Snooze++: Day Two!

Today's Schedule

9:00 - 11:45	• Loops Lesson
	• Complete Game Plan: Control Flow
	  ○ While Loops
	  ○ For Loops
	  ○ ** Optional: Jump Statements
	  ○ ** Optional: Switch Statements
	  ○ Random Numbers
	• Read and Complete Worksheet Section I
	• File Stream Lesson

11:45 - 1:00	• Lunch

1:00 - 2:30	• Complete Game Plan: Control Flow
	  ○ Reading and Writing to a File
	• Read and Complete Worksheet Section II
	• Complete Game Plan: Text Tournament Turbo
	  ○ Text Tournament Turbo
	  ○ Loading the Fighters
	  ○ Fight!

2:30 - 3:30	• Outdoor Break

3:30 - 4:45	• Complete Game Plan: Text Tournament Turbo
	  ○ Saving the Record
	• Arrays, Vectors Lesson
	• Complete Game Plan: Containers
	  ○ Arrays
	  ○ String Operators
	  ○ Vectors
	  ○ Vector Functions
	• Read and Complete Worksheet Section III

I. Challenge One: Loops

Practice using both while and for loops!

1. Print the first 10 positive even integers using a loop.
2. Find the sum of the first 20 positive integers using a loop.
3. Find the average of 10 numbers random numbers between 1 to 20 using a loop. (*Hint: The average is the sum of the 10 numbers divided by 10. Remember the difference between* ***float*** *and* ***int****!*)

4. **Bonus Challenge**: Find the smallest and largest number out of 10 numbers that the user inputs. (*Hint: Use cin. Use at least 2 variables: 1 to store the largest number, and 1 to store the smallest number.*)
5. **Bonus Challenge**: Print the first 20 Fibonacci numbers. Fibonacci numbers are the following sequence: 1, 1, 2, 3, 5, 8, 13, 21, …, where each following term is the sum of the previous 2 terms. (*Hint: Use a variable to keep track of the previous terms!)*
6. **Bonus Challenge **HARD**:** Print the first 50 prime numbers. You should *not* be manually entering them in or calculating them manually -- have the computer program do this. (*Hint: You may need nested loops. You may also want to use modula %)*.

II. Challenge Two: File Streams

1. Write a program that creates a new text file called “cat.txt”.
2. Write out “mao mao” into the file.
3. Read in what the file “cat.txt” says and print it out onto the screen.
4. Raise your flag and check with me after this point!

III. Challenge Three: Arrays and Vectors

1. Create an array “**nums**” and store the first 10 positive integers into the array. Write a statement that checks to see if the number 5 is in **nums**.
2. Create a vector “**names**” and store the names of 5 of your classmates into the vector.
    a. Print out the 2nd name in **names**.
    b. Add the name “Snooze” to **names**.
    c. Remove the first name of **names**.
    d. Print out all the names in **names**.

Congrats on finishing Day Two! See you tomorrow!