CIS331 Fall 2018
HW3: Student Grade Simulator

Scenario: You are to write a small program in Java that will simulate five homework grades for a certain number of students. The program will randomly create the grades for each assignment, for each student, and calculate the average of all the grades for each student AND the average of each assignment across students.

Requirements:

- You will need to use a nested for loop and a switch statement in this assignment, to demonstrate your comfort with these loop structures.
- Do not use any materials from Ch. 6 or later (Methods, Arrays, etc.) You won't need them!
- You will need to use Math.random( ) to generate random grades for each assignment. Chapter 4 in section 4.3.2 goes into detail how to use this method. Keep the possible range of grade values between 30 and 100 for each assignment.
- Use sufficient commenting in your code but not excessive.
- Do not change the name of your .java file once you have exported!
- On this assignment and future ones, you will need to start placing a comment header at the top of your .java file. Include your name, date, and purpose of assignment.
- You should try to match the neat and professional formatting as seen in my output below. This will require the use of escaped characters and the .printf( ) method as used in Chapter 4.
- I have included 2 output runs on the next few pages. The user can run the simulation and type in the number of students to generate grades for. The grades should be generated anew each time the program runs (meaning: don't hard-code any grades in – use .random() to generate them!)

Due: **Friday, Sept. 21st by 11:59 p.m.**
Worth: **20 Points**

```
run:
Enter number of students to simulate: 15

Beginning Simulation:
==============================
```

Name:	HW1	HW2	HW3	HW4	HW5	Average:
Student #1:	40	53	74	41	77	57.00
Student #2:	70	59	79	44	64	63.20
Student #3:	34	57	49	79	33	50.40
Student #4:	41	31	72	39	31	42.80
Student #5:	75	39	49	61	42	53.20
Student #6:	65	75	70	52	36	59.60
Student #7:	55	42	75	75	58	61.00
Student #8:	77	54	54	64	38	57.40
Student #9:	63	31	79	75	76	64.80
Student #10:	78	58	75	47	45	60.60
Student #11:	32	34	48	74	50	47.60
Student #12:	48	47	56	62	41	50.80
Student #13:	37	44	38	56	39	42.80
Student #14:	66	32	44	48	76	53.20
Student #15:	79	55	73	57	33	59.40
Averages:	57.33	47.40	62.33	58.27	49.27	

```
Simulation finished!
```

```
Enter number of students to simulate: 345

Beginning Simulation:
=============================
Name:            HW1     HW2     HW3     HW4     HW5     Average:
-----------------------------------------------------------------
Student #1:      57      79      69      64      49      63.60
Student #2:      68      76      55      40      32      54.20
Student #3:      56      39      33      58      78      52.80
Student #4:      38      68      68      56      65      59.00
Student #5:      37      68      36      70      58      53.80
Student #6:      46      58      65      77      44      58.00
Student #7:      52      46      73      73      55      59.80
Student #8:      41      31      43      31      59      41.00
Student #9:      79      63      50      32      48      54.40
Student #10:     42      44      63      43      52      48.80
Student #11:     64      66      31      37      56      50.80
.
.
```

Some lines of output omitted for space . . .

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Student #338:    65      47      67      77      76      66.40
Student #339:    31      40      46      77      72      53.20
Student #340:    35      60      42      54      56      49.40
Student #341:    61      53      75      30      31      50.00
Student #342:    52      41      45      53      69      52.00
Student #343:    35      37      38      55      51      43.20
Student #344:    58      35      73      48      67      56.20
Student #345:    66      37      56      65      48      54.40
-----------------------------------------------------------------
Averages:        54.13   53.91   53.29   53.57   55.20
-----------------------------------------------------------------
Simulation finished!
```