

CS 1301

## Individual: Homework 4 – American Idol Audition

Due: Friday February 13th, 2015

Out of 100 points

Files to submit: hw4.py

### This is an INDIVIDUAL assignment!

Collaboration at a reasonable level will not result in substantially similar code. Students may only collaborate with fellow students currently taking CS 1301, the TA's and the lecturer. Collaboration means talking through problems, assisting with debugging, explaining a concept, etc. You should not exchange code or write code for others.

### For Help:

- TA Helpdesk – Schedule posted on class website.
- Email TAs
- Instructor's office hours

### Notes:

- Don't forget to include the required comments and collaboration statement (as outlined on the course syllabus).
- Do not wait until the last minute to do this assignment in case you run into problems.
- If you find a significant error in the homework assignment, please let a TA know immediately.

Your robot is trying out for American Idol and needs your help. You need to help the robot come up with a couple of routines to have ready in case your robot makes it to Hollywood for the next rounds. Your robot's routines will be a combination of songs and dances. The robot does not need to sing and dance at the same time, just alternate between the two. (If you can make your robot sing and dance at the same time, go for it!) You can find a reference to Myro functions that will help you and your little robot to learn how to dance and sing here:

[http://calicoproject.org/Calico\\_Myro](http://calicoproject.org/Calico_Myro).

Your job is to help your robot come up with three distinct routines. Each should last at least **30 seconds**, and it should contain at least **two distinct dance moves** and at least **15 seconds of singing**. You will not receive credit if your robot simply goes back and forth for the entire dance. You are allowed (and encouraged) to make your own helper functions that contain individual dance moves. Singing does not include beeping in a single tone. Your robot should sing a "song" with a length of at least 15 notes/beeps and carry some sort of melody. The first routine will be used for part 1. The 2<sup>nd</sup> and 3<sup>rd</sup> routines will be used from within the menu of part 2.

## Part 1 Time to dance and sing for your 15 minutes of fame! (50 points)

Write your robot's audition dance and song as a function called **auditionRoutine()**.

So you've successfully helped your robot make it to Hollywood! You need a routine for the semi-final round (named **semiRound()**) and the final round (named **finalRound()**). Keep all the functions saved in a file called hw4.py. You will have points taken off if your functions and/or file are not named correctly.

## Part 2 Write Menu (50 points)

Now your robot needs help organizing its three routines into a menu for the next set of auditions. You've already written the routines, now you need to create the function for the menu. Name this function **routineMenu()**.

You will need to use conditionals ("if" statements) and a while loop to create a menu that gives the user 4 options. The first option should be the **audition routine**. It helped get the robot to Hollywood so maybe it will be useful again! The next two options will be **semiRound()** and **finalRound()** that you helped the robot create. The fourth option should be to **exit the program**. You can name the routines anything you want in the menu, but they should be called the correct name when defining them.

Here's an example of how routineMenu() might work. The user's input is shown in red.

1. Audition Routine
2. Blank Space
3. Party Rock Anthem
0. Exit

Which dance step/song would you like? **1**

**(The robot does its song and dance routine. The program doesn't show the menu again until the robot finishes moving for 30 seconds.)**

1. Audition Routine
2. Blank Space
3. Party Rock Anthem
0. Exit

Which dance step/song would you like? **5**

I'm sorry, that's not a valid choice

1. Audition Routine
2. Blank Space
3. Party Rock Anthem
0. Exit

Which dance step/song would you like? 0

**See you later!**

### Part 3 Turning It In

Once you are done, submit **hw4.py** to TSquare. Remember, if there are serious errors in a part of the homework, you will lose credit for that particular part. However, **if your file completely fails to run, it will not be graded and will receive an automatic zero.** Please test your code thoroughly before turning it in!

### Rubric

Part 1 Audition (50 points)

- Functions named correctly (auditionRoutine, semiRound, finalRound) 15pts (5 points each)
- Each routine is at least 30 seconds 10 points
- Each routine contains at least 2 different moves 10 points (5 points per move)
- Robot sings (basically it plays different notes) 15 points

Part 2 Write Menu (50 points)

- Function named correctly (routineMenu) 5 points
- Displays a menu with options 5 points
- Accepts input from the user 5 points
- Loops correctly 10 points
- Handles four cases with conditionals 15 points
- Exits correctly 10

You can earn up to 5 points bonus [discretion of the TAs] for extra creativity/general awesomeness, for a possible total of 105/100.