WORKSHEET 06A – In class on week 3 day 1

Investment: Write a console program to use **while loop**:

This class is to keep the balance of an investment and estimate the number of years a target to be reached

- Download to your project the Investment.java and InvestmentRunner.java files
- Run **InvestmentRunner** to be familiar with the program
- Study the source code *Reminder*:
 - 3 main parts a class (Investment): fields aka instance variables, constructors, methods
 - using a class (in InvestmentRunner): create an object by declaring it with the class and calling the constructor, then "ask" the object to do things by calling methods of the class
- Use the debugger:
 - o Before the run, set 2 breakpoints:
 - in **InvestmentRunner**, *after* object invest is created (to observe its contents during the run)
 - in Investment, in method waitForBalance, at the beginning of the loop (to observe the changes of values during the run)
 - o Run InvestmentRunner, and click "Continue" in the Debugger when you want to go until the next breakpoint stop:
 - At the 1st breakpoint, what are the values of the fields in object invest?
 - At the 2nd breakpoint, when field years is 0, what is the value of local variable curBal?
 - Same question as above, when field years is 1, 2, 5, 7?
- Clear all breakpoints
- Change the initial amount and/or interest rate in **InvestmentRunner**, and run again a few times to "play" around.

```
    Check the loop condition

                                                                The condition is true
                              while (balance < targetBalance)</pre>
    balance = 10000
                                 years++;
                                 double interest = balance * rate / 100;
      vears =
                                  halance = halance + interest:
Execute the statements in the loop
                              while (balance < targetBalance)
    balance = 10500
                                  double interest = balance * rate / 100;
      vears =
                                  balance = balance + interest;
    interest = 500
3 Check the loop condition again
                                                              The condition is still true
                              while (balance < targetBalance)</pre>
    balance = 10500
                                  years++;
                                  double interest = balance * rate / 100;
      vears =
                                  balance = balance + interest;
4 After 15 iterations
                                                                  The condition is
                                                                   no longer true
                              while (balance < targetBalance)</pre>
    balance = 20789.28
                                  double interest = balance * rate / 100:
      years =
                  15
                                 balance = balance + interest;
5 Execute the statement following the loop
                              while (balance < targetBalance)
    balance = 20789.28
                                  double interest = balance * rate / 100;
                                 balance = balance + interest:
                              System.out.println(years);
```

	Do pair programming for the following problems, switching every 7 minutes.
2	Do the following programing exercises, as follows:
	Go to the link
	Do work in BlueJ
	Submit your work in codecheck
	Save the result of your submission, which includes your work and "Scores"
	& value (which should be 100%) by doing the following:
	o "Print screen", or copy the screen with the Snipping Tool
	o Save it to a Word file
	Save the text from your source file for your own use
	• Submit the Word file (with <i>all</i> results you save in the previous step) &
	show on the screen in class
	• EvenSum:
	http://codecheck.it/codecheck/files?repo=bj4cc&problem=ch06/c06_exp_6_102 Hint: use % to check whether an integer is even
	• Format phone number:
	http://codecheck.it/codecheck/files?repo=bj4cc&problem=ch06/c06_exp_6_106
	http://codecheek.ti/codecheek/thes/tepo=bj4cc&problem=choo/coo_exp_o_too
	• Copy the source code from each other to keep – each student must have the
	working code.
	 Submit online.
	- Submit diffine.

THE END

6.1-6.4