Assignment 5 Solution

Questions with Answers:

1. Write a menu driven program to accept a number and check and display whether it is **prime** number or not, OR an **automorphic** number or not. (Use switch-case statement).

Ans:

```
import java.util.*;
class primeauto
{
   public static void main(String[] Args)
   {
      int c=0,sqr,ch,i;
      Scanner sc= new Scanner(System.in);
      System.out.println("1. Prime ");
      System.out.println("2. Automorphic");
      System.out.println("Enter the choice from the above two");
      ch=sc.nextInt();
      System.out.println("Enter a number to check");
      int n=sc.nextInt();
      switch(ch){
      case 1:
         for(i=1;i<=n;i++){
         if(n%i==0)
            c++;
        }
         if(c==2)
            System.out.println("Prime Number");
         else
            System.out.println("Not a prime number");
        break;
      case 2:
        sqr=n*n;
        int t=n;
        do {
          c++;
          t=t/10;
        }while(t>0);
        double lastsquaredigits = sqr%(Math.pow(10,c));
        if(n==lastsquaredigits)
          System.out.println("Automorphic Number");
      else
         System.out.println("Not a Automorphic number");
      break;
      default:
       System.out.println("Wrong Choice");
   }
}
}
```

2. Write a menu driven program to accept a number from the user and check whether it is a 'BUZZ' number or to accept any two numbers and print the GCD of them.

Ans:

```
import java.util.*;
class buzzgcd
{
   public static void main(String[] Args)
   {
      int c=0,sqr,ch,i;
      Scanner sc= new Scanner(System.in);
      System.out.println("1. Buzz Number ");
      System.out.println("2. GCD of two numbers");
      System.out.println("Enter the choice from the above two");
      ch=sc.nextInt();
      switch(ch){
      case 1:
      System.out.println("Enter the number to check");
      int n=sc.nextInt();
         if(n%7==0 || n%10==7)
            System.out.println("Buzz Number");
         else
            System.out.println("Not a Buzz Number");
      break;
      case 2:
        int a,b,sm,hcf=0;
        System.out.println("Enter two numbers");
        a= sc.nextInt();
        b= sc.nextInt();
        sm = (a<b)?a:b;
      for(i=1;i<=sm;i++)
      {
         if(a%i==0&&b%i==0)
         {
            hcf= i;
         }
      }
      System.out.println("GCD is "+hcf);
      break;
      default:
         System.out.println("Wrong Choice");
   }
}
```

3. Write a menu driven class to accept a number from the user and check whether it is Palindrome or a Perfect number.

```
import java.util.*;
class palinperfect {
   public static void main(String[] Args) {
      int ch,i;
      Scanner sc= new Scanner(System.in);
      System.out.println("1. Perfect Number");
      System.out.println("2. Palindrome Number");
      System.out.println("Enter the choice from the above two");
      System.out.println("Enter the number to check");
      int n=sc.nextInt();
      ch=sc.nextInt();
      switch(ch){
      case 1:
         int s=0;
         for(i=1;i<n;i++) {
          if(n%i==0)
            s=s+i;
         }
         if(s==n)
           System.out.println("Perfect Number");
         else
          System.out.println("Not a perfect number");
      break;
      case 2:
         int d,r=0;
        int t=n;
      do{
         d=n%10;
         r=r*10+d;
         n=n/10;
      }while(n>0);
       if(t==r)
         System.out.println("Palindrome Number");
      else
         System.out.println("Not a Palindrome Number");
      break;
      default:
         System.out.println("Wrong Choice");
   }
}
}
```

4. State one similarity and one difference between while and do-while loop.

Ans: Similarity between while and for loop: Both check condition before entering body of the loop. Difference between while and for loop: - for loop has all three component written together, while has only condition with the statement.

5. What will be the output of the following code?

```
int a=10, b=15;
for(int i = 0; i<6; i++, a++)
  a = a +3;
   b--;
System.out.println("a = " + a);
    System.out.println("b = " + b);
```

Ans:

```
Value of 'a' when i is 0 = 13

Value of 'a' when i is 1 = 17

Value of 'a' when i is 2 = 21

Value of 'a' when i is 3 = 25

Value of 'a' when i is 4 = 29

Value of 'a' when i is 5 = 33

a = 34

b = 14
```