

## Web App Design and Development

### Case Study - Auditions

**Scenario:** A high school theater program auditions students for a musical each year. Students sign up to audition online in a form that stores their name, address, student id, audition id, contact information, gender, desired role(s) and experience. At auditions, students are broken up into three groups based on their audition id number - an auto assigned number determined when they sign up. Girls with last names A-L start at 100, girls with last names M-Z start at 200 and boys start at 300.

In order to make efficient, data driven decisions, the students are evaluated in three areas (singing, acting, dancing). There are a total of nine judges, with three focused on each area. Each area's form has 5-7 categories(which can change from time to time) in which the judges score the students from 1-5, with five being the highest. Additionally, there is an area for notes about the students audition.

When a judge logs in, they are taken to the appropriate screen (their assigned area) where there exists a drop down list of the audition numbers of all the students that have signed up. Selecting an audition number is part of the form that they complete. Once a student has been scored by that judge, the student audition number no longer appears in the future drop downs of that judge.

There are also admins in this system that are able to access reports of the data. One type of report that can be accessed is a table of rankings from top to bottom. There are several of these reports that can be ordered by a single category or a combination of category scores. For example, the admin may choose to see the list in order of dance scores, dance and singing scores, or overall combined score. An auditionees score in an area is the average of the three judges total scores from that area turned into a percentage. The other type of report is an individual student report. In this report, the admin can see the student's basic contact information as well as their scores for music, acting, dance and overall. Additionally, their overall ranking appears next to their score. In further iterations of this report, admins can actually drill down to see the scores and comments from each judge in each category, including their comments (not part of this exercise).

## Sample Auditionee Data:

auditionId,studentId,name,street,city,zip,home,cell,email, desired role, experience
100,51801,Althea Cantrell,Ap #136-5751 Quam Ave, Cambridge,566820,968-402-3772,456-862-1182,sit.amet@Aeneaneuismod.net, Alexi Darling or ensemble, four years in chorus and 2 previous shows as crew
101,65435,Jane Kocha,P.O. Box 840, 5647 Est Rd., Lolol,27502, 689-456-4745,641-654-1791, nisi@eget.org, ensemble, ensemble in all three middle school shows
102,26002,Sara Hitchell,P.O. Box 660, 5614 Cras St.,Saguenay,89210,460-747-4782,451-282-2010,Integer.eu@lobortisnisi.edu, Mimi or Maureen, ensemble in ITH; Jane in Tarzan; Amneris in Aida
103,64660,Molly Duffy,P.O. Box 462, 4681 Proin Av.,Bear,86129,328-574-9307,080-100-0247,fringilla@Curabiturut.co.uk, any lead female character or a lead dancer, Click on the link below for my resume
200,94731,Kiara Zepski,2842 Ipsum Ave,Antakya,07718,677-198-7007,244-107-2555,Etiam@Aeneaneget.org, dance captain, I have been in the last three plays but this will be my first musical
201,88986,Virginia Quinn,2732 Feugiat St.,Lakeshore,34193,954-586-6108,291-863-7387,ligula@orci.co.uk, maureen or joanne, I have been taking singing and dancing lessons since I was 5
300,26536,Marshall Simon,Ap #762-5901 Proin Rd.,Polino,34001,153-436-4622,967-543-5227,tristique.ac.eleifend@amet.ca, Mark;Roger;Angel;Benny;Collins, last year I was a member of both the fall show and musical
301,99352,Perry Morton,538-3449 Erat, Avenue,Lauw,47037,915-229-6446,622-641-4690,Nunc.sed@Curae.org, lead boy, I have performed in musicals at my summer camp for the past five years
302,85856,Ulrich Duffy,336-3653 Diam Street,Béziers,25360,604-812-5895,124-093-0517,Donec.egestas@egestas.org, Benny or Angel, middle school musical in 8th grade
303,98257,Hedwig Clay,Ap #597-1359 Lorem Road,Limón (Puerto Limón), 37888,749-882-1612,901-950-0118,cras.dolor@faucibusid.com, any lead or supporting, Benny in ITH; Tarzan in Tarzan; Radames in Aida; Ren in Footloose

## Sample Scoring Data (dance scores only for auditionees 100-103):

Aud #	Judge	Technique	Rhythm	Timing	Effort	Overall Impact	Notes
100	Judge1	5	4	5	5	5	Really good energy - seems like she could be a former dancer
100	Judge2	4	4	4	4	4	Good energy!
100	Judge3	4	5	4	5	5	Rock star.
101	Judge1	3	3	3	3	3	Going for it - Needs to loosen up in the face, though.
101	Judge2	5	4	5	4	4	
101	Judge3	3	3	3	2	4	Stiff. Drummer's rhythm. Potential
102	Judge1	2	2	3	2	2	Gets lost. minimal presence
102	Judge2	3	2	3	3	3	stiff
102	Judge3	2	1	3	2	2	Looked scared.
103	Judge1	4	3	4	3	4	Lots of potential. Rough though.
103	Judge2	3	3	3	4	4	Worker!
103	Judge3	4	5	3	4	3	really put in a lot of effort, not super coordinated

**Questions:**

1. Design the database and tables to be used in this application.
2. Pseudocode a program, including complete queries, that would generate the first type of report shown below (sorted by overall score)

Aud Num	Last Name	First Name	Gender	Overall	Acting	Music	Dance	Music/Acting	Music/Dance
103	Duffy	Molly	F	95	96	100	90	98	95
201	Quinn	Virginia	F	92	87	90	99	88.5	94.5
300	Simon	Marshall	M	90	92	98	79	95	88.5
100	Cantrell	Althea	F	85	96	86	74	91	80
302	Duffy	Ulrich	M	85	76	96	82	86	89
200	Zepski	Kiara	F	83	86	87	76	86.5	81.5
301	Morton	Perry	M	83	92	98	59	95	78.5
101	Kocha	Jane	F	81	83	64	97	73.5	80.5
303	Clay	Hedwig	M	80	88	92	61	90	76.5
102	Hitchell	Sara	F	79	71	79	87	75	83

3. Pseudocode a program, including complete queries, that would generate the second type of report, shown below.

Molly Duffy (103)  
ID: 64660  
fringilla@curabiturur.co.uk

4681 Proin Ave.  
Bear, 86129  
(h)328-574-9307  
(c)080-100-024

Music: 100% (1/54)
Acting: 96% (1/54)
Dance: 90% (5/54)
Overall: 95% (1/54)
<a href="#">more...</a>