Numbers to Words

This project will deal with conditionals, loops, and random numbers.

Turn in

- On Titanium:
    - Your .cpp file
    - Screenshot(s) of 5 runs of your program
- In class: These same two documents, printed and stapled

Rules

- If your solution uses arrays then it must not use loops (i.e., it must be fully recursive).

- Functions are optional, but recommended.

- Please try to design the algorithm on your own, or with other students, or with help from us.

- You may, randomly, be required to explain and justify your algorithm, and any code you write. If you're worried you might forget something, please comment your code so that you don't.

Suggestions

- Look up the `rand()` and `srand()` functions.

- Recall the modulus operator (`%`), integer division, and switch statements.

- Think carefully about which type of loop would most cleanly do what you want. If you're not sure, and you have time, try all three.

- Don't be afraid to use the member functions of `std::string`, if you need them: http://en.cppreference.com/w/cpp/string/basic_string.

- Be sure to include the header files declaring the functions that you're trying to use!

Requirements

In comments at the top of your code, please include:

- Your name.

- The assignment (i.e., "Project 4").

- Your development environment (including version number).

- A list of any nontrivial references you consulted while writing your solution.

- A list of any notes you have regarding the assignment or your solution.
  - This should include a short discussion of any issues you ran into while using `rand()`, or testing your program. Are there any limitations of `rand()` that you happened to notice?

- A pseudocode description of your algorithm, written as if to explain your ideas to an average classmate without previous knowledge of the assignment.

Your code must:

- Use standard C++ functions to obtain two pseudo-random integers that are *not* the same on every run of the program.
  - The first should be called `start`, and should be between -2^{31} and $2^{31} - 1$, inclusive.
  - The second should be called `offset`, and should be between 2 and 8, inclusive.

- Print out a message indicating the value of `start`.

- Print out a message indicating the value of `offset`.

- Print out (each on its own line) the English form of the integer `start`, and every third integer after that until `offset` integers have been printed.

Sample Screenshot

```
● ● ●                          📁 project-4 — bash — 109×53                                  ⤢

ben@ben-mba:~/Desktop/project-4$ clang++ solution--project-4--num2word.cpp -o solution
ben@ben-mba:~/Desktop/project-4$ ./solution
start: -2056552056
offset: 8
negative two billion fifty six million five hundred fifty two thousand fifty six
negative two billion fifty six million five hundred fifty two thousand fifty three
negative two billion fifty six million five hundred fifty two thousand fifty
negative two billion fifty six million five hundred fifty two thousand forty seven
negative two billion fifty six million five hundred fifty two thousand forty four
negative two billion fifty six million five hundred fifty two thousand forty one
negative two billion fifty six million five hundred fifty two thousand thirty eight
negative two billion fifty six million five hundred fifty two thousand thirty five
ben@ben-mba:~/Desktop/project-4$ ./solution
start: 474018907
offset: 5
four hundred seventy four million eighteen thousand nine hundred seven
four hundred seventy four million eighteen thousand nine hundred ten
four hundred seventy four million eighteen thousand nine hundred thirteen
four hundred seventy four million eighteen thousand nine hundred sixteen
four hundred seventy four million eighteen thousand nine hundred nineteen
ben@ben-mba:~/Desktop/project-4$ ./solution
start: 1321444654
offset: 8
one billion three hundred twenty one million four hundred forty four thousand six hundred fifty four
one billion three hundred twenty one million four hundred forty four thousand six hundred fifty seven
one billion three hundred twenty one million four hundred forty four thousand six hundred sixty
one billion three hundred twenty one million four hundred forty four thousand six hundred sixty three
one billion three hundred twenty one million four hundred forty four thousand six hundred sixty six
one billion three hundred twenty one million four hundred forty four thousand six hundred sixty nine
one billion three hundred twenty one million four hundred forty four thousand six hundred seventy two
one billion three hundred twenty one million four hundred forty four thousand six hundred seventy five
ben@ben-mba:~/Desktop/project-4$ ./solution
start: 586337252
offset: 7
five hundred eighty six million three hundred thirty seven thousand two hundred fifty two
five hundred eighty six million three hundred thirty seven thousand two hundred fifty five
five hundred eighty six million three hundred thirty seven thousand two hundred fifty eight
five hundred eighty six million three hundred thirty seven thousand two hundred sixty one
five hundred eighty six million three hundred thirty seven thousand two hundred sixty four
five hundred eighty six million three hundred thirty seven thousand two hundred sixty seven
five hundred eighty six million three hundred thirty seven thousand two hundred seventy
ben@ben-mba:~/Desktop/project-4$ ./solution
start: -1716238248
offset: 8
negative one billion seven hundred sixteen million two hundred thirty eight thousand two hundred forty eight
negative one billion seven hundred sixteen million two hundred thirty eight thousand two hundred forty five
negative one billion seven hundred sixteen million two hundred thirty eight thousand two hundred forty two
negative one billion seven hundred sixteen million two hundred thirty eight thousand two hundred thirty nine
negative one billion seven hundred sixteen million two hundred thirty eight thousand two hundred thirty six
negative one billion seven hundred sixteen million two hundred thirty eight thousand two hundred thirty three
negative one billion seven hundred sixteen million two hundred thirty eight thousand two hundred thirty
negative one billion seven hundred sixteen million two hundred thirty eight thousand two hundred twenty seven
ben@ben-mba:~/Desktop/project-4$ ▐
```