

ASSIGNMENT-4

1.	Write a java program that gets three integer numbers from the user. Count from the first number to the second number increments by the third number. Use for loop to do it. Also, display the sum of numbers displayed between the first number and second number.
Code.	<pre>package ASSIGNMENT_4; import java.util.*; public class program1 { public static void main(String[] args) { Scanner sc = new Scanner(System.in); System.out.print("Enter the 1st Number : "); int n1 = sc.nextInt(); System.out.print("Enter the 2nd Number : "); int n2 = sc.nextInt(); System.out.print("Enter the 3rd Number : "); int n3 = sc.nextInt(); int sum = 0; for (int i=n1 ; i<=n2 ; i=i+n3) { System.out.print(i + " "); sum = sum + i; } System.out.println(); System.out.println("The sum of the number is "+sum); } }</pre>
Output.	Enter the 1st Number : 4 Enter the 2nd Number : 13 Enter the 3rd Number : 3 4 7 10 13 The sum of the number is 34
2.	An integer n is divisible by 9 if the sum of its digits is divisible by 9. Use this concept in your program to determine whether or not the number is divisible by 9. Test it on the following numbers: Use while loop .
Code.	<pre>package ASSIGNMENT_4; import java.util.*; public class program2 { public static void main(String[] args) { Scanner sc = new Scanner(System.in); System.out.print("Enter the value of n : "); int n = sc.nextInt(); int sum = 0; while (n>0) { int a = n % 10; sum = sum + a;</pre>

	<pre> n = n / 10; } System.out.println("The sum is " + sum); if (sum % 9 == 0) { System.out.println("It is divisible by 9"); } else { System.out.println("It is not divisible by 9"); } } } </pre>
Output.	<p>Enter the value of n : 123456 The sum is 21 It is not divisible by 9</p> <p>Enter the value of n : 621594 The sum is 27 It is divisible by 9</p> <p>Enter the value of n : 154368 The sum is 27 It is divisible by 9</p>
3.	Write a java program that takes an integer N from user, uses Math. Random () to print N random integer numbers between 1 to N, and then prints their average value. Use do while loop .
Code.	<pre> package ASSIGNMENT_4; import java.util.*; public class program3 { public static void main(String[] args) { Scanner sc = new Scanner(System.in); System.out.print("Enter a number : "); int n = sc.nextInt(); int sum = 0; for (int i=1 ; i<=n ; i++) { int r = (int)(n*Math.random()) + 1; System.out.print(r + " "); sum = sum + r; } System.out.println(); int avg = sum / n; System.out.println("Average of " + n + " random number are " + avg); } } </pre>
Output.	<p>Enter a number : 6 4 3 4 6 3 4 Average of 6 random number are 4</p>

4.	Write a program that finds greatest common divisor (GCD) of two numbers using Euclid's algorithm, which is an iterative computation based on the following observation: if y divides x, the GCD of x and y is y; otherwise, the GCD of x and y is same as GCD of x % y and y.
Code.	<pre> package ASSIGNMENT_4; import java.util.*; public class program4 { public static void main(String[] args) { Scanner sc = new Scanner(System.in); System.out.print("Enter the first Number : "); int n1 = sc.nextInt(); System.out.print("Enter the second Number : "); int n2 = sc.nextInt(); int gcd = 0; for (int i=1 ; i<=Math.min(n1,n2); i++) { if (n1%i==0 && n2%i==0) { gcd = i; } } System.out.println("GCD of " + n1 + " and " + n2 + " is " + gcd); } } </pre>
Output.	Enter the first Number : 56 Enter the second Number : 98 GCD of 56 and 98 is 14
5.	Write a Java program to check if a number is perfect number or not.
Code.	<pre> package ASSIGNMENT_4; import java.util.*; public class program5 { public static void main(String[] args) { Scanner sc = new Scanner(System.in); System.out.print("Enter the Number : "); int n = sc.nextInt(); int sum = 0; for (int i=1 ; i<n ; i++) { if (n % i == 0) { sum = sum + i; } } if (sum == n) { System.out.println(n + " Given number is perfect"); } else { System.out.println(n + " Given number is not perfect"); } } } </pre>

	}
Output.	Enter the Number : 496 496 Given number is perfect Enter the Number : 490 490 Given number is not perfect
6.	Write a java program to enter two numbers through the keyboard. Write a program to find the value of one number raised to the power of another. (Do not use Java built-in method).
Code.	<pre> package ASSIGNMENT_4; import java.util.*; public class program6 { public static void main(String[] args) { Scanner sc = new Scanner(System.in); System.out.print("Enter the base : "); int b = sc.nextInt(); System.out.print("Enter the power : "); int p = sc.nextInt(); int i; i = p; int r = 1; while (p > 0) { r = r * b; p--; } System.out.println(b + " to the power " + i + " is " + r); } } </pre>
Output.	Enter the base : 5 Enter the power : 4 5 to the power 4 is 625
7.	Write a java program to print the multiplication table of a number entered by the user.
Code.	<pre> package ASSIGNMENT_4; import java.util.*; public class program7 { public static void main(String[] args) { Scanner sc = new Scanner(System.in); System.out.print("Enter a no. for which you want to find multiplication table : "); int t = sc.nextInt(); for (int i=1 ; i<=10 ; i++) { int m = t * i; System.out.println(t + " X " + i + " = " + m); } } } </pre>

	<pre> } } </pre>
Output.	<p>Enter a no. for which you want to find multiplication table : 8</p> <p>8 X 1 = 8 8 X 2 = 16 8 X 3 = 24 8 X 4 = 32 8 X 5 = 40 8 X 6 = 48 8 X 7 = 56 8 X 8 = 64 8 X 9 = 72 8 X 10 = 80</p>
8.	<p>Write a program that generates a random integer number between 1 to 10 and asks the user to guess what the number is. If the user's guess is higher than the random number, the program should display "Too high, try again." If the user's guess is lower than the random number, the program should display "Too low, try again." The program should use a loop that repeats until the user correctly guesses the random number and display good guess.</p>
Code.	<pre> package ASSIGNMENT_4; import java.util.*; public class program8 { public static void main(String[] args) { Scanner sc = new Scanner(System.in); boolean r = true; while (r) { System.out.print("User Guess : "); int user = sc.nextInt(); int comp = (int)(10 * Math.random()) + 1; System.out.println("Computer Guess : " + comp); if (user == comp) { System.out.println("Good guess"); r = false; break; } else if (user > comp) { System.out.println("Too high ; try again"); } else if (user < comp) { System.out.println("Too low , try again"); } } } } </pre>
Output.	<p>User Guess : 6 Computer Guess : 7</p>

	<p>Too low , try again</p> <p>User Guess : 5 Computer Guess : 4 Too high ; try again</p> <p>User Guess : 4 Computer Guess : 1 Too high ; try again</p> <p>User Guess : 3 Computer Guess : 3 Good guess</p>
9.	Write a java program to take an integer input from the user and print the input by removing all zeros.
Code.	<pre> package ASSIGNMENT_4; import java.util.*; public class program9 { public static void main(String[] args) { Scanner sc = new Scanner(System.in); System.out.print("Enter a number : "); int n = sc.nextInt(); int t; t = n; int rev1 = 0; int rev2 = 0; while (n > 0) { int d = n % 10 ; rev1 = (rev1*10) + d; n = n / 10; } while (rev1 > 0) { int d = rev1 % 10; if (d != 0) { rev2 = (rev2*10) + d; } rev1 = rev1 / 10; } System.out.println("After removing 0 from number " + t + " , the new number is " + rev2); } } </pre>
Output.	Enter a number : 10203040

	After removing 0 from number 10203040 , the new number is 1234
10.	Write a java program to print largest power of three less than or equal to N.
Code.	<pre> package ASSIGNMENT_4; import java.util.*; public class program10 { public static void main(String[] args) { Scanner sc = new Scanner(System.in); int p = 1; System.out.print("Enter a number : "); int n = sc.nextInt(); while (3*p <= n) { p = p * 3; } System.out.println("The largest power of 3 less than or equal to " + n + " is " + p); } } </pre>
Output.	Enter a number : 100 The largest power of 3 less than or equal to 100 is 81
HW_1.	Write a java program to find the difference between the sum of the squares of the first ten natural numbers and the square of the sum.
Code.	<pre> package ASSIGNMENT_4; import java.util.*; public class HW_1 { public static void main(String[] args) { Scanner sc = new Scanner(System.in); System.out.print("Enter a Number : "); int n = sc.nextInt(); int t = n; int sum1 = 0; int sum2 = 0; while (n > 0) { int p = (int)(Math.pow(n , 2)); sum1 = sum1 + p; n--; } while (t > 0) { sum2 = sum2 + t; t--; } int d = (int)Math.pow(sum2,2) - sum1 ; System.out.println("Hence the difference between the sum of the square of the first ten natural number and the square of the sum is " + (int)Math.pow(sum2,2) + " - " + sum1 + " = " + d); } } </pre>

	<pre> } } </pre>
Output.	<p>Enter a Number : 10</p> <p>Hence the difference between the sum of the square of the first ten natural number and the square of the sum is $3025 - 385 = 2640$</p>
HW_2.	<p>If we list all the natural numbers below 10 that are multiples of 3 or 5, we get 3, 5, 6 and 9. The sum of these multiples is 23. Write a java program to find the sum of all the multiples of 3 or 5 below 1000.</p>
Code.	<pre> package ASSIGNMENT_4; import java.util.*; public class HW_2 { public static void main(String[] args) { Scanner sc = new Scanner(System.in); System.out.print("Enter the value of n : "); int n = sc.nextInt(); int sum = 0; for (int i=1 ; i<n ; i++) { if (i % 3 == 0 i % 5 == 0) { System.out.print(i + " "); sum = sum + i; } } System.out.println(); System.out.println("The sum is " + sum); } } </pre>
Output.	<p>Enter the value of n : 10</p> <p>3 5 6 9</p> <p>The sum is 23</p>
HW_3.	<p>Write a java program in which using one for loop and one if statement, prints the integers from 1,000 to 2,000 with five integers per line. Hint: Use the % operation.</p>
Code.	<pre> package ASSIGNMENT_4; public class HW_3 { public static void main(String[] args) { for (int i=1000 ; i<=2000 ; i++) { System.out.print(i + " "); if ((i + 1) % 5 == 0) { System.out.println(); } } } } </pre>
Output.	<p>1000 1001 1002 1003 1004</p>

	1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000
HW_4.	Write a java program to print the sum of all even numbers and the product of all odd numbers from 1 to N. Where, N is the input to the program.
Code.	<pre> package ASSIGNMENT_4; import java.util.*; public class HW_4 { public static void main(String[] args) { Scanner sc = new Scanner(System.in); System.out.print("Enter the value of n : "); int n = sc.nextInt(); int even = 0; int odd = 1; for (int i=1 ; i<=n ; i++) { if (i % 2 == 0) { even = even + i; } else { odd = odd * i; } } System.out.println("Sum of all even number is " + even); System.out.println("Odd of all even number is " + odd); } } </pre>
Output.	Enter the value of n : 10 Sum of all even number is 30 Odd of all even number is 945
HW_5.	Write a java program to print the following output using loop. Where, input is the number of rows in output pattern. For input, N = 4. 1 121 1213121 121312141213121
Code.	<pre> package ASSIGNMENT_4; import java.util.*; </pre>

	<pre>public class HW_5 { public static void main(String[] args) { Scanner sc = new Scanner(System.in); System.out.print("Enter a number : "); int n = sc.nextInt(); String st1 = " "; for (int i=1 ; i<=n ; i++) { st1 = st1 + i + st1; System.out.println(st1); } } }</pre>
Output.	<pre>1 1 2 1 1 2 1 3 1 2 1 1 2 1 3 1 2 1 4 1 2 1 3 1 2 1</pre>