

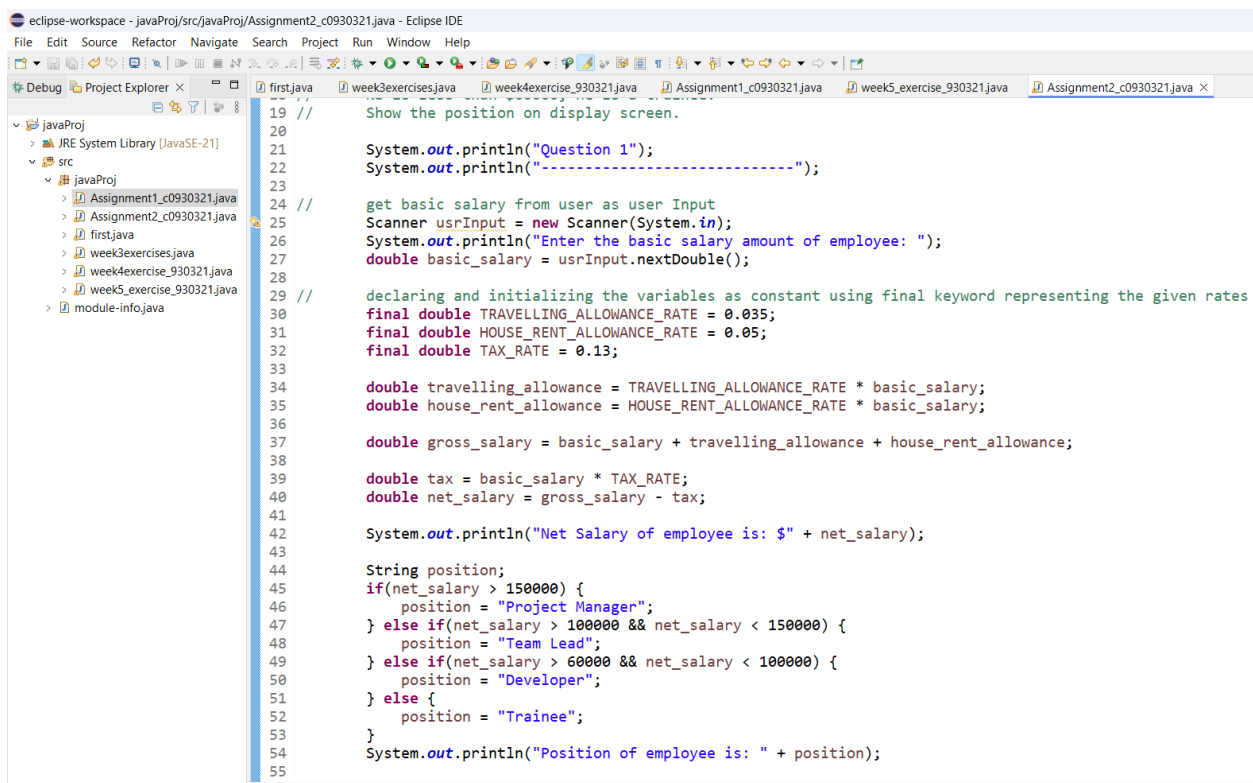
Assignment: 02

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Screenshots of the code with output

Question 1



```
eclipse-workspace - javaProj/src/javaProj/Assignment2_c0930321.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
Debug Project Explorer first.java week3exercis.java week4exercise_930321.java Assignment1_c0930321.java week5_exercise_930321.java Assignment2_c0930321.java
javaProj
  JRE System Library [JavaSE-21]
  src
    javaProj
      Assignment1_c0930321.java
      Assignment2_c0930321.java
      first.java
      week3exercis.java
      week4exercise_930321.java
      week5_exercise_930321.java
      module-info.java

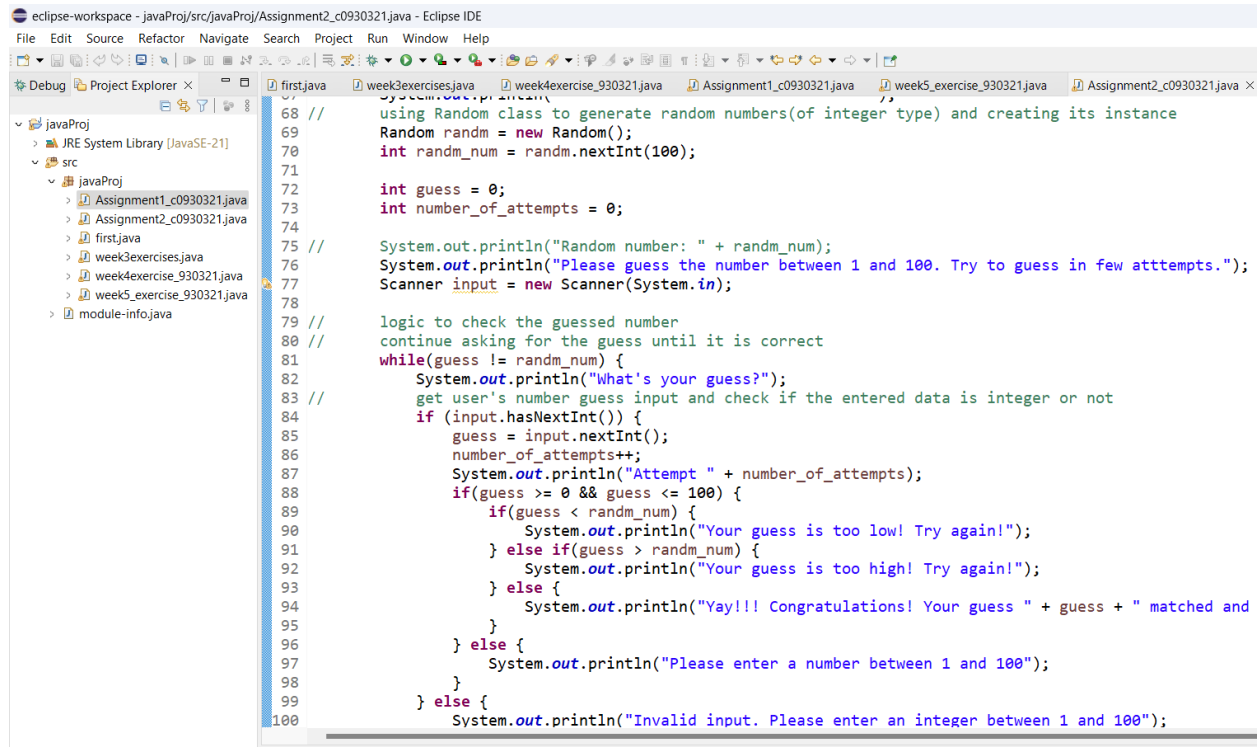
19 // Show the position on display screen.
20
21 System.out.println("Question 1");
22 System.out.println("-----");
23
24 // get basic salary from user as user Input
25 Scanner userInput = new Scanner(System.in);
26 System.out.println("Enter the basic salary amount of employee: ");
27 double basic_salary = userInput.nextDouble();
28
29 // declaring and initializing the variables as constant using final keyword representing the given rates
30 final double TRAVELLING_ALLOWANCE_RATE = 0.035;
31 final double HOUSE_RENT_ALLOWANCE_RATE = 0.05;
32 final double TAX_RATE = 0.13;
33
34 double travelling_allowance = TRAVELLING_ALLOWANCE_RATE * basic_salary;
35 double house_rent_allowance = HOUSE_RENT_ALLOWANCE_RATE * basic_salary;
36
37 double gross_salary = basic_salary + travelling_allowance + house_rent_allowance;
38
39 double tax = basic_salary * TAX_RATE;
40 double net_salary = gross_salary - tax;
41
42 System.out.println("Net Salary of employee is: $" + net_salary);
43
44 String position;
45 if(net_salary > 150000) {
46     position = "Project Manager";
47 } else if(net_salary > 100000 && net_salary < 150000) {
48     position = "Team Lead";
49 } else if(net_salary > 60000 && net_salary < 100000) {
50     position = "Developer";
51 } else {
52     position = "Trainee";
53 }
54 System.out.println("Position of employee is: " + position);
55
```

output

```
eclipse-workspace - javaProj/src/javaProj/Assignment2_c0930321.java - Eclipse IDE
File Edit Source Refactor Navigate Search Project Run Window Help
[Icons]
Console x Problems Debug Shell
Assignment2_c0930321 [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (Jun 12, 2024, 11
Net Salary of employee2 is: $43578.56
Position of employee2 is: Trainee
Enter the basic salary amount of employee 3:
32145.32
Net Salary of employee3 is: $30698.780600000002
Position of employee3 is: Trainee
Enter the basic salary amount of employee 4:
236587.02
Net Salary of employee4 is: $225940.604099999997
Position of employee4 is: Project Manager
Enter the basic salary amount of employee 5: |
325473.33
Net Salary of employee5 is: $310827.03015
Position of employee5 is: Project Manager
Enter the basic salary amount of employee 6:
12365.35
Net Salary of employee6 is: $11808.90925
Position of employee6 is: Trainee
Enter the basic salary amount of employee 7:
8524.35
Net Salary of employee7 is: $8140.754250000001
Position of employee7 is: Trainee
Enter the basic salary amount of employee 8:
100000
Net Salary of employee8 is: $95500.0
Position of employee8 is: Developer
Enter the basic salary amount of employee 9:
120000
Net Salary of employee9 is: $114600.0
Position of employee9 is: Team Lead
Enter the basic salary amount of employee 10:
131456.99
Net Salary of employee10 is: $125541.42545000001
Position of employee10 is: Team Lead

Average net salary of the 10 employees is: $104204.76
```

Question 2:



The screenshot shows the Eclipse IDE interface. The top menu bar includes File, Edit, Source, Refactor, Navigate, Search, Project, Run, Window, and Help. Below the menu is a toolbar with various icons. The Project Explorer on the left shows a project named 'javaProj' with a 'src' folder containing several Java files: 'Assignment1_c0930321.java', 'Assignment2_c0930321.java', 'first.java', 'week3exercises.java', 'week4exercise_930321.java', 'week5_exercise_930321.java', and 'module-info.java'. The main editor window displays the code for 'Assignment2_c0930321.java'. The code is a Java program that generates a random number and allows the user to guess it. It includes comments in Chinese and English, and uses the 'Random' class from the 'java.util' package. The program uses a 'while' loop to keep asking for guesses until the user's guess matches the random number. It also uses 'Scanner' for input and 'System.out.println' for output.

```
68 // using Random class to generate random numbers(of integer type) and creating its instance
69 Random random = new Random();
70 int randm_num = random.nextInt(100);
71
72 int guess = 0;
73 int number_of_attempts = 0;
74
75 // System.out.println("Random number: " + randm_num);
76 System.out.println("Please guess the number between 1 and 100. Try to guess in few attempts.");
77 Scanner input = new Scanner(System.in);
78
79 // logic to check the guessed number
80 // continue asking for the guess until it is correct
81 while(guess != randm_num) {
82     System.out.println("What's your guess?");
83     // get user's number guess input and check if the entered data is integer or not
84     if (input.hasNextInt()) {
85         guess = input.nextInt();
86         number_of_attempts++;
87         System.out.println("Attempt " + number_of_attempts);
88         if(guess >= 0 && guess <= 100) {
89             if(guess < randm_num) {
90                 System.out.println("Your guess is too low! Try again!");
91             } else if(guess > randm_num) {
92                 System.out.println("Your guess is too high! Try again!");
93             } else {
94                 System.out.println("Yay!!! Congratulations! Your guess " + guess + " matched and");
95             }
96         } else {
97             System.out.println("Please enter a number between 1 and 100");
98         }
99     } else {
100         System.out.println("Invalid input. Please enter an integer between 1 and 100");
```

output

```
70      int randm_num = randm.nextInt(100);
```

Console × Problems Debug Shell

Assignment2_c0930321 [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (Jun 12, 2024, 11:12:25 p.m.) [pid: 19212]

```
Question 2
-----
***** Number Guessing Game *****
-----

Please guess the number between 1 and 100. Try to guess in few attempts.
What's your guess?
50
Attempt 1
Your guess is too low! Try again!
What's your guess?
70
Attempt 2
Your guess is too high! Try again!
What's your guess?
60
Attempt 3
Your guess is too high! Try again!
What's your guess?
55
Attempt 4
Your guess is too low! Try again!
What's your guess?
58
Attempt 5
Your guess is too high! Try again!
What's your guess?
57
Attempt 6
Yay!!! Congratulations! Your guess 57 matched and you took 6 tries
```

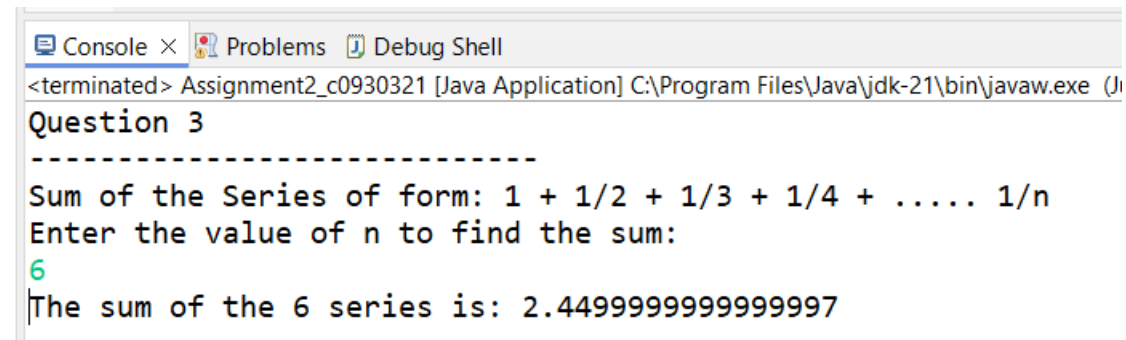
Question 3:

```
/*      Question 3: program to calculate the sum of following series where n is input by user
 *      1 + 1/2 + 1/3 + 1/4 + 1/5 + ..... 1/n
 * */

System.out.println();
System.out.println("Question 3");
System.out.println("-----");
System.out.println("Sum of the Series of form: 1 + 1/2 + 1/3 + 1/4 + ..... 1/n");
System.out.println("Enter the value of n to find the sum: ");
int n = usrInput.nextInt();
double sum = 0.0;

//      logic to calculate sum of the series
for(int i = 1; i <= n; i++) {
    sum += 1.0/i;
}
System.out.println("The sum of the " + n + " series is: " + sum);
```

output



The screenshot shows a Java IDE console window with the following output:

```
<terminated> Assignment2_c0930321 [Java Application] C:\Program Files\Java\jdk-21\bin\javaw.exe (J
Question 3
-----
Sum of the Series of form: 1 + 1/2 + 1/3 + 1/4 + ..... 1/n
Enter the value of n to find the sum:
6
The sum of the 6 series is: 2.4499999999999997
```