When asked about the wonders of the world, Albert Einstein had an interesting answer – "Compound interest is the eighth wonder of the world. He who understands it, earns it ... he who doesn't ... pays it." Your assignment will help you better understand the significance of this observation.

Your assignment is write a program that has the following inputs:

- Annual deposit.
- Number of years to deposit.
- Number of years to calculate compound interest.
- Annual interest rate – in percent.

Your program, named Assignment3.java, has the following requirements:

- Display the "current year" for the calculations described below.
- Calculate the annual interest in a method named calcAnnualInterest. It should require two parameters, the amount on deposit, and the interest rate. The method should return a double containing the combined interest and principal for the given year.
- Display the cumulative annual deposits.
- Display the running total value of the accumulated principal and interest.
- Display a "Summary report" displaying the inputs and the total amount deposited and the total amount earned.

GRADING:

The total possible score for this program is 100 points.

The following point values will be deducted for the reasons stated:

| | |
|---|---|
| -100 points | The program does not successfully compile from the command line |
| -90 points | The program does not run from the command line without error or produces no output. |
| -70 points | The program compiles, runs, and collects no inputs from the user or crashes thereafter or produces no output. |
| -50 points | The program compiles, runs, collects the inputs, and produces no output. The program does NOT contain the specified method, calcAnnualInterest. (NB This includes the case where less than the specified number of years data is output.) |
| -25 points | The program compiles, runs, collects the inputs, and produces the incorrect output. Incorrect output includes errors in the calculations, incorrect years of deposit, or errors in the amount deposited. Please note that calculating a deposit for every year instead of the "years to deposit" falls in this category. |
| -10 points | There are data formatting errors. |
| no deductions | The program compiles, runs, collects the correct number of inputs, and generates the correct outputs (see the following page for a *minimal* example). |

Additional notes:

Any loop structure is acceptable.

```
$java Assignment3<Asgn3Inputs  //This redirects input from the file Asgn3Inputs
Total years:Deposit years:Annual interest rate:Yearly deposit:
      year: 1 ; Deposited:    5,000 | Earned:        5,250.00
      year: 2 ; Deposited:   10,000 | Earned:       10,762.50
      year: 3 ; Deposited:   15,000 | Earned:       16,550.63
      year: 4 ; Deposited:   20,000 | Earned:       22,628.16
      year: 5 ; Deposited:   25,000 | Earned:       29,009.56
      year: 6 ; Deposited:   30,000 | Earned:       35,710.04
      year: 7 ; Deposited:   35,000 | Earned:       42,745.54
      year: 8 ; Deposited:   40,000 | Earned:       50,132.82
      year: 9 ; Deposited:   45,000 | Earned:       57,889.46
      year:10 ; Deposited:   50,000 | Earned:       66,033.94
      year:11 ; Deposited:   50,000 | Earned:       69,335.63
      year:12 ; Deposited:   50,000 | Earned:       72,802.41
      year:13 ; Deposited:   50,000 | Earned:       76,442.54
      year:14 ; Deposited:   50,000 | Earned:       80,264.66
      year:15 ; Deposited:   50,000 | Earned:       84,277.90
      year:16 ; Deposited:   50,000 | Earned:       88,491.79
      year:17 ; Deposited:   50,000 | Earned:       92,916.38
      year:18 ; Deposited:   50,000 | Earned:       97,562.20
      year:19 ; Deposited:   50,000 | Earned:      102,440.31
      year:20 ; Deposited:   50,000 | Earned:      107,562.32
      year:21 ; Deposited:   50,000 | Earned:      112,940.44
      year:22 ; Deposited:   50,000 | Earned:      118,587.46
      year:23 ; Deposited:   50,000 | Earned:      124,516.84
      year:24 ; Deposited:   50,000 | Earned:      130,742.68
      year:25 ; Deposited:   50,000 | Earned:      137,279.81
      year:26 ; Deposited:   50,000 | Earned:      144,143.80
      year:27 ; Deposited:   50,000 | Earned:      151,350.99
      year:28 ; Deposited:   50,000 | Earned:      158,918.54
      year:29 ; Deposited:   50,000 | Earned:      166,864.47
      year:30 ; Deposited:   50,000 | Earned:      175,207.69
 50,000.00 dollars were deposited over 10 years. (5,000 per year)
Those deposits earned 5.00 percent interest for 30 years
```

**NOTE:** The input file, Asgn3Inputs, has four numbers in a “flat ASCII” file. They are the inputs IN THE SAME ORDER, one number per line, as the program asks, i.e. Total years, Deposit years, Interest rate, and Annual deposit.