**Student Name/Grade: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Rubric:**

\_\_\_\_\_\_ / 20 Creates a random jump made up of the 38 formations

\_\_\_\_\_\_ / 5 No repeats

\_\_\_\_\_\_ / 10 Always 5 or 6 points

\_\_\_\_\_\_ / 5 Comments/variable names/style

\_\_\_\_\_\_ / 10 Assignment Submitted Correctly and on time

\_\_\_\_\_\_\_ Total

**Description:**

Write a program called jump\_generator\_lastname that creates a random, valid jump that could be used in competitive skydiving and prints it out. You **don’t need any input** from the user, and you **shouldn’t use a seed value** (otherwise it’ll print the same thing every time).

Here are the rules for skydiving:

Jumps are made up of 38 different formations called Blocks and Randoms. There are 22 Blocks (numbered 1-22), and there are 16 Randoms (labeled A-Q without an I, so A,B,C,D,E,F,G,H,J,K,L,M,N,O,P,Q). Blocks count for 2 points and Randoms count for 1 point. A jump is always either 5 or 6 points. Imagine you’re drawing the formations out of a hat, and the rule is you draw on 4 and hold on 5. That is, if the jump has 4 points already, you would always draw one more. If it has 5 points already, you stop and that would be it.

So, here are some valid jumps:

A-22-3 (5 points, 1-2-2)

2-5-18 (6 points, 2-2-2)

O-M-H-J-K (5 points, 1-1-1-1-1)

19-B-D-12 (6 points, 2-1-1-2)

Note: 6 Randoms in a row like A-B-C-D-E-F is impossible, since once you get to E you’d have 5 points and you’d stop.

Your job is to write a program that will print out a valid jump that is always either 5 or 6 points and doesn’t repeat anything. Make sure you separate the formations with a dash or a space or something, since “212QB” could be 2-12-Q-B or 21-2-Q-B (or 2-1-2-Q-B, which both has a repeat and is 8 points, so that’s totally wrong).

**A few hints:**

You definitely want a list to hold all the formations. You can use this one:

["1", "2", "3", "4", "5", "6", "7", "8", "9", "10", "11", "12", "13", "14", "15", "16", "17", "18", "19", "20", "21", "22", "A", "B", "C", "D", "E", "F", "G", "H", "J", "K", "L", "M", "N", "O", "P", "Q"]

Keep track of points. Which parts of the list are worth 2 points? Which parts are worth 1 point?

In order to avoid repeats, once something is selected I’d recommend replacing that space in the list with something like an ‘x’ and then writing code to skip that space if ‘x’ comes up again.

**What to do with it once you’re done (10 points)**

* Make sure you’ve commented confusing parts and included your block comment
* Email me a copy of your jump\_generator\_lastname.py file
  + The subject line MUST be “[ICS] Week 11 LastName”
  + MUST be turned in by the start of class on 10/30 or it’s late.