CSE1007 – JAVA PROGRAMMING

Lab Exercise on Methods

Question 1

Write a JAVA program to find the GCD of any two numbers. Your program should have method findGCD() that return the gcd of the two numbers.

CODE:

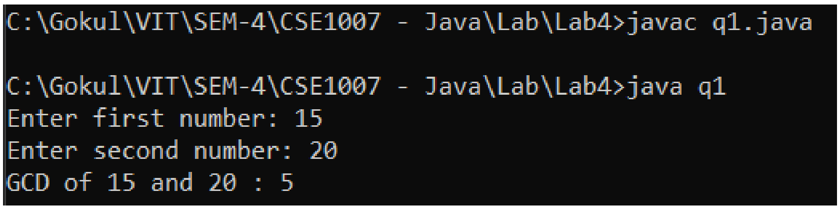
```
import java.util.Scanner;

public class q1{

   public static int findGCD(int a, int b)
   {
      int i,min,GCD=1;
      min = (a < b) ? a : b;
      for(i=2;i<=min;i++)
      {
         if(a%i==0 && b%i==0)
         GCD=i;
      }
      return GCD;
   }
   public static void main(String args[])
   {
      Scanner in = new Scanner(System.in);
      System.out.print("Enter first number: ");
      int n1=in.nextInt();
      System.out.print("Enter second number: ");
      int n2=in.nextInt();
```

```
        System.out.println("GCD of "+n1+" and "+n2+" : "+findGCD(n1,n2));
    }
}
```

OUTPUT:



```
C:\Gokul\VIT\SEM-4\CSE1007 - Java\Lab\Lab4>javac q1.java

C:\Gokul\VIT\SEM-4\CSE1007 - Java\Lab\Lab4>java q1
Enter first number: 15
Enter second number: 20
GCD of 15 and 20 : 5
```

Question 2

Travel Tickets Company sells tickets for airlines, tours, and other travel-related services. Because long numbers have often been entered incorrectly by agents, Travel Tickets has asked you to code a JAVA program that will indicate if a ticket number entry is invalid. Ticket numbers are 11 digits long. Ticket numbers are designed such that if you drop the last digit of the number, then divide the 10-digit number by 7, the remainder of the division will be identical to the last dropped digit. If ticket number is 10-digits, include the 11th digit or if it is 11-digit long, check for the validity. If the ticket number is any other length, your program should prompt the agent to check and re-enter the ticket number. Include a method **isValidTicket()** that return either true or false depending on the validity of the ticket.

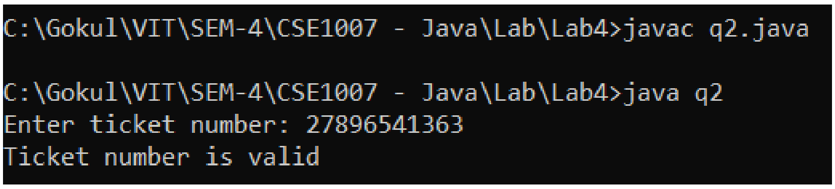
CODE:

```
import java.util.Scanner;


public class q2{


    public static boolean isValidTicket(long tID)
    {
        int flag=0;
        String str = String.valueOf(tID);
        if(str.length()==11)
        {
            long lastDigit = tID%10;
            long n = tID/10;
            if(lastDigit==n%7)
            flag=1;
        }
        if(flag==1)
        return true;
        else
        return false;
    }
    public static void main(String args[])
    {
        Scanner in = new Scanner(System.in);
            System.out.print("Enter ticket number   : ");
        long n=in.nextLong();
        String s = String.valueOf(n);
        if(s.length()==10)
        {
            n=(n*10)+(n%7);
            System.out.println("11 Digit Ticket number: "+n);
        }
        if(isValidTicket(n))
        System.out.println("Ticket number is valid");
        else
        System.out.println("Kindly check and renter the ticket number");
    }
}
```

OUTPUT:



```
C:\Gokul\VIT\SEM-4\CSE1007 - Java\Lab\Lab4>javac q2.java

C:\Gokul\VIT\SEM-4\CSE1007 - Java\Lab\Lab4>java q2
Enter ticket number: 27896541363
Ticket number is valid
```

<u>Question 3</u>

Assume that you have a list of words and you wish to find how many words are palindrome in the list. Devise a JAVA program that reads several words and displays the palindrome words and count of such words. Your program should have two methods namely

String reverseString(String) and **boolean isPalindrome(String)**.

Hint: A word is palindrome if its reverse is same as the original.

CODE:

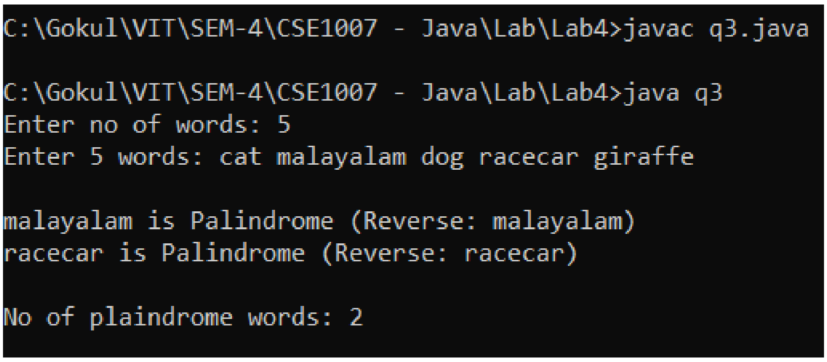
```
import java.util.Scanner;

public class q3{

    public static String reverseString(String str)
    {
        String rev="";
        char ch;
        for (int i=str.length()-1; i>=0; i--)
        {
            ch= str.charAt(i);
            rev+=ch;
        }
        return rev;
    }

    public static boolean isPalindrome(String s){
        if(s.equals((reverseString(s))))
        return true;
        else
        return false;
    }
    public static void main(String args[])
    {
        Scanner in = new Scanner(System.in);
        int n,i,c=0;
        System.out.print("Enter no of words: ");
        n=in.nextInt();
        String words[]=new String[n];
        System.out.print("Enter "+n+" words: ");
        for(i=0;i<n;i++)
        words[i]=in.next();
        System.out.println();
        for(i=0;i<n;i++)
        {
            if(isPalindrome(words[i]))
            {
                c++;
                System.out.println(words[i]+" is Palindrome (Reverse: 
"+reverseString(words[i])+")");
            }
        }
        if(c>0)
        System.out.println("\nNo of plaindrome words: "+c);
        else
        System.out.println("\nNo plaindrome words found");
    }
}
```

OUTPUT:



```
C:\Gokul\VIT\SEM-4\CSE1007 - Java\Lab\Lab4>javac q3.java

C:\Gokul\VIT\SEM-4\CSE1007 - Java\Lab\Lab4>java q3
Enter no of words: 5
Enter 5 words: cat malayalam dog racecar giraffe

malayalam is Palindrome (Reverse: malayalam)
racecar is Palindrome (Reverse: racecar)

No of plaindrome words: 2
```