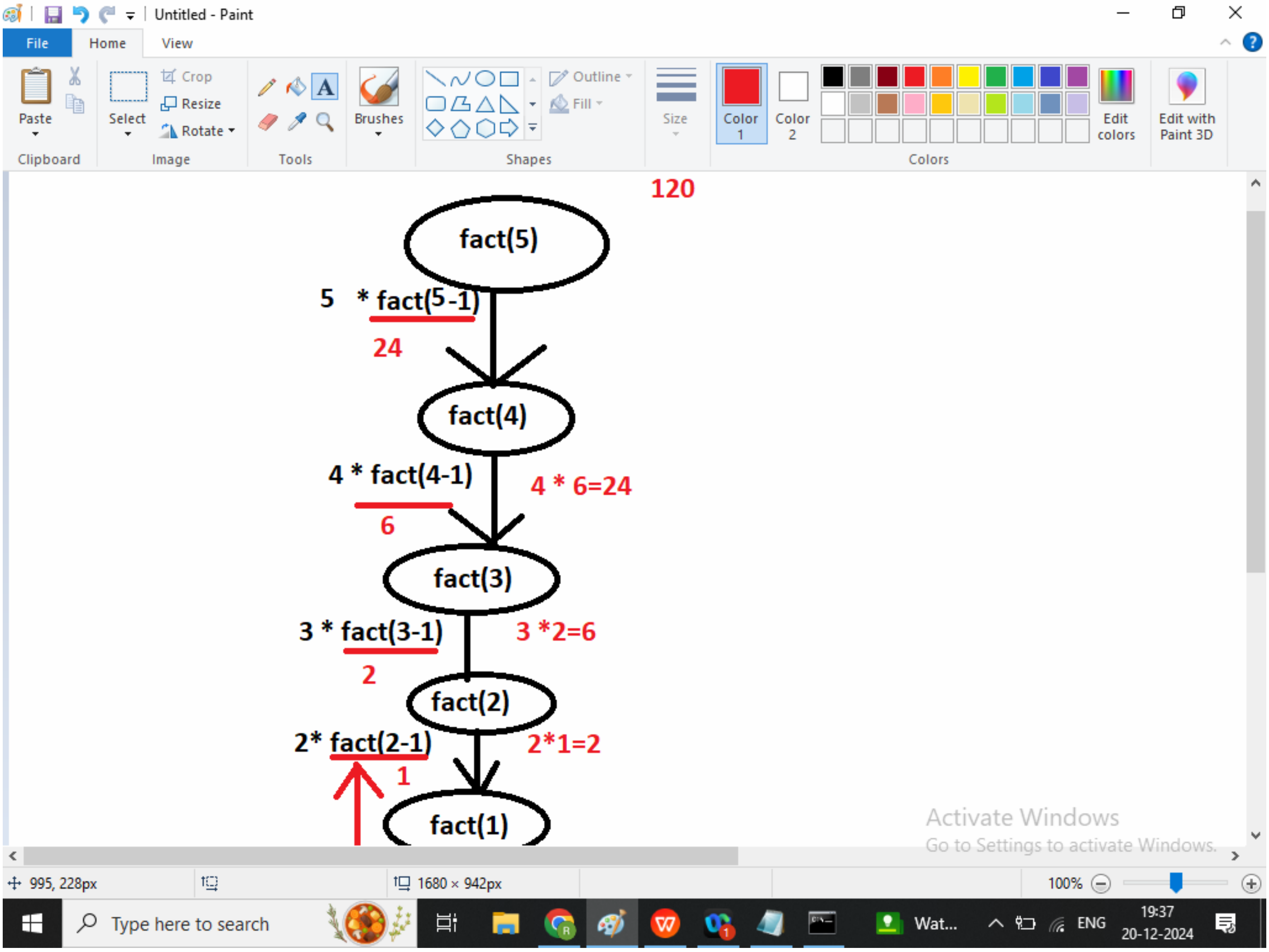
Q2. Write a java program to calculate Factorial of given number using recursion?

```
class Test{
        int fact(int n){//n=1
         if(n==1){//base condition
           return 1;
         }
        else{
        return n*fact(n-1);//recursive case
        }

        }

  public static void main(String args[]){
   Test x=new Test();
   System.out.println(x.fact(5));

 }
 }
```



```
class Test{
            int fact(int n){//n=1
             if(n==1){//base condition
               return 1;
             }
            else{
            return n*fact(n-1);//recursive case
            }

            }

 public static void main(String args[]){
  Test x=new Test();
  System.out.println(x.fact(5));

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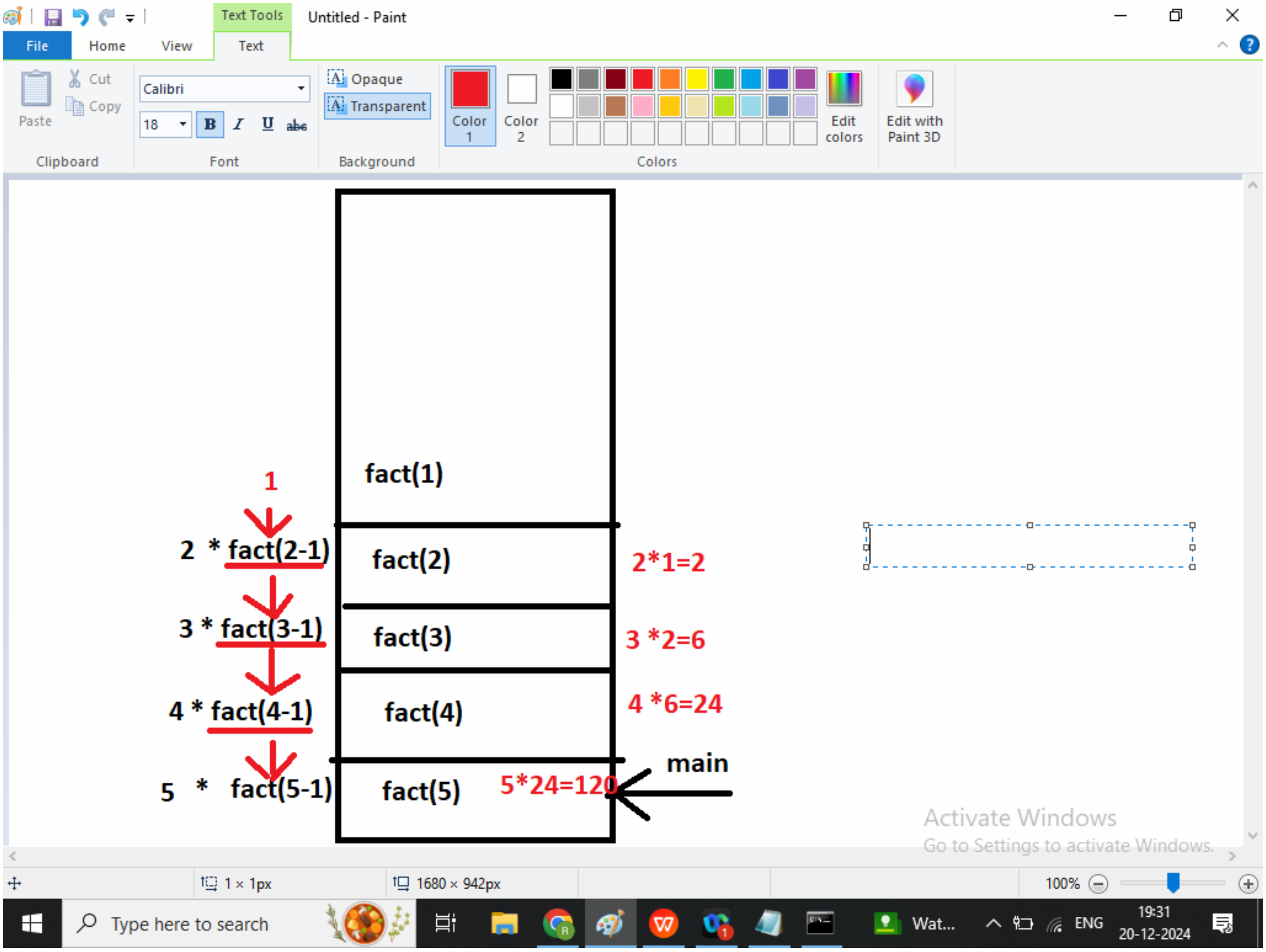

Q2. Write a java Program to print fibonacci series using recursion?

```
class Test{
    static int n1=0,n2=1,n3=0;
    static void printFibo(int count){//count=0

    if(count>0){
    n3=n1+n2;//n3=3
    n1=n2;//n1=2
    n2=n3;//n2=3
    System.out.print("\t"+n3);
```

```
      printFibo(count-1);//
      }

   }
 public static void main(String args[]){

  int term=5;
  System.out.print(0+"   "+1); //0  1  1  2  3
 printFibo(term-2);//3


}
}
```