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Q.1 Write a Java program to find GCD of two numbers

Solution:

```java
import java.util.Scanner;
public class GCD
{
    public static void main(String[] args)
    {
        int a, b;
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the First Number: ");
        a = sc.nextInt();
        System.out.print("Enter the Second Number: ");
        b = sc.nextInt();
        System.out.println("GCD of " + a +" and " + b + " is " + findGCD(a, b));

    }

    static int findGCD(int a, int b)
    {
        if (b == 0)
            return a;
        return findGCD(b, a % b);
    }
}
```

Output:

```
anura@LAPTOP-JH3Q50BP MINGW64 /e/College/OOPS/Practical/Practical_1
$ java GCD
Enter the First Number: 45
Enter the Second Number: 25
GCD of 45 and 25 is 5
```

Q.2 Write a program in Java to generate a random number and display if it is odd or even

Solution:

```java
import java.util.Random;
import java.util.Scanner;
class GenerateRandom {
    public static void main( String args[] ) {
      Random rand = new Random(); //instance of random class
      int upperbound;
      Scanner sc = new Scanner(System.in);
      System.out.print("Enter the upper bound of the random number: ");
      upperbound = sc.nextInt();
      int int_random = rand.nextInt(upperbound);

      System.out.println("Random integer value from 0 to" + (upperbound-
1) + " : "+ int_random);
      if (int_random % 2 == 0 )
        System.out.println("Random number is even");
      else
        System.out.println("Random number is odd");
    }
}
```

Output:

```
anura@LAPTOP-JH3Q50BP MINGW64 /e/College/OOPS/Practical/Practical_1
$ java GenerateRandom
Enter the upper bound of the random number: 50
Random integer value from 0 to49 : 22
Random number is even
```

Q3. Write a program in Java to check if a number is a perfect square.

Solution:

```java
import java.util.Scanner;
public class Square
{
    static boolean checkPerfectSquare(double number)
    {
        double sqrt=Math.sqrt(number);
        return ((sqrt - Math.floor(sqrt)) == 0);
    }

    public static void main(String[] args)
    {
        System.out.print("Enter any number: ");
        Scanner sc=new Scanner(System.in);
        double number=sc.nextDouble();
        if (checkPerfectSquare(number))
        System.out.print("Yes, the given number is perfect square.");
        else
        System.out.print("No, the given number is not perfect square.");
    }
}
```

Output:

```
anura@LAPTOP-JH3Q5OBP MINGW64 /e/College/OOPS/Practical/Practical_1
$ java Square
Enter any number: 64
Yes, the given number is perfect square.
```

Q4. Write a Java program to read three numbers and get the smallest number using a ternary operator.

Solution:

```java
import java.util.Scanner;
public class Smallest
{
public static void main(String[] args)
{
    int a, b, c, smallest;
    Scanner sc = new Scanner(System.in);
    System.out.println("Enter the first number:");
    a = sc.nextInt();
    System.out.println("Enter the second number:");
    b = sc.nextInt();
    System.out.println("Enter the third number:");
    c = sc.nextInt();
    smallest = c < (a < b ? a : b) ? c : ((a < b) ? a : b);
    System.out.println("The smallest number is: "+smallest);
    }
}
```

Output:

```
anura@LAPTOP-JH3Q5OBP MINGW64 /e/College/OOPS/Practical/Practical_1
$ java Smallest.java
Enter the first number: 34
Enter the second number: 17
Enter the third number: 65
The smallest number is: 17
```