OOP LAB

Tamojit Das ; Sec: A ; Roll: 7; Grp: C1

Assignment 1

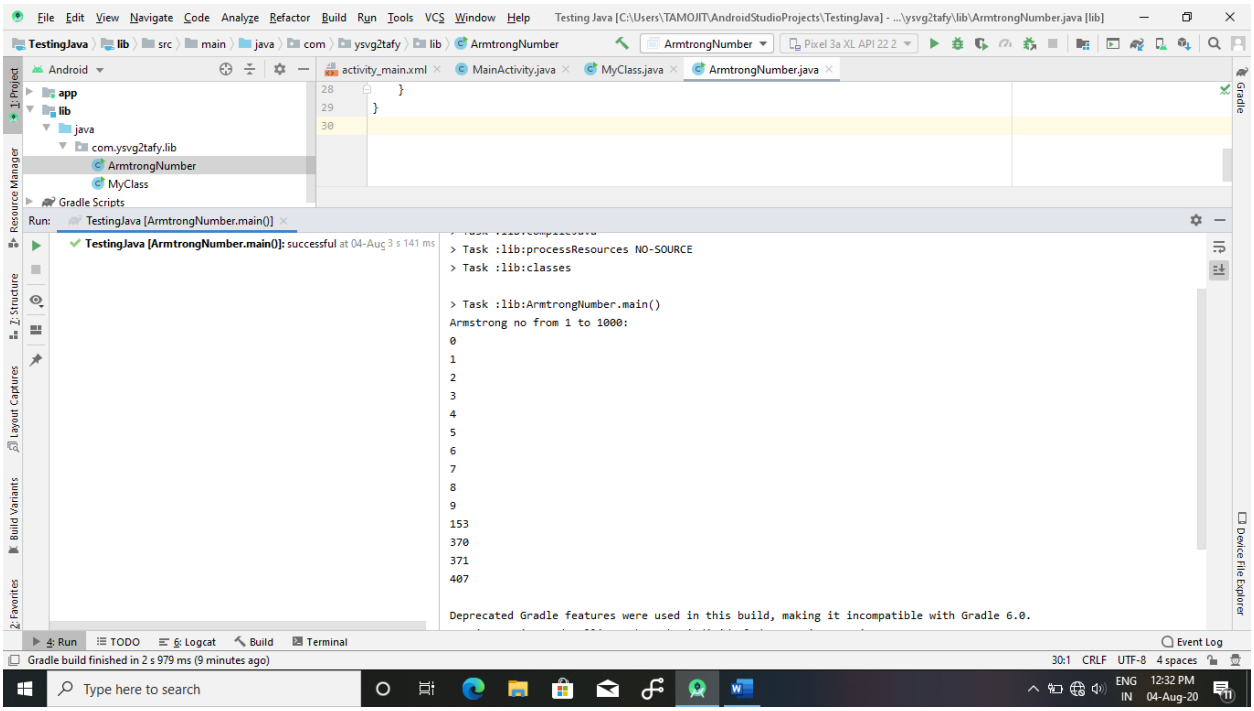
1. Armstrong Number

   Code:

```
public class ArmtrongNumber {

    public static void main(String[] args) {
        System.out.println("Armstrong no from 1 to 1000:");
        for (int i=1;i<=1000;i++){
            if(checkArm(i)){
                System.out.println(i);
            }
        }
    }

    private static boolean checkArm(int i) {
        int length=0;
        int copy=i;
        while(copy>0){
            length++;
            copy=copy/10;
        }
        copy=i;
        int sum=0;
        while (copy>0){
            sum= (int) (sum+Math.pow((copy%10),length));
            copy=copy/10;
        }
        return sum == i;
    }
}
```



2. GP series: 1+x2+x3+...

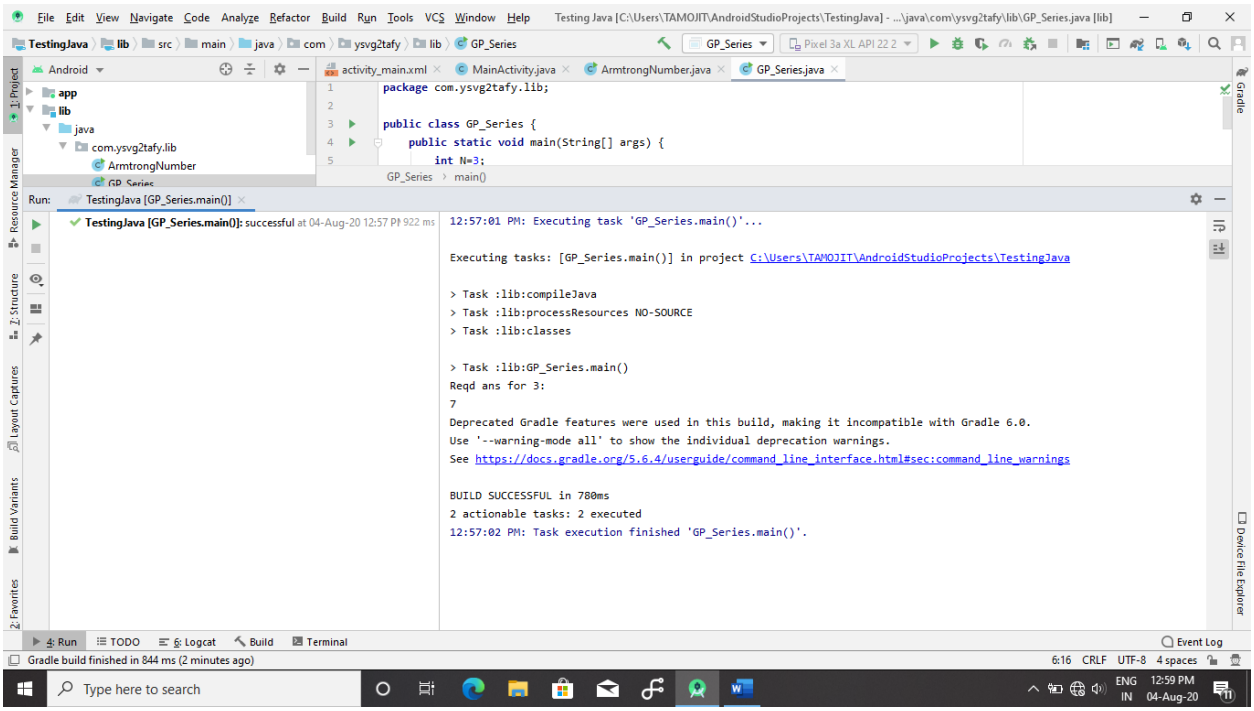
Source Code:

```
public class GP_Series {
    public static void main(String[] args) {
        int N=3;
        int x=2;
        int ans=compute(N,x);
        println("Reqd ans for "+N+":");
        print(ans);
    }

    private static int compute(int N, int x) {
        return (int) ((Math.pow(x,N)-1)/(x-1));
    }

    private static void print(int x) {
        System.out.print(x);
    }

    private static void println(String x) {
        System.out.println(x);
    }
}
```



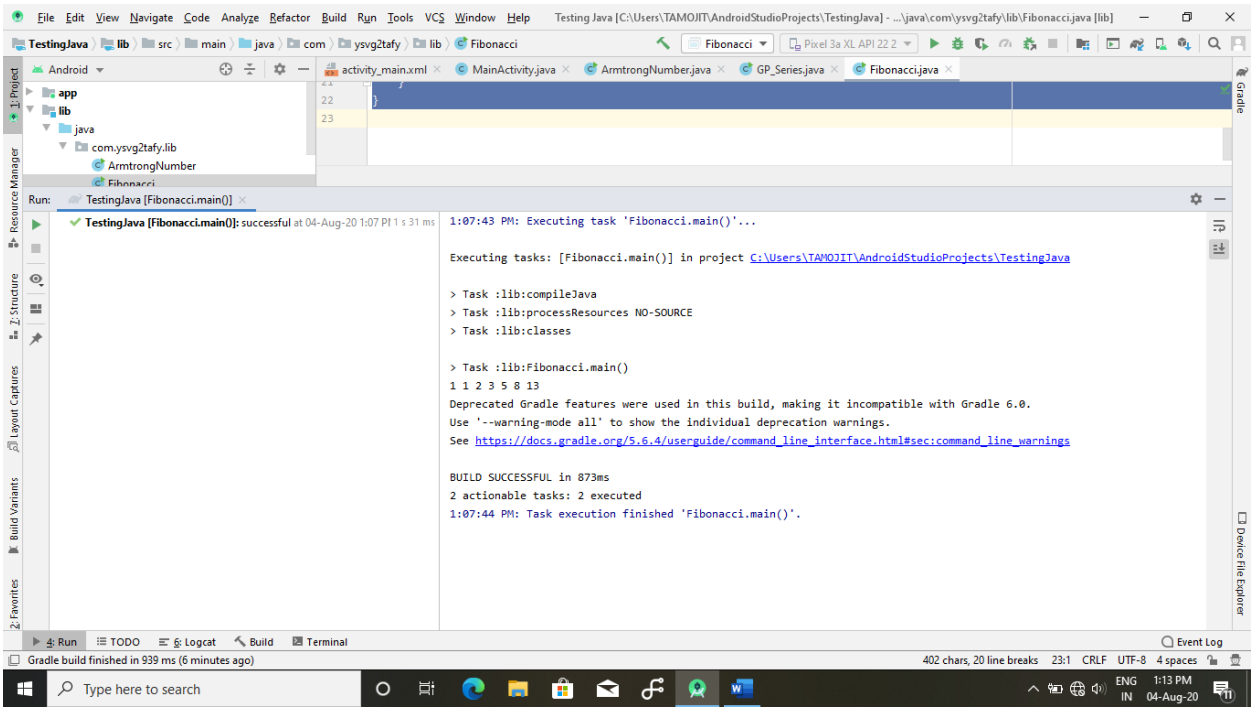
3. Fibinacci

Source Code:

```
public class Fibonacci {
    public static void main(String[] args) {
        int N=7;
        showFibi(N);
    }

    private static void showFibi(int n) {
        for(int i=1;i<=n;i++){
            System.out.print(Fib(i)+" ");
        }
    }

    private static int Fib(int i) {
        if(i==1 || i==2){
            return 1;
        }else{
            return Fib(i-1)+Fib(i-2);
        }
    }
}
```

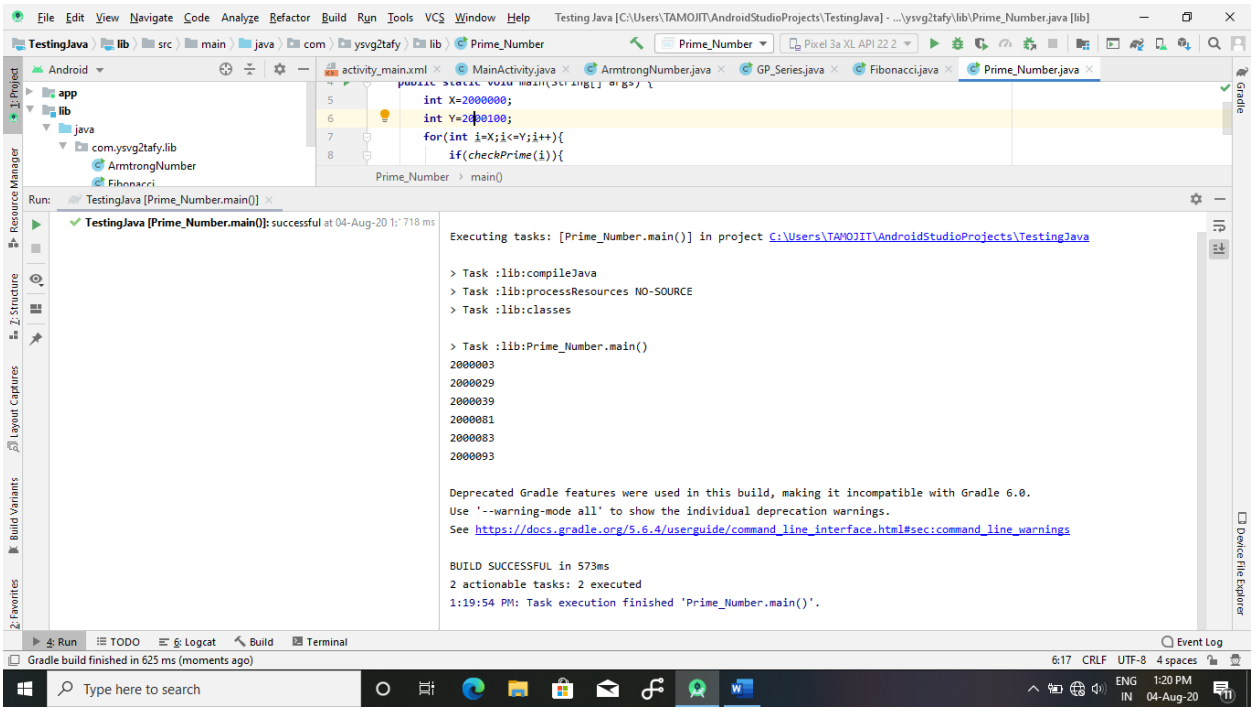


4. Prime Numbers

Source Code:

```
public class Prime_Number {
    public static void main(String[] args) {
        int X=2000000;
        int Y=2000100;
        for(int i=X;i<=Y;i++){
            if(checkPrime(i)){
                System.out.println(i);
            }
        }
    }

    private static boolean checkPrime(int x) {
        for(int i=2;i<(int)Math.pow(x,0.5)+1;i++){
            if(x%i==0){
                return false;
            }
        }
        return true;
    }
}
```

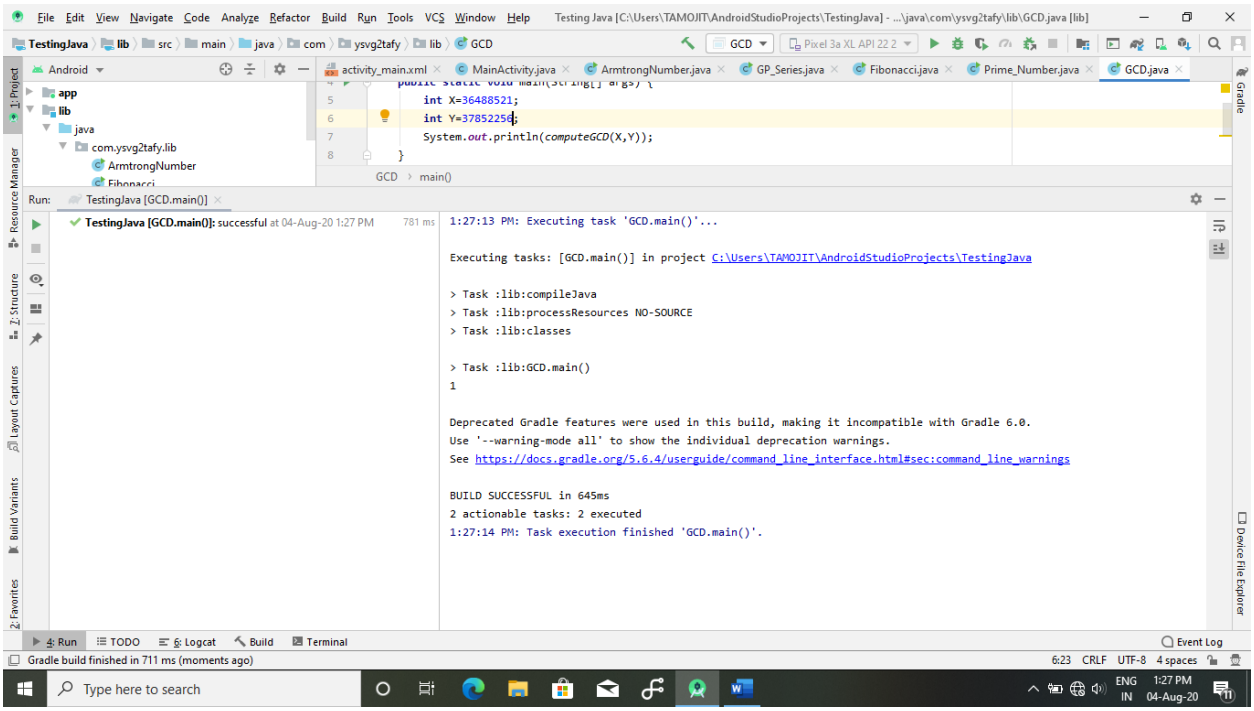


5. Gcd

Source Code

```
public class GCD {
    public static void main(String[] args) {
        int X=36488521;
        int Y=37852256;
        System.out.println(computeGCD(X,Y));
    }

    private static int computeGCD(int x, int y) {
        if(x%y==0){
            return y;
        }else{
            return computeGCD(y,x%y);
        }
    }
}
```


File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
Testing Java [C:\Users\TAMOJIT\AndroidStudioProjects\TestingJava] - ...\java\com\ysvg2tafy\lib\GCD.java [lib]
TestingJava lib src main java com ysvg2tafy lib GCD
GCD
Pixel 3a XL API 22 2
Android
activity_main.xml
MainActivity.java
ArmtrongNumber.java
GP_Series.java
Fibonacci.java
Prime_Number.java
GCD.java
app
lib
java
com.ysvg2tafy.lib
ArmtrongNumber
Fibonacci
int X=36488521;
int Y=37852256;
System.out.println(computeGCD(X,Y));
}
GCD › main()
Run:
TestingJava [GCD.main()]
TestingJava [GCD.main()]: successful at 04-Aug-20 1:27 PM
781 ms
1:27:13 PM: Executing task 'GCD.main()'...
Executing tasks: [GCD.main()] in project C:\Users\TAMOJIT\AndroidStudioProjects\TestingJava
> Task :lib:compileJava
> Task :lib:processResources NO-SOURCE
> Task :lib:classes
> Task :lib:GCD.main()
1
Deprecated Gradle features were used in this build, making it incompatible with Gradle 6.0.
Use '--warning-mode all' to show the individual deprecation warnings.
See https://docs.gradle.org/5.6.4/userguide/command_line_interface.html#sec:command_line_warnings
BUILD SUCCESSFUL in 645ms
2 actionable tasks: 2 executed
1:27:14 PM: Task execution finished 'GCD.main()'.
Run
TODO
Logcat
Build
Terminal
Event Log
Gradle build finished in 711 ms (moments ago)
6:23 CRLF UTF-8 4 spaces
Type here to search
ENG
IN
1:27 PM
04-Aug-20