



# Java Assignment 2

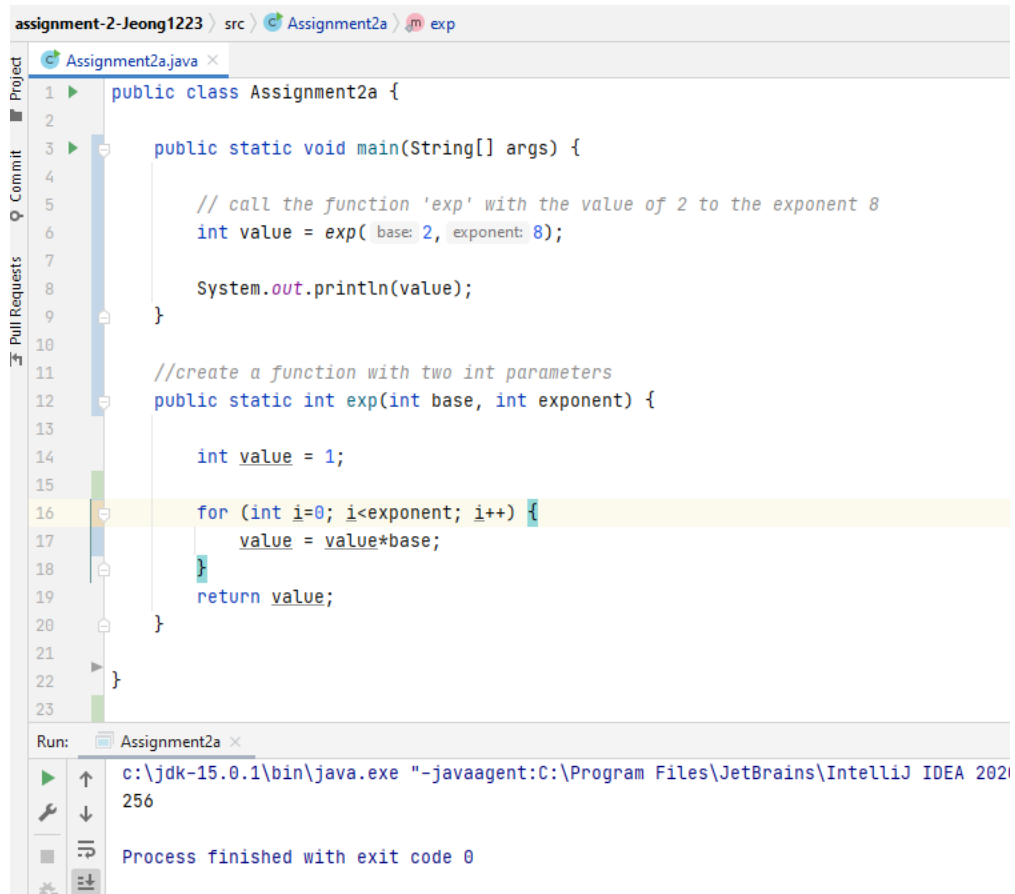
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## 1. Assignment2a



The screenshot displays the IntelliJ IDEA IDE with a project named 'assignment-2-Jeong1223'. The main editor shows the file 'Assignment2a.java' with the following code:

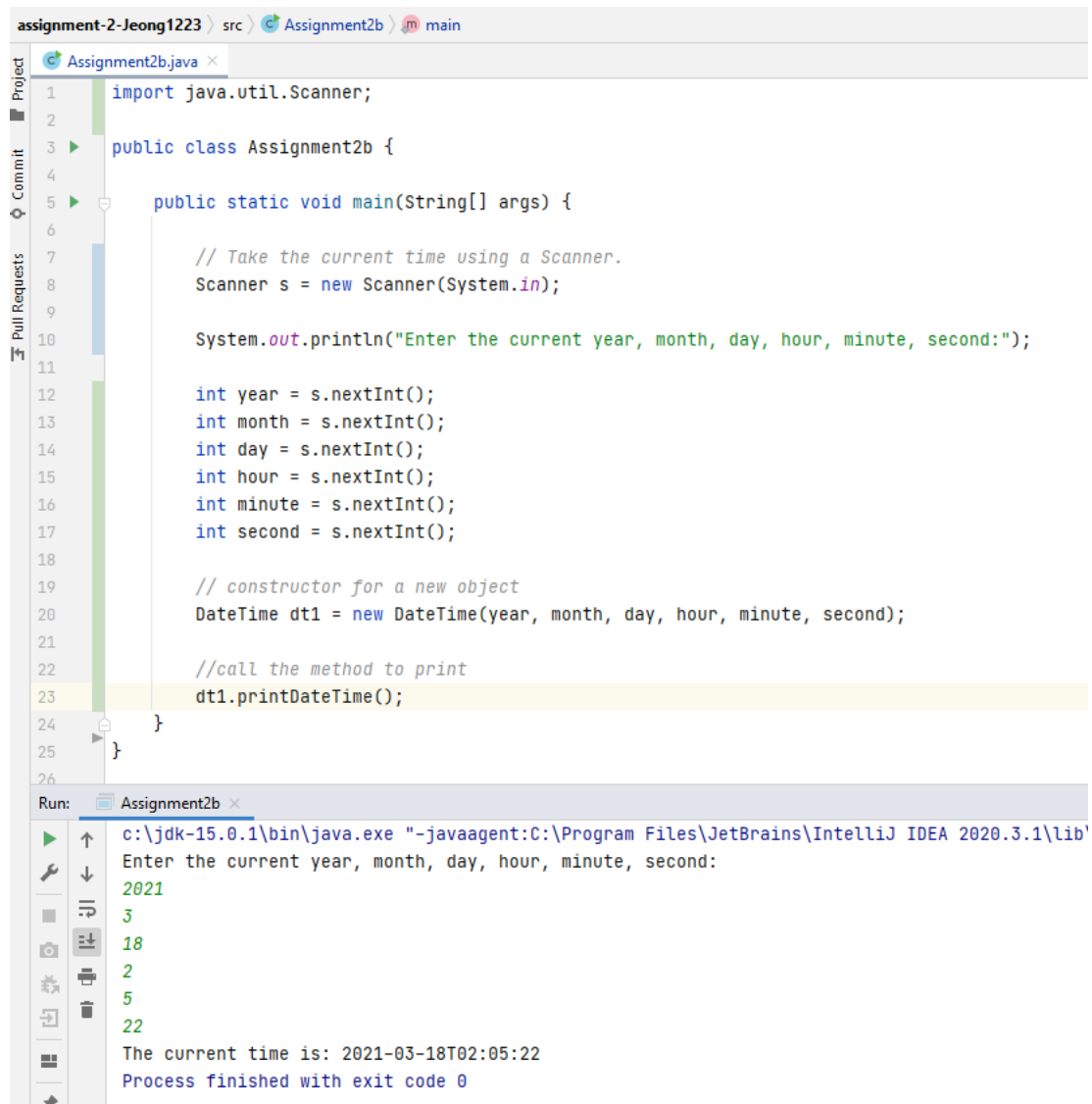
```
1 public class Assignment2a {  
2  
3     public static void main(String[] args) {  
4  
5         // call the function 'exp' with the value of 2 to the exponent 8  
6         int value = exp( base: 2, exponent: 8);  
7  
8         System.out.println(value);  
9     }  
10  
11     //create a function with two int parameters  
12     public static int exp(int base, int exponent) {  
13  
14         int value = 1;  
15  
16         for (int i=0; i<exponent; i++) {  
17             value = value*base;  
18         }  
19         return value;  
20     }  
21  
22 }  
23
```

The 'Run' tab at the bottom shows the execution of 'Assignment2a'. The command executed is:

```
c:\jdk-15.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2021.2\lib\idea_rt.jar=256:c:\jdk-15.0.1\bin\java.exe" -Didea.config.path=C:\Program Files\JetBrains\IntelliJ IDEA 2021.2\conf -Didea.copyright=Copyright (c) 2021 JetBrains -Didea.logger.name=idea-logger -Didea.logger.level=INFO -Didea.platform.prefix=idea -Didea.version=2021.2
```

The output shows the process finished with exit code 0.

## 2. Assignment2b

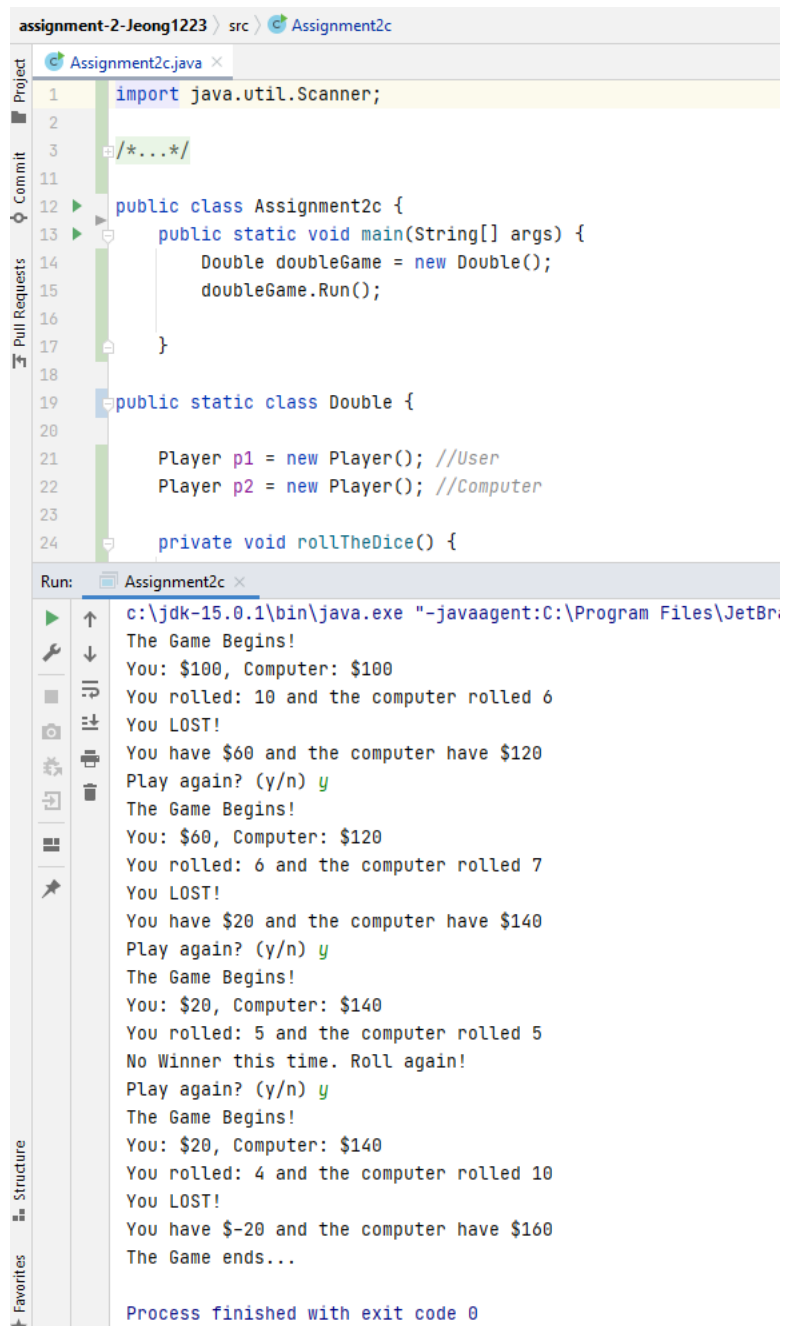


The screenshot displays the IntelliJ IDEA IDE with a project named 'assignment-2-Jeong1223'. The main editor shows the file 'Assignment2b.java' with the following code:

```
1 import java.util.Scanner;
2
3 public class Assignment2b {
4
5     public static void main(String[] args) {
6
7         // Take the current time using a Scanner.
8         Scanner s = new Scanner(System.in);
9
10        System.out.println("Enter the current year, month, day, hour, minute, second:");
11
12        int year = s.nextInt();
13        int month = s.nextInt();
14        int day = s.nextInt();
15        int hour = s.nextInt();
16        int minute = s.nextInt();
17        int second = s.nextInt();
18
19        // constructor for a new object
20        DateTime dt1 = new DateTime(year, month, day, hour, minute, second);
21
22        //call the method to print
23        dt1.printDateTime();
24    }
25 }
26
```

The 'Run' window at the bottom shows the execution of 'Assignment2b'. The command used is 'c:\jdk-15.0.1\bin\java.exe -javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2020.3.1\lib\...'. The output shows the program prompting for input, receiving '2021 3 18 2 5 22', and printing 'The current time is: 2021-03-18T02:05:22'. The process finished with exit code 0.

## 3. Assignment2 c



The screenshot displays an IDE with two panels. The top panel shows the source code for `Assignment2c.java`, and the bottom panel shows the output of running the program.

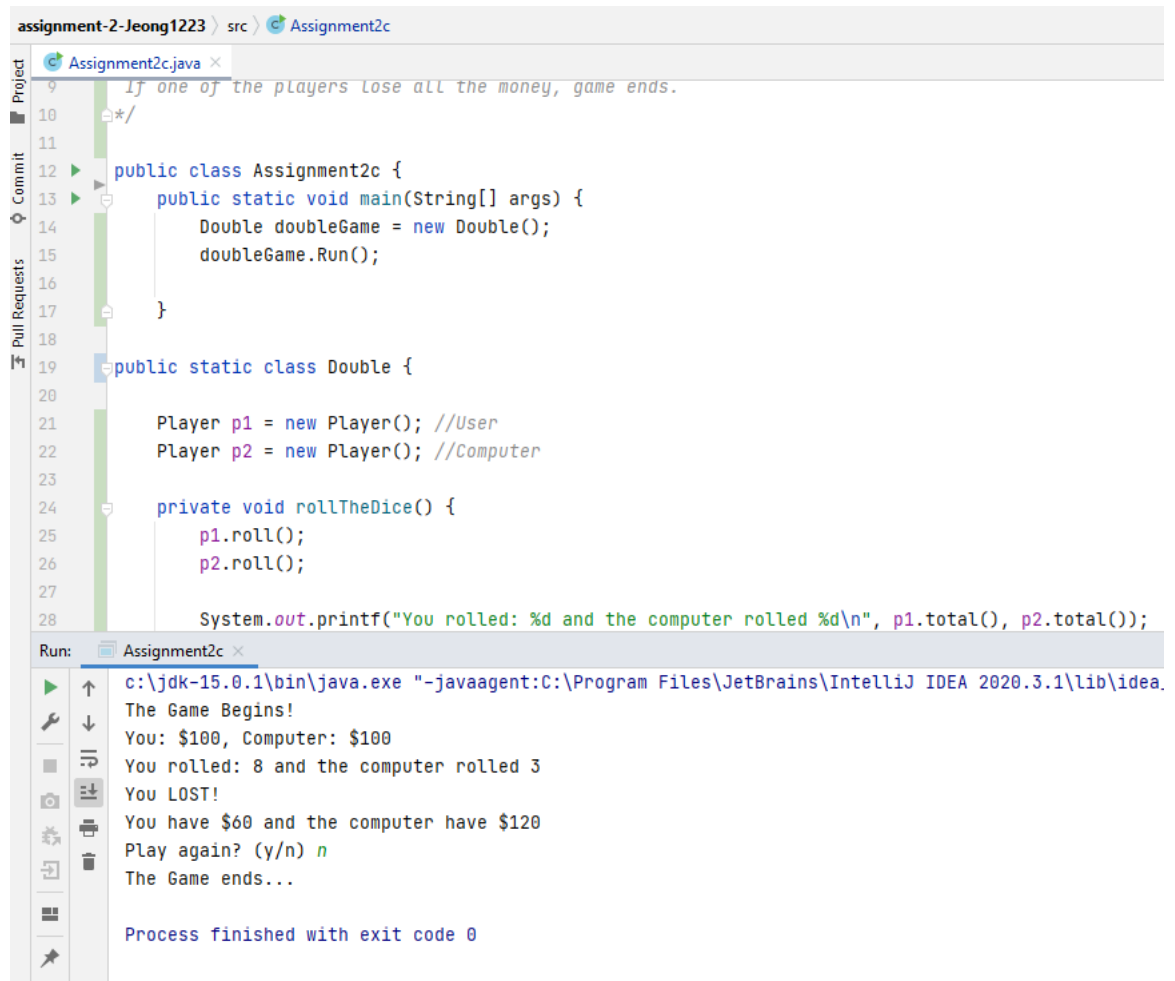
**Source Code:**

```
1 import java.util.Scanner;
2
3 /*...*/
11
12 public class Assignment2c {
13     public static void main(String[] args) {
14         Double doubleGame = new Double();
15         doubleGame.Run();
16     }
17 }
18
19 public static class Double {
20
21     Player p1 = new Player(); //User
22     Player p2 = new Player(); //Computer
23
24     private void rollTheDice() {
```

**Run Output:**

```
c:\jdk-15.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBr
The Game Begins!
You: $100, Computer: $100
You rolled: 10 and the computer rolled 6
You LOST!
You have $60 and the computer have $120
Play again? (y/n) y
The Game Begins!
You: $60, Computer: $120
You rolled: 6 and the computer rolled 7
You LOST!
You have $20 and the computer have $140
Play again? (y/n) y
The Game Begins!
You: $20, Computer: $140
You rolled: 5 and the computer rolled 5
No Winner this time. Roll again!
Play again? (y/n) y
The Game Begins!
You: $20, Computer: $140
You rolled: 4 and the computer rolled 10
You LOST!
You have $-20 and the computer have $160
The Game ends...

Process finished with exit code 0
```



The screenshot displays the IntelliJ IDEA IDE interface. The top toolbar shows icons for Project, Commit, Pull Requests, Run, and other development tools. The main editor window shows the source code for `Assignment2c.java`. The code defines a `public class Assignment2c` with a `main` method that initializes a `Double` object and calls its `Run` method. The `Double` class is a static class containing two `Player` objects, `p1` (User) and `p2` (Computer), and a `rollTheDice` method that rolls the dice for both players and prints the results. The `main` method also prints the total money for each player and asks if the user wants to play again.

```
9  // If one of the players lose all the money, game ends.
10  */
11
12  public class Assignment2c {
13      public static void main(String[] args) {
14          Double doubleGame = new Double();
15          doubleGame.Run();
16      }
17  }
18
19  public static class Double {
20
21      Player p1 = new Player(); //User
22      Player p2 = new Player(); //Computer
23
24      private void rollTheDice() {
25          p1.roll();
26          p2.roll();
27
28          System.out.printf("You rolled: %d and the computer rolled %d\n", p1.total(), p2.total());
29      }
30  }
```

The Run window shows the execution output for `Assignment2c`. The command executed is `c:\jdk-15.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA 2020.3.1\lib\idea...`. The output is as follows:

```
The Game Begins!
You: $100, Computer: $100
You rolled: 8 and the computer rolled 3
You LOST!
You have $60 and the computer have $120
Play again? (y/n) n
The Game ends...

Process finished with exit code 0
```

## 4. Assignment2 d

The screenshot displays the IntelliJ IDEA IDE interface. The top toolbar shows icons for Project, Commit, Pull Requests, and Run. The left sidebar contains the Project view, showing the file structure of 'assignment-2-Jeong1223'. The main editor window shows the code for 'Assignment2d.java'. The code defines a 'public class Assignment2d' with a 'main' method that creates a 'HighLowGame' object and calls its 'Run()' method. The bottom panel shows the 'Run' output, which displays the game's execution, including player bets, computer bets, dice rolls, and the final outcome (WIN or LOST).

```
public class Assignment2d {  
    public static void main(String[] args) {  
        HighLowGame game = new HighLowGame();  
        game.Run();  
    }  
}
```

Run: Assignment2d

```
c:\jdk-15.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ IDE  
Game Begins!  
  
You: $100, Computer: $100  
What is your bet?50  
The computer bets: 54  
You both roll your dice....  
  
The computer rolled a 5 and a 2  
You rolled a 6 and a 6  
You WIN!  
  
Play again? (y/n) y  
  
You: $150, Computer: $46  
What is your bet?150  
The computer bets: 7  
You both roll your dice....  
  
The computer rolled a 2 and a 3  
You rolled a 3 and a 1  
You LOST!  
  
You lost all your money.  
You left with $0  
Process finished with exit code 0
```

The screenshot displays the IntelliJ IDEA IDE interface. The top toolbar shows icons for Project, Run, Debug, and other IDE functions. The left sidebar contains a Project view showing the file structure of 'assignment-2-Jeong1223', including folders like '.idea', 'out', and 'src', and files like 'Assignment2a', 'Assignment2b', 'Assignment2c', 'Assignment2d', 'DateTime', 'Die', 'HighLowGame', and 'Player'. The main editor window shows the code for 'Assignment2d.java'. The code defines a public class 'Assignment2d' with a static method 'main' that creates a 'HighLowGame' object and calls its 'Run()' method. The bottom panel shows the 'Run' output for 'Assignment2d', displaying the execution of the game logic, including player bets, dice rolls, and the final outcome of the game.

```
1 public class Assignment2d {
2
3     public static void main(String[] args) {
4
5         HighLowGame game = new HighLowGame();
6         game.Run();
7
8     }
9
10 }
11
```

Run: Assignment2d

```
c:\jdk-15.0.1\bin\java.exe "-javaagent:C:\Program Files\JetBrains\IntelliJ I
Game Begins!

You: $100, Computer: $100
What is your bet?100
The computer bets: 32
You both roll your dice....

The computer rolled a 6 and a 5
You rolled a 6 and a 1
You LOST!

You lost all your money.
You left with $0
Process finished with exit code 0
```