AST 10106 Group Project Report

Group:

Name	Student ID	CLASS	WORK
LI ZHIHAO	H10002933	LT5	Guess number code · Contact.
CHAN WAI CHUNG	H10003824	LT5	Code, test bug
LO TSZ KIN	H10003648	LT5	CODE , Report, Test Bug

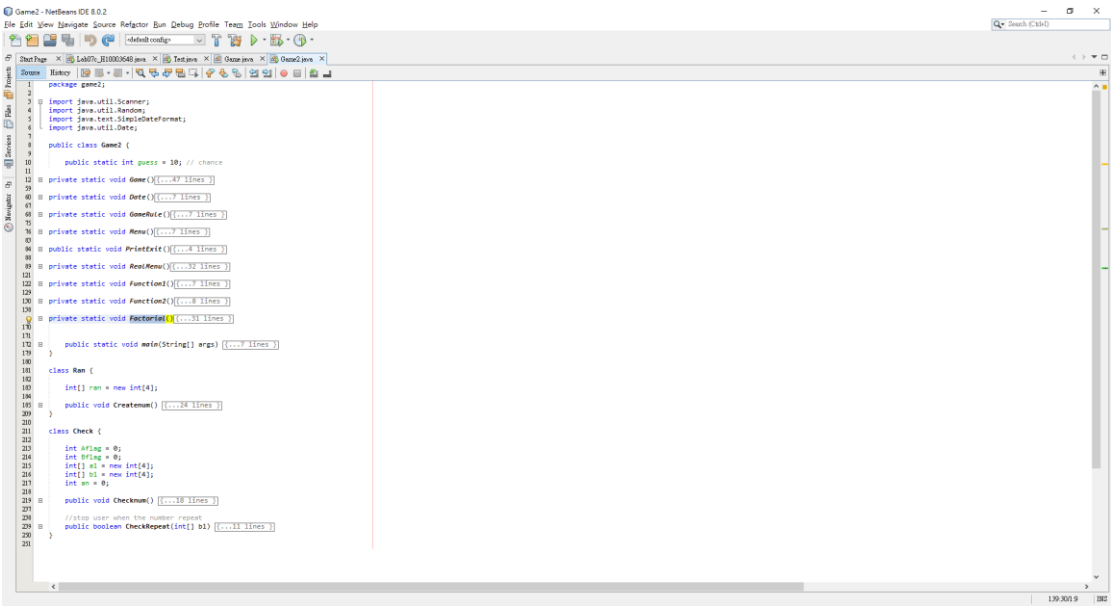
Introduction:

This program is mainly about play games , this is a simple game , it call Bull and Cows or guess number.

The Rule of the game is System will generate 4 digit number between 0 to 9 and store in array , it will not repeat same number , user have to try to guess the number one by one . After user input the 4 digit number one by one , the system will read the

number and the check the digit to find correct or not .Then it will print XAXB , the number in front of A mean the correct number , the number in front of B mean the total of correct number but incorrect place.

There is an example the correct answer is 5234, and the guesser guesses 5346, which is 1A2B. Among them, the position of 5 is correct, which is recorded as 1A, and the two numbers of 3 and 4 are correct, and the position is incorrect, so it is recorded as 2B together it is 1A2B. When it is 4A0B , it mean user guess the correct number . At the same time , we have 10 times chance for user to guess number ,if over , the user will lose.



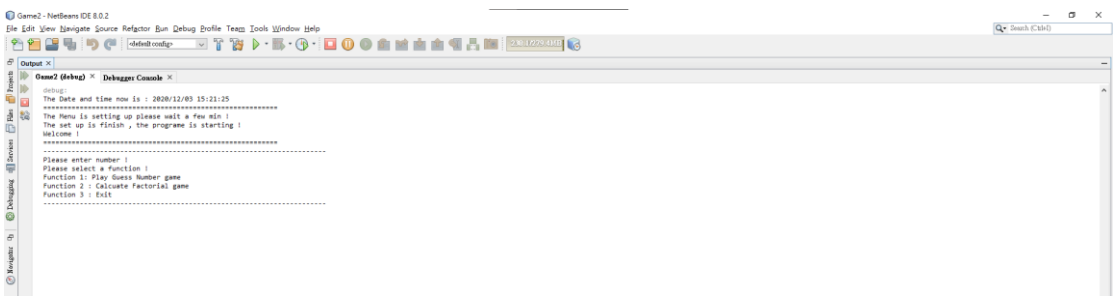
Menu

The start up will show the date and time when the user are start the program .After the date showed , it will load the other void .

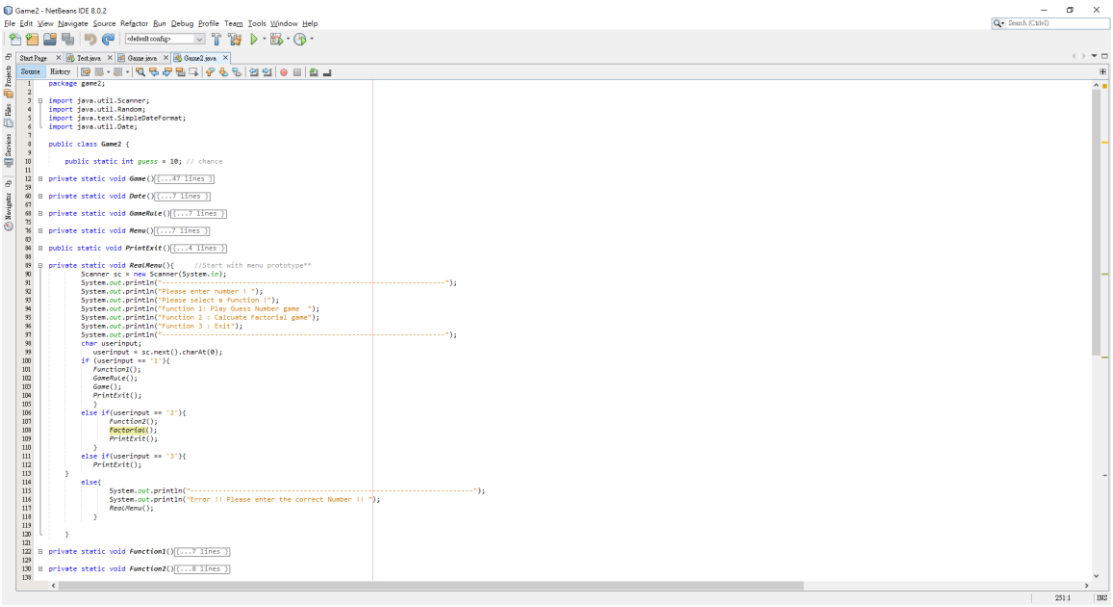
```
171
172     public static void main(String[] args) {
173 Scanner sc = new Scanner(System.in);
174             Date();
175             Menu();
176             RealMenu();
177
178     }
179 }
180
```

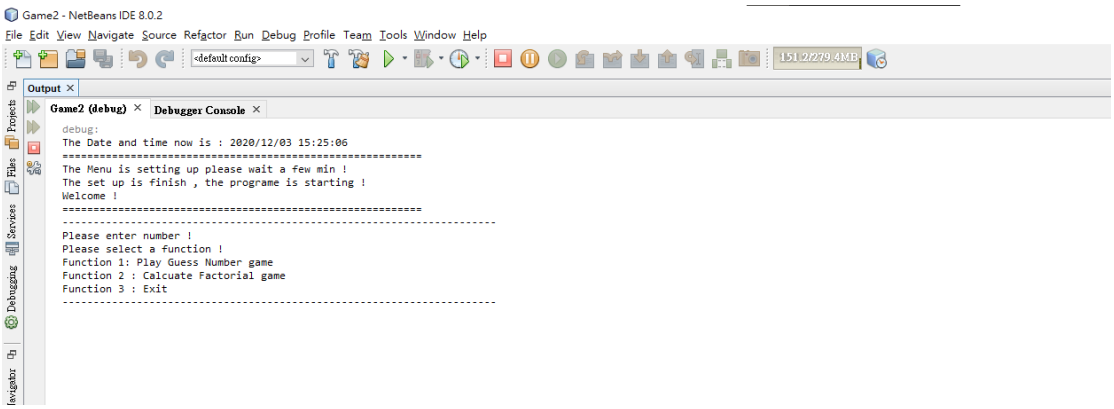
```
59
60  private static void Date(){
61                  Date date = new Date();
62          String DATE_FORMAT = "yyyy/MM/dd HH:mm:ss";
63              SimpleDateFormat sdf = new SimpleDateFormat("yyyy/MM/dd HH:mm:ss");
64                String time = sdf.format(date);
65          System.out.println("The Date and time now is : " + time );
66      }
67
```

```
76  private static void Menu(){
77          System.out.println("============================================================");
78          System.out.println("The Menu is setting up please wait a few min ! ");
79          System.out.println("The set up is finish , the programe is starting ! ");
80          System.out.println("Welcome !");
81          System.out.println("============================================================");
82  }
```

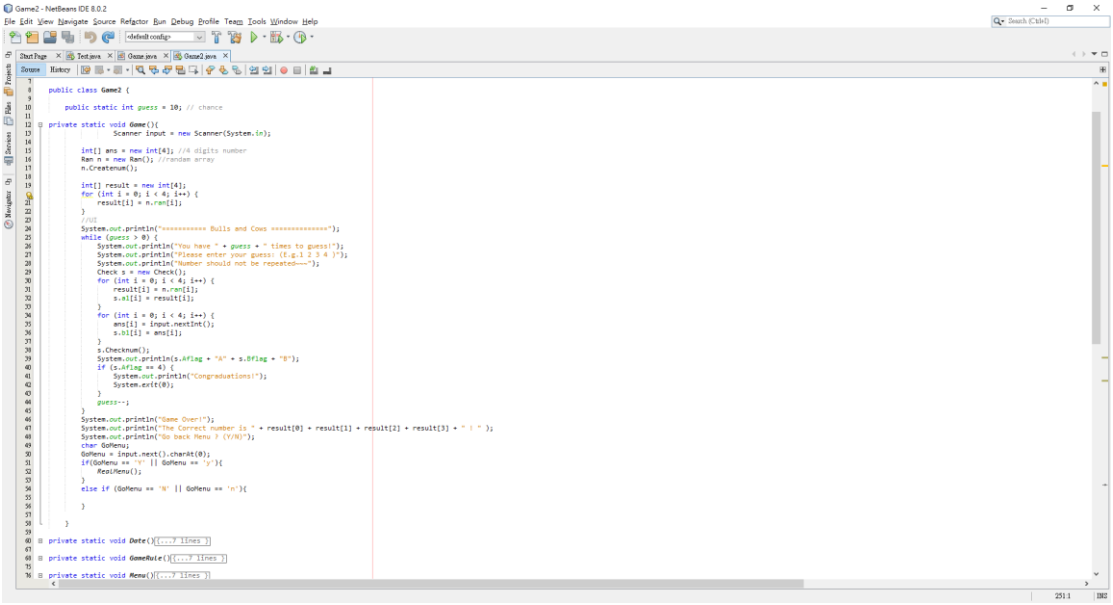


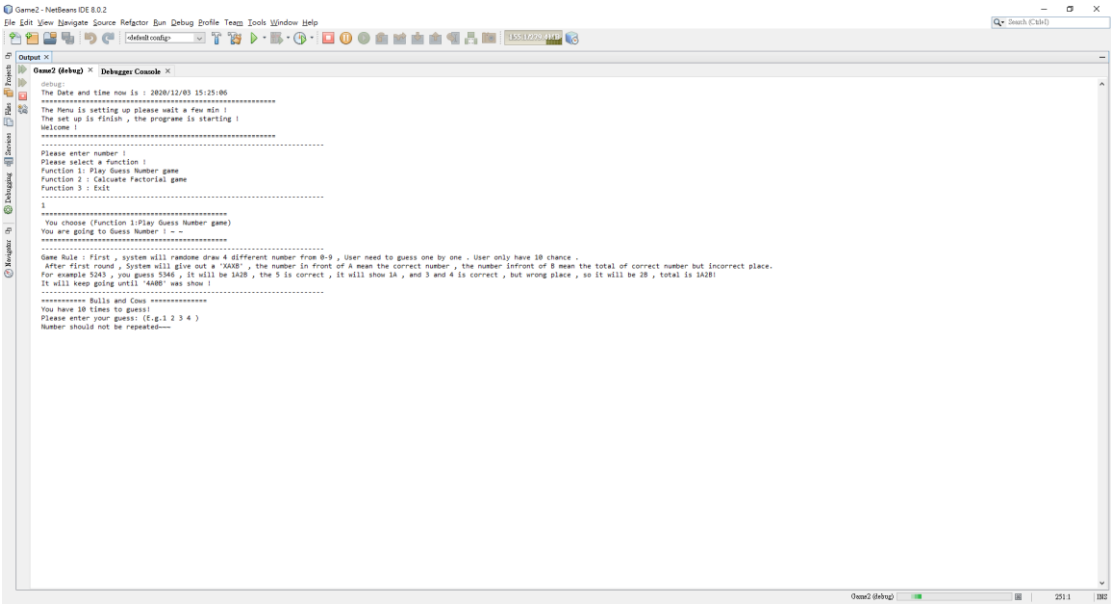
After finish the welcome , we will create a menu to ask user to type the number to get into play game , the first number is play guess number game , the second one is Calculate Factorial game , the last is exit program at the same time , the reason we create two menu is let the menu can keep loop after finish game .



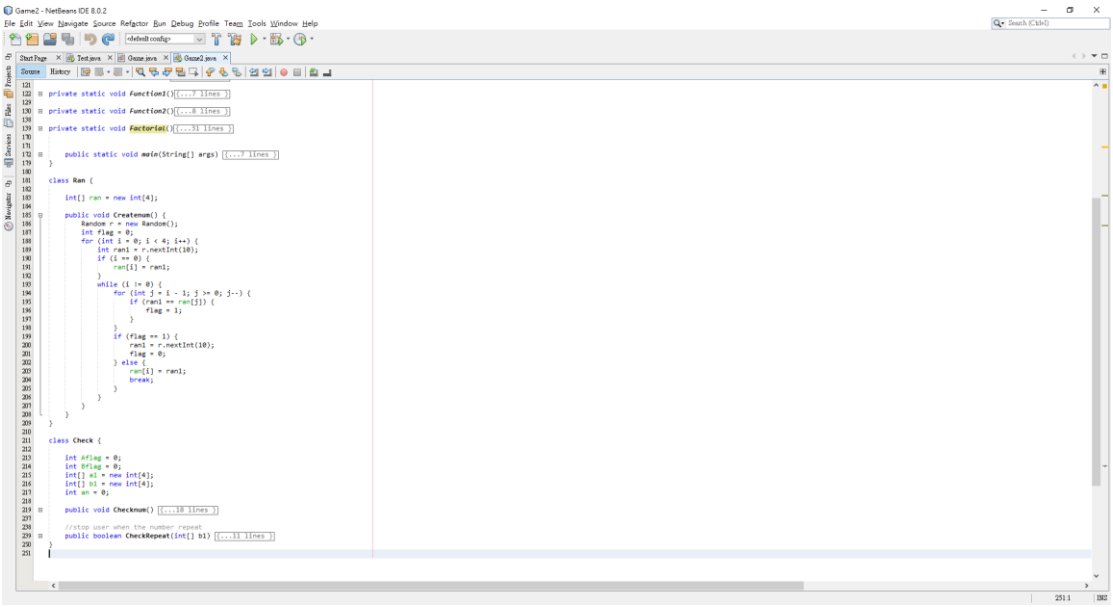


If user input 1 it will show the user input , explain the rule and start to play guess number game.





In the code create an array and go to class “Ran” to create the random number and store into array “ran[]”.

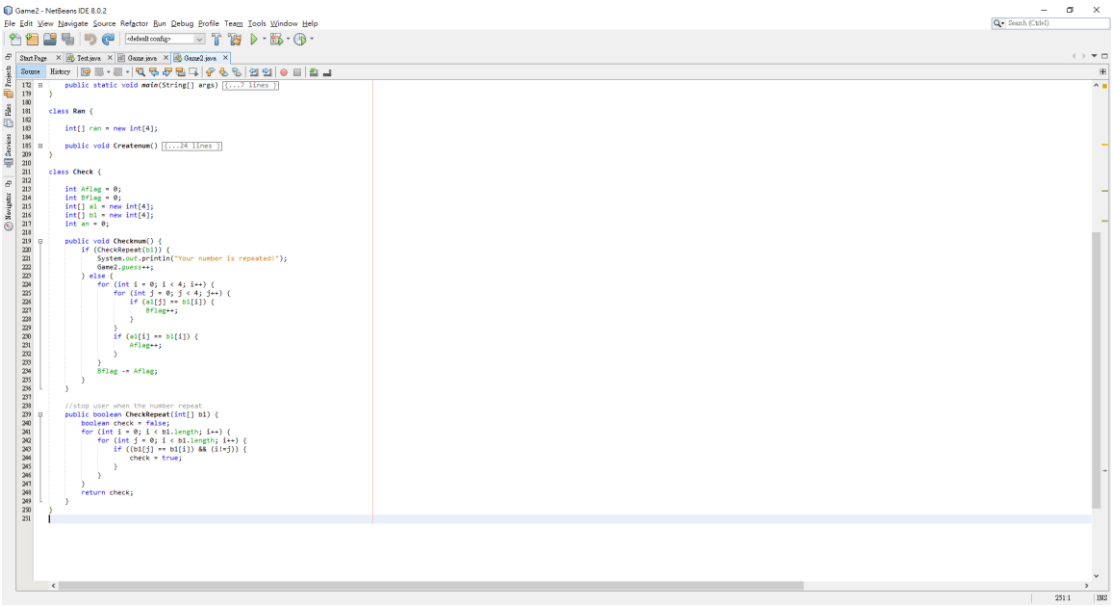


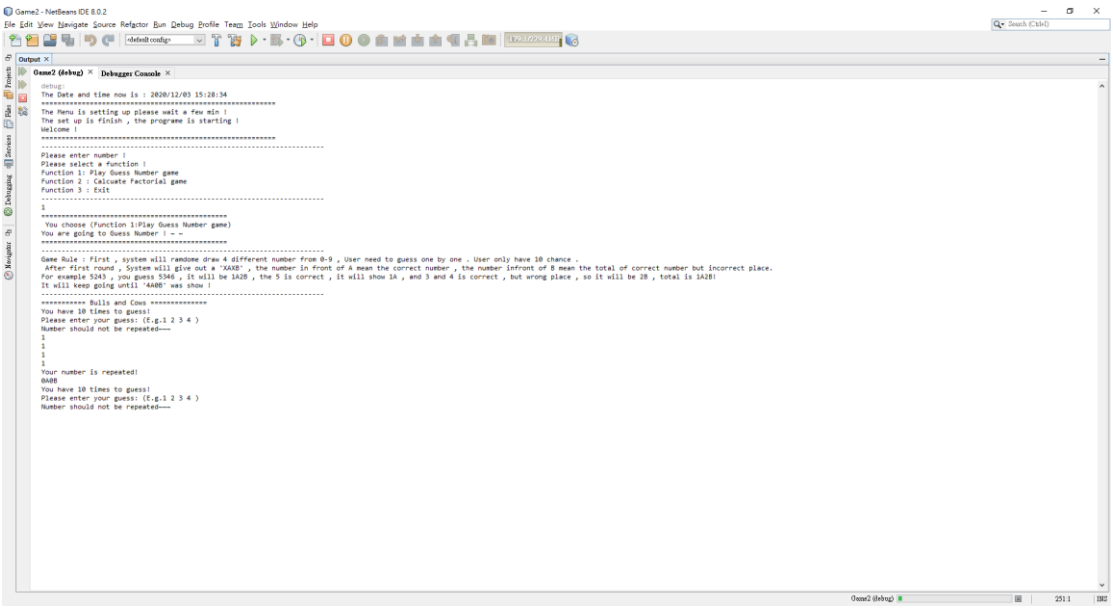
Then put the user input into “ans[]” , after that go into class “check” , check if user input the same digits or not .

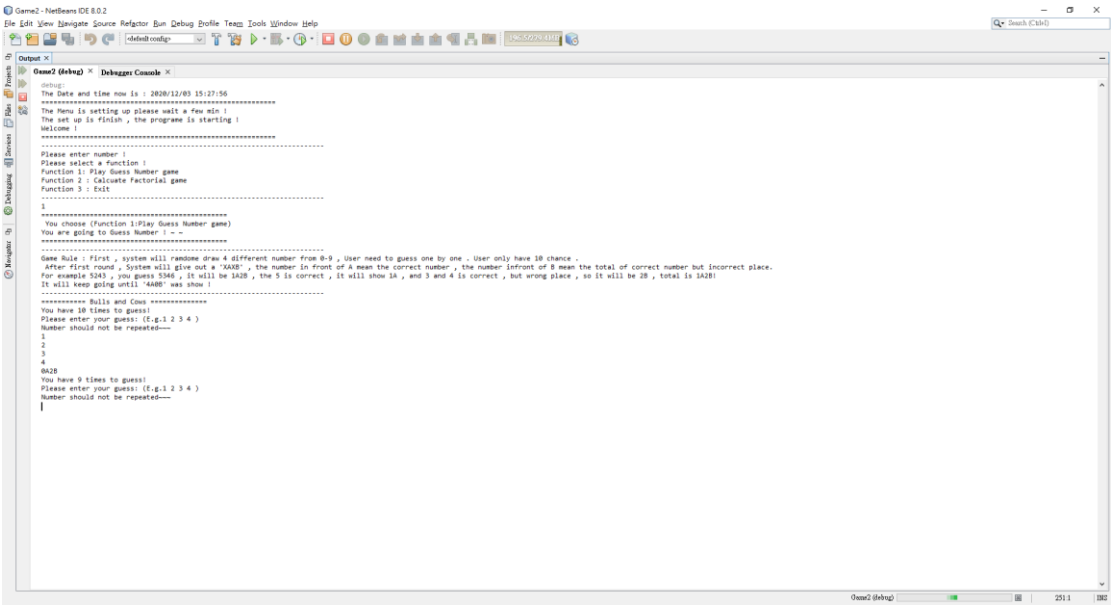
```
238     //stop user when the number repeat
239     public boolean CheckRepeat(int[] b1) {
240         boolean check = false;
241         for (int i = 0; i < b1.length; i++) {
242             for (int j = 0; i < b1.length; i++) {
243                 if ((b1[j] == b1[i]) && (i!=j)) {
244                     check = true;
245                 }
246             }
247         }
248         return check;
249     }
250 }
251
```

If input repeat ,it will print user entered the repeat number , then give a chance for user to do again . If user do not enter repeat number , then it will check the user input is match the system created number , then go back to show as “XAXB” and decrease the chance .

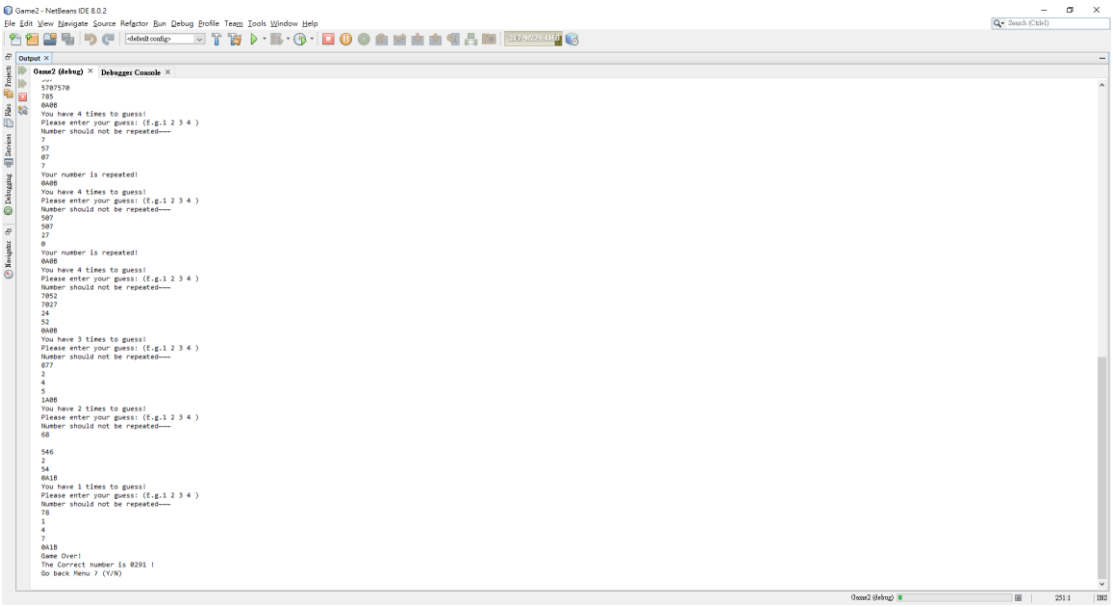
```
        //UI
        System.out.println("========== Bulls and Cows ==============");
        while (guess > 0) {
            System.out.println("You have " + guess + " times to guess!");
            System.out.println("Please enter your guess: (E.g.1 2 3 4 )");
            System.out.println("Number should not be repeated~~~");
            Check s = new Check();
            for (int i = 0; i < 4; i++) {
                result[i] = n.ran[i];
                s.a1[i] = result[i];
            }
            for (int i = 0; i < 4; i++) {
                ans[i] = input.nextInt();
                s.b1[i] = ans[i];
            }
            s.Checknum();
            System.out.println(s.Aflag + "A" + s.Bflag + "B");
            if (s.Aflag == 4) {
                System.out.println("Congraduations!");
                System.exit(0);
            }
            guess--;
```

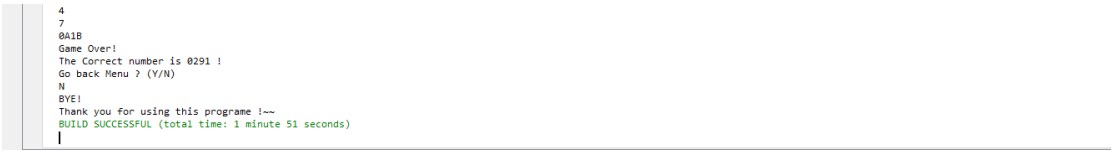


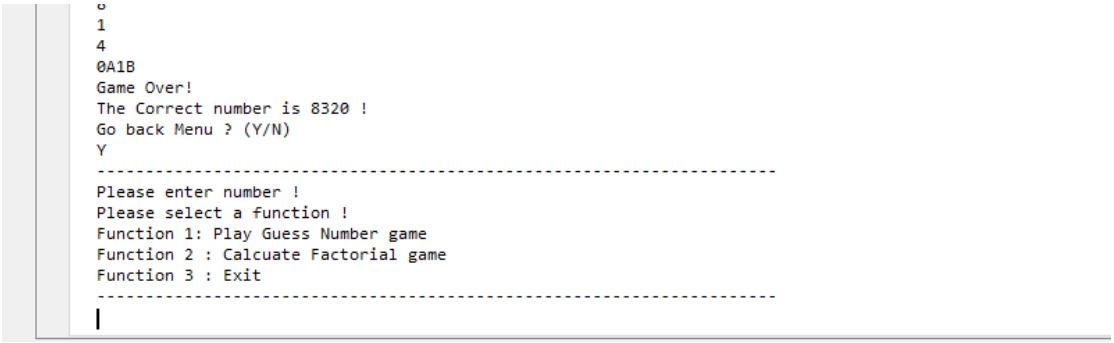




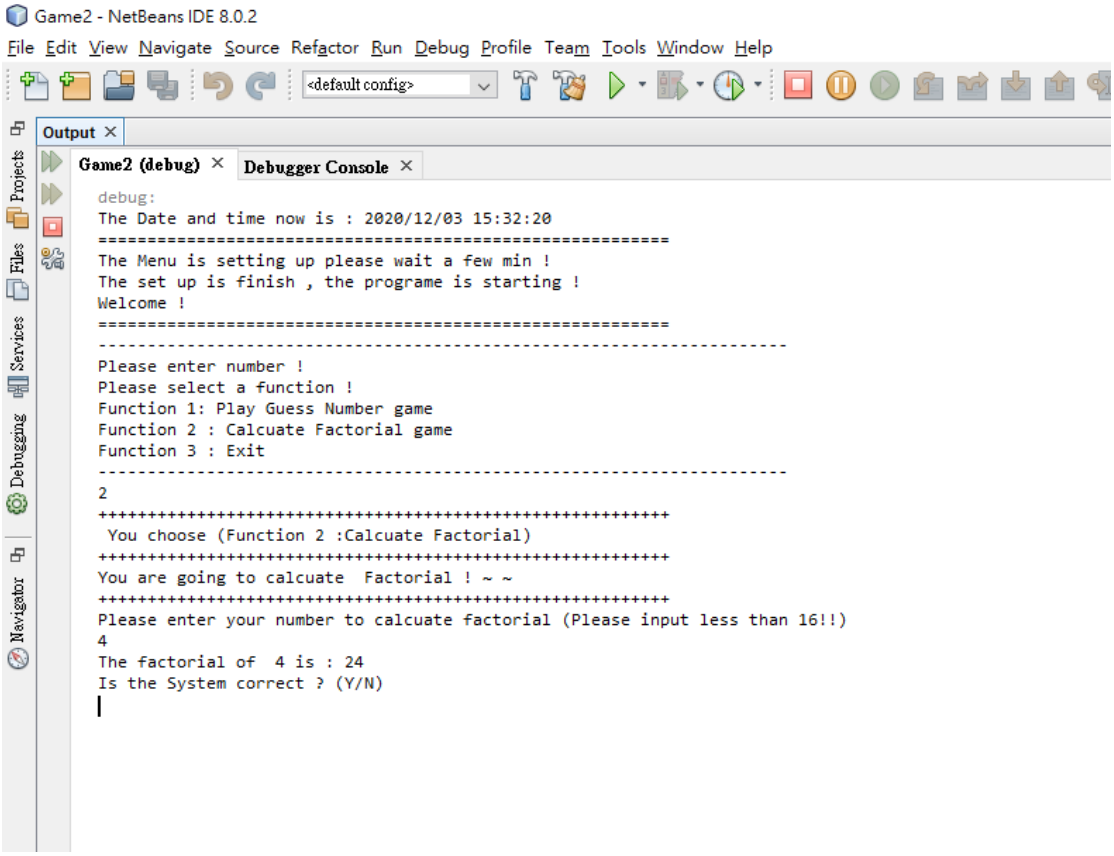
After that the system will show the correct number and ask if user want to go back to menu. If user said Yes , then it will go back to menu , if user said no it will end program .

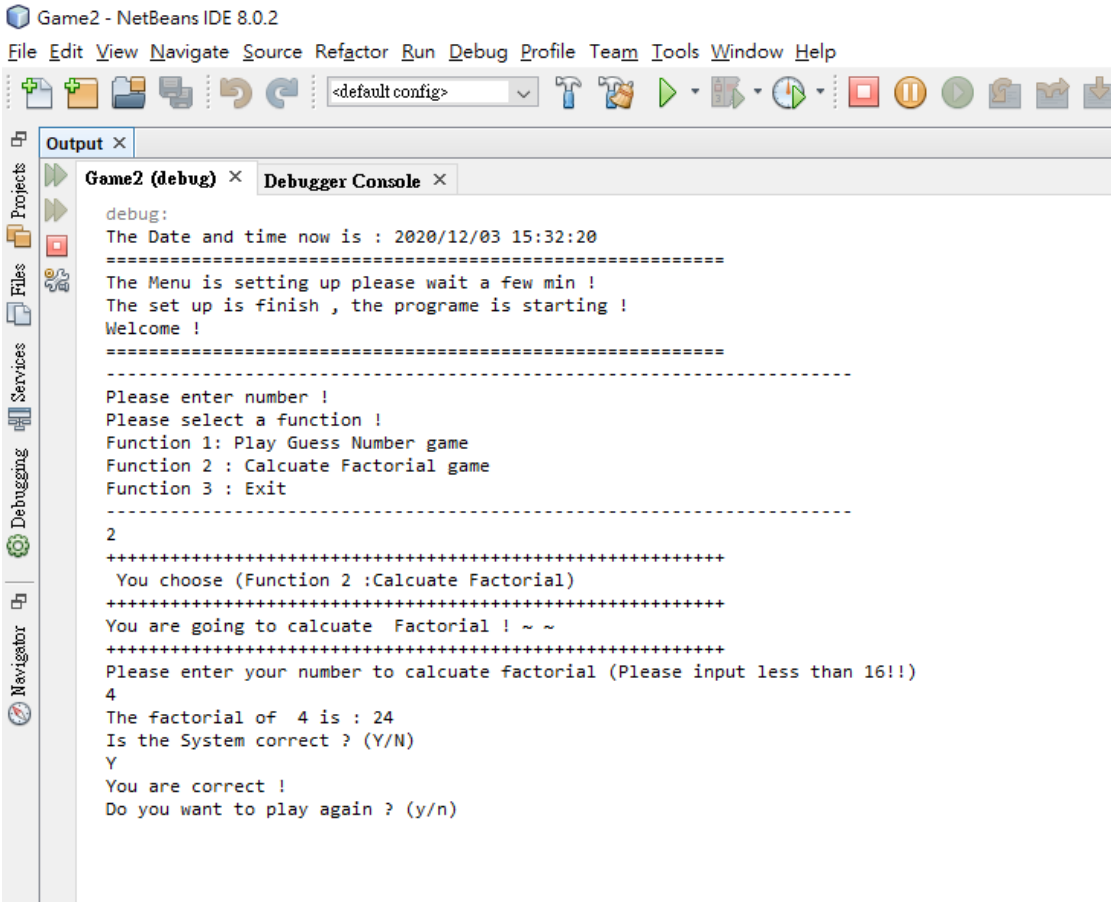




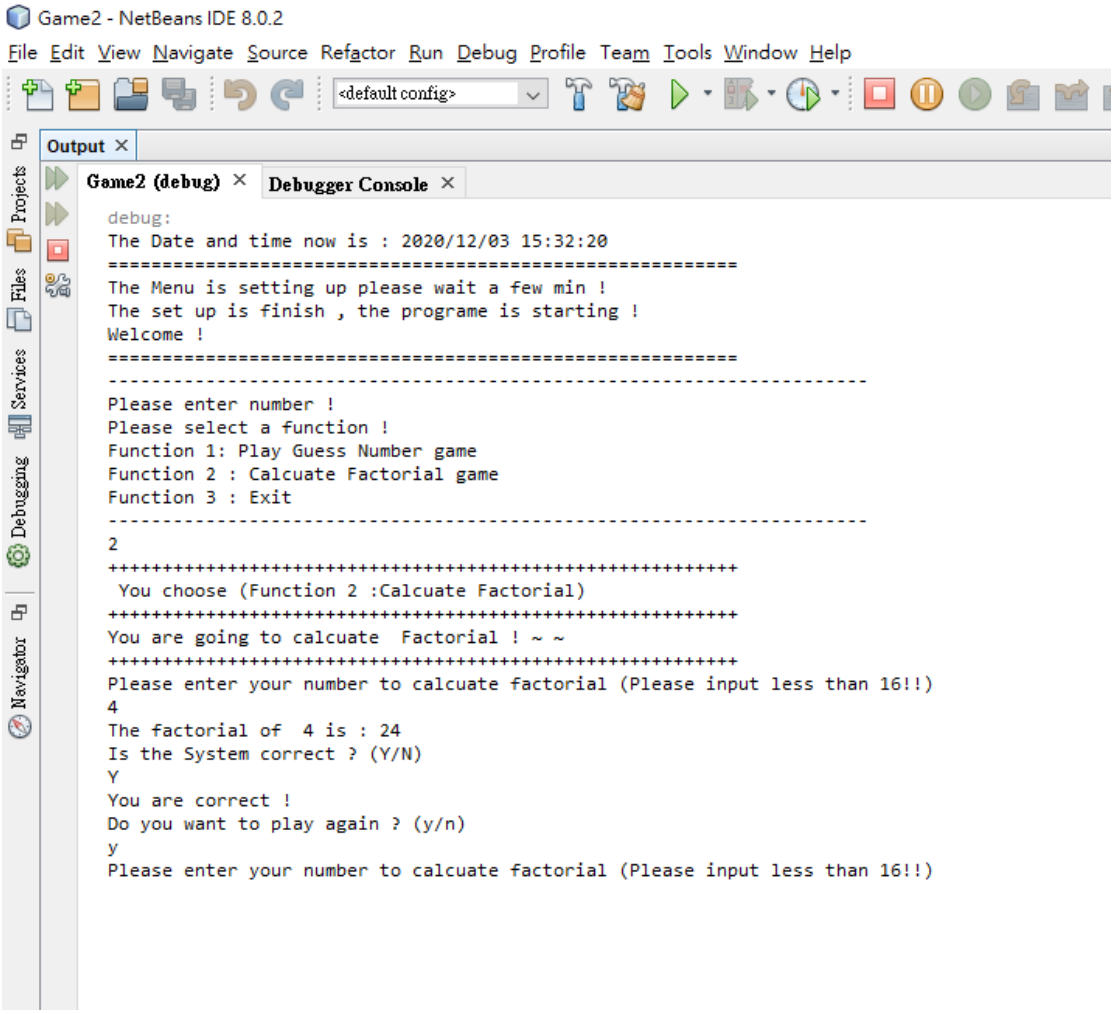


The other game is let user guess the factorial , when user input the number(not larger than 16) , system will calculate it and ask if user that is correct or not . If user correct , the game win , if user not correct , the game loss.


Game2 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
<default config>
Output
Game2 (debug)
Debugger Console
Projects
Files
Services
Debugging
Navigator
debug:
The Date and time now is : 2020/12/03 15:32:20
==========
The Menu is setting up please wait a few min !
The set up is finish , the programe is starting !
Welcome !
==========
Please enter number !
Please select a function !
Function 1: Play Guess Number game
Function 2 : Calcuate Factorial game
Function 3 : Exit
2
++++++++++
You choose (Function 2 :Calcuate Factorial)
++++++++++
You are going to calcuate Factorial ! ~ ~
++++++++++
Please enter your number to calcuate factorial (Please input less than 16!!)
4
The factorial of 4 is : 24
Is the System correct ? (Y/N)



After that , the system will ask user want to play again or not , if user type “y” , it will keep play the game , if user say “n” , then the program will go back to menu to ask user select the menu option .


Game2 - NetBeans IDE 8.0.2
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
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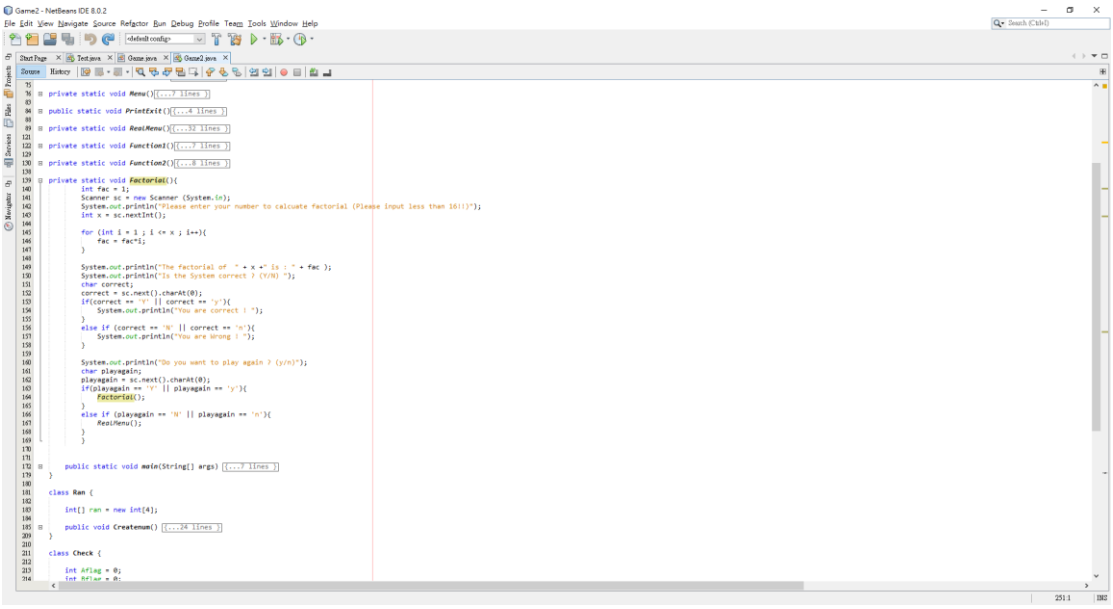
Output
Game2 (debug)
Debugger Console
Projects
Files
Services
Debugging
Navigator
debug:
The Date and time now is : 2020/12/03 15:32:20
==========
The Menu is setting up please wait a few min !
The set up is finish , the programe is starting !
Welcome !
==========

Please enter number !
Please select a function !
Function 1: Play Guess Number game
Function 2 : Calcuate Factorial game
Function 3 : Exit

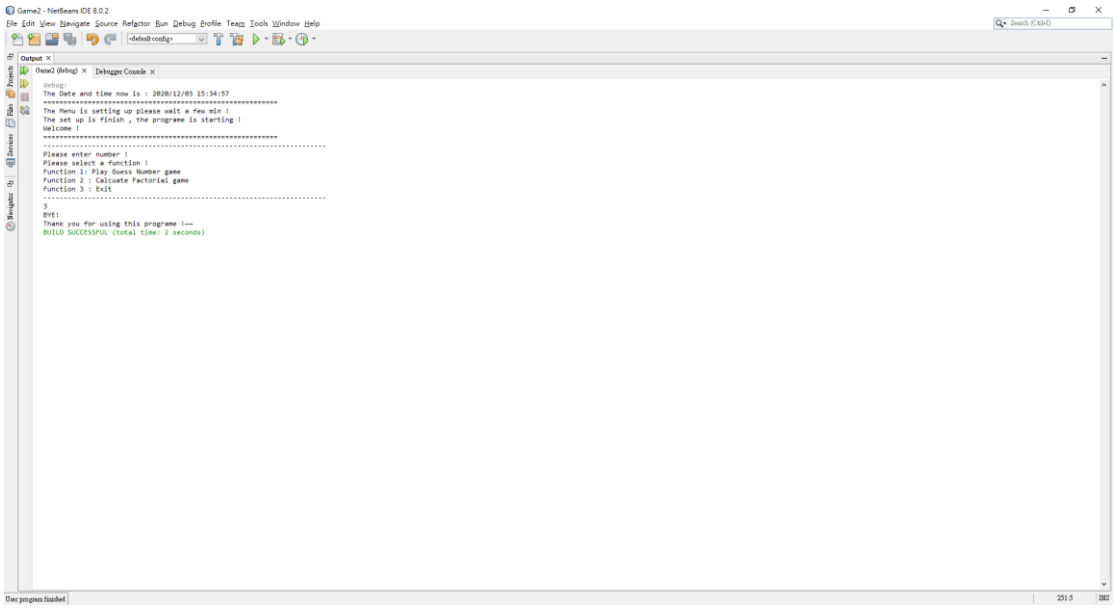
2
++++++++++
You choose (Function 2 :Calcuate Factorial)
++++++++++
You are going to calcuate Factorial ! ~ ~
++++++++++
Please enter your number to calcuate factorial (Please input less than 16!!)
4
The factorial of 4 is : 24
Is the System correct ? (Y/N)
Y
You are correct !
Do you want to play again ? (y/n)
y
Please enter your number to calcuate factorial (Please input less than 16!!)

```
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
 You choose (Function 2 :Calcuate Factorial)
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
You are going to calcuate  Factorial ! ~ ~
+++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
Please enter your number to calcuate factorial (Please input less than 16!!)
4
The factorial of  4 is : 24
Is the System correct ? (Y/N)
Y
You are correct !
Do you want to play again ? (y/n)
y
Please enter your number to calcuate factorial (Please input less than 16!!)
4
The factorial of  4 is : 24
Is the System correct ? (Y/N)
Y
You are correct !
Do you want to play again ? (y/n)
n
-------------------------------------------------------------------------
Please enter number !
Please select a function !
Function 1: Play Guess Number game
Function 2 : Calcuate Factorial game
Function 3 : Exit
-------------------------------------------------------------------------
```



Before the program finish , it will print the exit program .

```
84  public static void PrintExit(){
85          System.out.println("BYE!");
86          System.out.println("Thank you for using this programe !~~");
87      }
```



Presentation Link:

Part1: https://youtu.be/TJ1-Vf8coqU (by CHAN WAI CHUNG)

Part2: https://youtu.be/8IzlzEgrQlQ(by LIZHIHAO)

Part3: https://youtu.be/o4P_njubVs4 (by LO TSZ KIN)