```
/**
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* Exercise 02
*/
```

## 2.1

**Source Code**

**Exchange.java**

```
import java.util.Scanner; // Scanner is in the java.util package

public class Exchange {
   public static void main(String[] args) {
       // Create a Scanner object
       Scanner input = new Scanner(System.in);

       // Prompt the user to enter a rate
       System.out.print("Enter the exchange rate from dollars to
RMB: ");
       double rate = input.nextDouble();

       System.out.print("Enter 0 to cenvert dollars to RMB and 1
vice versa: ");
       int mode = input.nextInt();

       if (mode == 0) {
          System.out.print("Enter the dollar amount: ");
          double dollor = input.nextDouble();
          double result = dollor * rate;

          // Display result
          System.out.println("$" + dollor + " is " + result + "
yuan");

       } else if (mode == 1) {
          System.out.print("Enter the RMB amount: ");
          double rmb = input.nextDouble();
          double result = rmb / rate;
          // Display result
          System.out.println(rmb + " yuan is $" +
String.format("%.2f", result));

       }

       input.close();
```

```
    }
}
```

**Result**

```
Demo1:
Enter the exchange rate from dollars to RMB: 6.81
Enter 0 to cenvert dollars to RMB and 1 vice versa: 0
Enter the dollar amount: 100
$100.0 is 681.0 yuan
Demo2:
Enter the exchange rate from dollars to RMB: 6.81
Enter 0 to cenvert dollars to RMB and 1 vice versa: 1
Enter the RMB amount: 10000
10000.0 yuan is $1468.43
```

## 2.2

**Source Code**

**Quiz.java**

```
import java.util.Scanner; // Scanner is in the java.util package
import java.util.Random;

public class Quiz {
   public static void main(String[] args) {
      // Create a Scanner object
      Scanner input = new Scanner(System.in);
      Random rand = new Random();
      int a=0,b=0,answer=0,operator=0;
      int num=0,r=0,w=0;
      System.out.println("Let's do quiz! ");
      do {
         num++;
         do {
            a = rand.nextInt(100);
            b = rand.nextInt(100);
            operator=rand.nextInt(2);
            if(operator==0){
               answer = a + b;
            }else if(operator==1){
               answer = a - b;
            }
         } while ((answer>100)||(answer<0));
         if(operator==0){
            System.out.println("No."+num+":"+a+" + "+b+" = ");
         }else if(operator==1){
            System.out.println("No."+num+":"+a+" - "+b+" = ");
```

```
            }
            int userAns = input.nextInt();
            if(userAns==answer){
               System.out.println("You are right! The answer is
"+answer+".");
               r++;
            }else{
               System.out.println("You are wrong! The right answer
is "+answer+".");
               w++;
            }
            System.out.println("Press c to continue. Press q to
quit.");
       } while (!(input.next().equals("q")));
       // Display result
       System.out.println("You have done "+num+" problems this
time. Right number: "+r+",wrong number: "+w+". The accuracy is
"+String.format("%.2f", ((float)r/num)*100.0)+"%.");

       input.close();
   }
}
```

**Result**

```
Let's do quiz!
No.1:86 - 42 = 44
You are right! The answer is 44.
Press c to continue,ress q to quit:c
No.2:96 - 75 = 21
You are right! The answer is 21.
Press c to continue,ress q to quit:c
No.3:3 + 19 = 22
You are right! The answer is 22.
Press c to continue,ress q to quit:c
No.4:41 - 18 = 29
You are wrong! The right answer is 23.
Press c to continue,ress q to quit:c
No.5:73 - 12 = 61
You are right! The answer is 61.
Press c to continue,ress q to quit:c
No.6:25 + 19 = 43
You are wrong! The right answer is 44.
Press c to continue,ress q to quit:q
You have done 6 problems this time. Right number: 4,wrong number:
2. The accuracy is 66.67%.
```

2.3

**Source Code**

**Tax.java**

```
import java.util.Scanner; // Scanner is in the java.util package

public class Tax {
   public static void main(String[] args) {
      // Create a Scanner object
      Scanner input = new Scanner(System.in);

      double tax=0;
      System.out.print("Enter the amount: ");
      double amount = input.nextDouble();
      if(amount<5000){
         tax=0;
      }else if(amount<8000){
         tax=(amount-5000)*0.03;
      }else if(amount<17000){
         tax=(amount-8000)*0.1+3000*0.03;
      }else if(amount<30000){
         tax=(amount-17000)*0.2+3000*0.03+9000*0.1;
      }else if(amount<40000){
         tax=(amount-30000)*0.25+3000*0.03+9000*0.1+13000*0.2;
      }else if(amount<60000){
         tax=(amount-
40000)*0.3+3000*0.03+9000*0.1+13000*0.2+10000*0.25;
      }else if(amount<85000){
         tax=(amount-
60000)*0.35+3000*0.03+9000*0.1+13000*0.2+10000*0.25+20000*0.3;
      }else if(amount>=85000){
         tax=(amount-
85000)*0.45+3000*0.03+9000*0.1+13000*0.2+10000*0.25+20000*0.3+250
00*0.35;
      }
      System.out.println("You need to pay tax:"+ tax+". Your real
salary:"+(amount-tax));
      input.close();
   }
}
```

**Result**

```
Demo1:
Enter the amount: 5600
You need to pay tax:18.0. Your real salary:5582.0
```

```
Demo2:
Enter the amount: 9600
You need to pay tax:250.0. Your real salary:9350.0
Demo3:
Enter the amount: 56000
You need to pay tax:10890.0. Your real salary:45110.0
```

## 2.4

Omit.

## 2.5

**Source Code**

**Palindromic.java**

```
import java.util.Scanner; // Scanner is in the java.util package

public class Palindromic {
   public static void main(String[] args) {
       // Create a Scanner object
       Scanner input = new Scanner(System.in);

       System.out.print("Input String for judgement: ");
       String word = input.next();
       String judge="?";

       for(int x=1;x<=word.length()/2;x++){
           if(word.charAt(x-1)==word.charAt(word.length()-x)){
               judge = "yes";
           }else{
               judge = "no";
               break;
           }
       }

       // Display result
       System.out.println(judge);

       input.close();
   }
}
```

**Result**

```
Input String for judgement: abcdefedcba
Yes
Input String for judgement: moon
No
```