Program Code:

```
import java.util.Scanner;
import java.net.InetAddress;

import java.util.*;
import java.io.*;

public class SUB {

   public static void main(String[] args) {
      Scanner s1 = new Scanner(System.in);
      String ipadd = "";
      System.out.print("Enter IP Address: ");

      ipadd = s1.nextLine();

      String splitip[] = ipadd.split("\\.");

      // convert binary
      String binip = "";
      for (int i = 0; i < 4; i++) {
         splitip[i] = appendZeros(Integer.toBinaryString(Integer.parseInt(splitip[i])));
         binip += splitip[i];
      }

      System.out.println("Binary is : " + binip);

      System.out.print("Enter CIDR bits: ");
      int cidr = s1.nextInt();
      int bits = 8 - (cidr % 8);
      int total_address = (int) Math.pow(2, bits);
      getsubnet(cidr);

      // convert binary
      int firstaddbint[] = new int[32];
      int lastaddbint[] = new int[32];

      for (int i = 0; i < 32; i++) {
         firstaddbint[i] = binip.charAt(i) - 48;
         lastaddbint[i] = binip.charAt(i) - 48;
      }

      // anding

      for (int i = 31; i > 31 - bits; i--) {
         firstaddbint[i] = firstaddbint[i] & 0;
      }
```

```
// move this to a string array
String ipinBin[] = { "", "", "", "" };
for (int i = 0; i < 32; i++) {
   ipinBin[i / 8] = new String(ipinBin[i / 8] + firstaddbint[i]);
}

// move this to a string

String LastipGrp[] = { "", "", "", "" };
for (int i = 0; i < 32; i++) {
   LastipGrp[i / 8] = new String(LastipGrp[i / 8] + lastaddbint[i]);
}

System.out.print("How many subnets you want to form: ");
int scont = s1.nextInt();
System.out.print("Group 1 First Address: ");
// cnvrt in decimal
int LastipGrpinDec[] = new int[4];
for (int i = 0; i < 4; i++) {
   LastipGrpinDec[i] = Integer.parseInt(LastipGrp[i], 2);
   System.out.print(LastipGrpinDec[i]);
   if (i != 3) {
      System.out.print(".");
   }
}

System.out.print("\nGroup 1 Last Address: ");
// convert to a decimal value
int FirstAddGrp[] = new int[4];
for (int i = 0; i < 4; i++) {
   FirstAddGrp[i] = Integer.parseInt(ipinBin[i], 2);
   System.out.print(FirstAddGrp[i]);
   if (i != 3) {
      System.out.print(".");
   }
}

// get last

for (int i = 31; i > 31 - bits; i--) {
   lastaddbint[i] = lastaddbint[i] | 1;
}
System.out.println("");

for (int j = 1; j < scont; j++) {
   System.out.print("\nGroup " + (j + 1) + " First Address : ");
```

```
            for (int i = 0; i < 4; i++) {
                if (i < 3) {
                    System.out.print(FirstAddGrp[i] + ".");
                } else {
                    System.out.print(FirstAddGrp[i] = FirstAddGrp[i] + total_address);
                }
            }
            System.out.print("\nGroup " + (j + 1) + " Last Address : ");

            for (int i = 0; i < 4; i++) {
                if (i < 3) {
                    System.out.print(LastipGrpinDec[i] + ".");
                } else {
                    System.out.print(LastipGrpinDec[i] = LastipGrpinDec[i] + total_address);
                }
            }
        }

    }

    private static void getsubnet(int cidr) {
        // TODO Auto-generated method stub

        int x = cidr % 8;
        int t = 8 - x;
        int a = 1;
        int lastbit = 0;
        while (a <= x) {
            lastbit += Math.pow(2, t);
            t++;
            a++;
        }
        String subnemask = "255.255.255.";

        subnemask += String.valueOf(lastbit);

        System.out.println("Subnet is : " + subnemask);
    }

    private static String appendZeros(String binaryString) {
        // TODO Auto-generated method stub
        String temp = "00000000";
        return temp.substring(binaryString.length()) + binaryString;
    }

}
```

Output:

Enter IP Address: 192.36.3.5

Binary is : 11000000001001000000001100000101

Binary is : 11000000001001000000001100000101

Enter CIDR bits: 2

Subnet is : 255.255.255.192

How many subnets you want to form: 2

Enter CIDR bits: 2

Subnet is : 255.255.255.192

How many subnets you want to form: 2

Subnet is : 255.255.255.192

How many subnets you want to form: 2

Group 1 First Address: 192.36.3.5

Group 1 Last Address: 192.36.3.0

Group 2 First Address : 192.36.3.64

Group 2 Last Address : 192.36.3.69