CS 451
Programming Assignment #1
Imperative programming: Basic
Due 1/29/16, by 6:00am sharp!

Introduction

The goal of this assignment is to get acquainted with the imperative programming language, Basic. While it lacks many modern control and data structures, Basic exemplifies the use of imperatives including its goto and gosub.

This assignment is inspired by the game Adventure (check out https://en.wikipedia.org/wiki/Colossal_Cave_Adventure) where the player tries to escape the cave alive with all the treasures. The assignment also finds inspiration in a common need of many a traveler in Europe. Your goal of this assignment is to implement the game “Find the WC.”

The Game

The “maze” is an old manor house (think Scooby Doo) shown in the figure below. Navigation is done by entering “1” for North, “2” for East, “3” for South, and “4” for West. Other values, as well as impossible moves, should generate an error message and then re-prompt the user. The player’s goal is to navigate through the house to find the WC.

The “maze”

In keeping with the era, I’m doing this in ASCII art (https://en.wikipedia.org/wiki/ASCII_art).

```
<table>
<thead>
<tr>
<th></th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door 1</td>
<td>H 2</td>
</tr>
<tr>
<td></td>
<td>^</td>
</tr>
<tr>
<td>Bedroom 3</td>
<td>Kitchen 4 W &lt; + &gt; 2 E</td>
</tr>
<tr>
<td></td>
<td>v</td>
</tr>
<tr>
<td>WC 3 S</td>
<td>Parlor - Library</td>
</tr>
</tbody>
</table>
```

The Assignment

Implement “Find the WC” in Basic (I used http://www.calormen.com/jsbasic). Here is a partial transcript from my solution:

```
Welcome to find the WC!!
In each room you can go north, east, south, or west by entering 1, 2, 3, or 4.
You are at the Front Door
enter 1,2,3,4: 3
You are in the Hall
enter 1,2,3,4: 2
You are in the Kitchen
enter 1,2,3,4: 4
You are in the Hall
enter 1,2,3,4: 42
bad input! try again!
enter 1,2,3,4: ...
```

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Better answer will allow the user to keep exploring after finding the WC, but will not congratulate the users each time they reenter the WC.

More entertaining answers will have the “you won” message flash or be in color or ....

You solution must include at least one **goto**, one **gosub**, and one on **x goto** command (i.e., imperatives). Be sure to include good internal documentation using Basic’s **REM**ark statement.

**What to hand in**

(1) Email me your source as a single attachment named `<your name>.basic` by 6:00am on the due date.

Your program’s first line **must** be “10 REM This is my code” and its second your name.

**Notes**

Some web cites I found useful (available off the course web page)

- [http://www.calormen.com/jsbasic](http://www.calormen.com/jsbasic)