David Corless

VBA Project Write-up

Executive Summary

Business Description

During my time at BYU I have been a part of the diving team. We would hold competitions regularly throughout the season against schools across the country. In order to run a diving meet, we would usually need three people to help with announcing, recording judges' scores, and summing up divers' scores. In order to find the number of points achieved by a dive, each dive has a specific degree of difficulty that gets multiplied by the sum of the middle three judges' scores. Divers perform six dives during a meet, so these six dive scores get added up to get a final score for a diver that is compared against the other divers to see who wins.

Business Issue

At BYU, diving meets have been run on pencil and paper with calculators as the most sophisticated piece of technology. Because of this, divers and spectators would have to wait about 20 minutes before knowing the results of a meet. There would also sometimes be errors in the manual calculations. In the past this has caused the need for adjustments after results have already been announced.

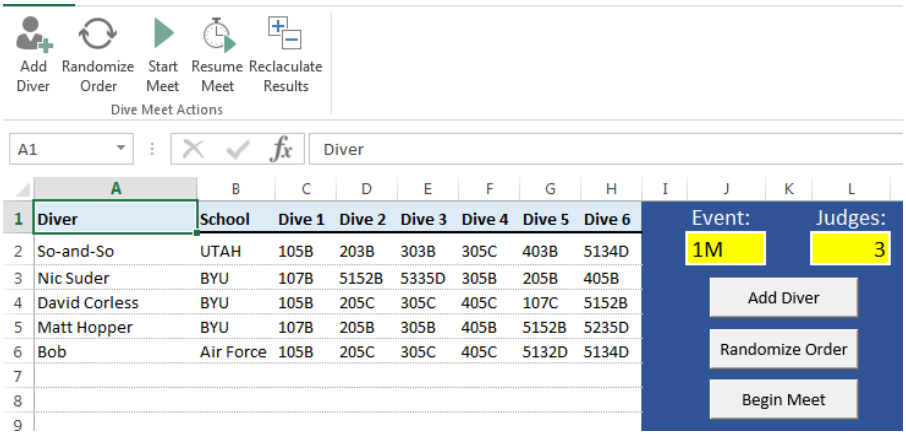
Solution

My system is able to effortlessly run a diving meet without having to worry about miscalculations or waiting for the results. The system uses user forms to easily input divers' lists and judges' scores once the meet has started. The results are then automatically calculated accurately. This saves the pain out of running a dives meet, and makes it extremely easy. The system accomplishes the four main tasks of running a diving meet:

1) Entering diver info and dives
2) Setting the order of the divers in a random order
3) Entering judges' scores
4) Calculating the results

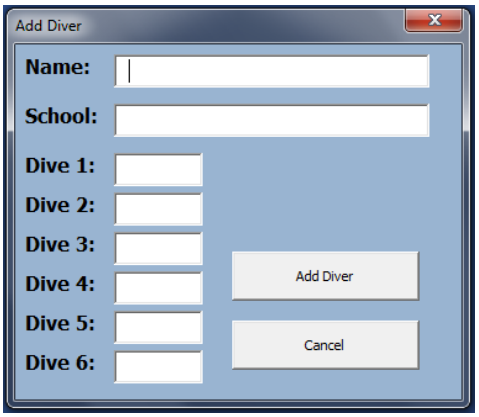
Implementation Documentation

The meet functionality all starts with the opening 'Diver List' tab. On this first tab you can select the event (1 meter or 3 meter) and the number of judges (1, 2, 3, or 5). These are all set with data validation.



	A	B	C	D	E	F	G	H
1	Diver	School	Dive 1	Dive 2	Dive 3	Dive 4	Dive 5	Dive 6
2	So-and-So	UTAH	105B	203B	303B	305C	403B	5134D
3	Nic Suder	BYU	107B	5152B	5335D	305B	205B	405B
4	David Corless	BYU	105B	205C	305C	405C	107C	5152B
5	Matt Hopper	BYU	107B	205B	305B	405B	5152B	5235D
6	Bob	Air Force	105B	205C	305C	405C	5132D	5134D
7								
8								
9								

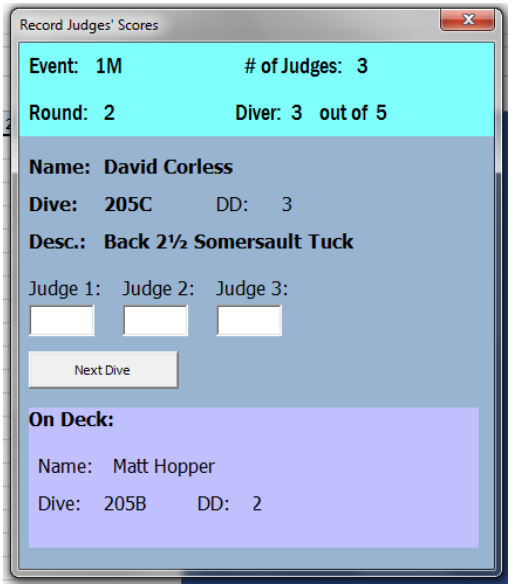
Once the event and number of judges are selected, you can start entering in divers and their lists. You can do this by manually entering in the info into the cells, or by clicking the 'Add Diver' button on the worksheet or in the ribbon. This prompts the following user form to enter in information for a diver. When the Add Diver button is clicked, all 6 dives are validated to see if they are real dives (by doing a vlookup to the dives tab) and the information is entered to the bottom of the list.



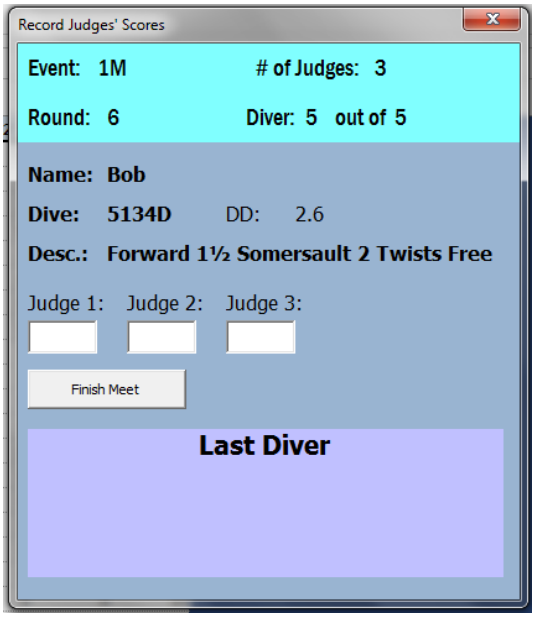
Once all the divers for a meet are entered, you can randomized the order by pressing the 'Randomize Order' button in either the worksheet or the ribbon. This uses a random number generator to sort the divers.

Once the divers are entered and the order is set, the meet can begin. By pressing the 'Begin Meet' button on the worksheet or the 'Start Meet' button in the ribbon, everything starts. First there is some validation for the divers' information. A message box will appear if there is missing information and another message box that will appear if there is an invalid dive entered. Then a 'Scores' sheet will be created and the previous one deleted if it already exists. The warnings are left on to delete the sheet in case you don't want to get rid of the old scores yet. The 'Scores' tab is formed to easily store judges' scores for each dive. A button is also added to resume the meet if it is stopped before finishing. A user form will also be prompted for the entering of scores.

This user form is made so you can easily record judges' scores and know where in the meet you currently are. This form gives all the information that an announcer would need as well. The current diver, dive number, description, and degree of difficulty (DD) are listed as well as information for who is on deck. General information about the meet including which of the 6 rounds and how many divers are left in the round.



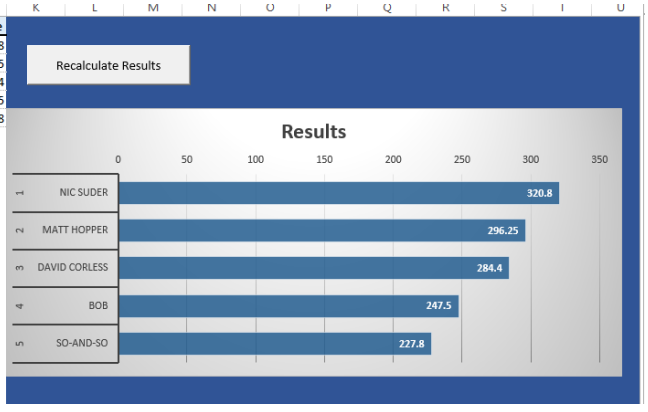
Based on the number of judges set before the meet begins, there are that many text boxes for scores to be input. There is data validation for these to make sure it is a valid score entered in (a number between 0 and 10 in 0.5 increments). When the 'Next Dive' button is clicked, this data validation is run and the scores are stored in the 'Scores' tab. The net score is also calculated at this time. It is the sum of the middle three scores. The diver that was on deck then becomes the current diver with the next diver appearing on deck. This continues until the last diver of the last round. If the form is ever canceled, the meet can be resumed by clicking 'Resume Meet' button on the worksheet or in the ribbon.



When the last diver is up, the on deck section is gone, and instead states that this is the last diver. The 'Next Dive' button is also gone, replaced with a 'Finish Meet' button. When this button is clicked, after validation on the last dives' scores is done, the results are calculated.

The results are calculated for each diver, sorted in order (which also accounts for ties), and displayed in two different ways. The first is simply in the results tab with dive and total scores for each divers. The second is in a bar graph next to the first. If a change needs to be made to a score or a dive, the results can easily be recalculated by clicking on the 'Recalculate Results' button in either the worksheet or the ribbon.

Place	Diver	School	Dive 1	Dive 2	Dive 3	Dive 4	Dive 5	Dive 6	Total Score
1	Nic Suder	BYU	62.7	57.6	45	48	48	59.5	320.8
2	Matt Hopper	BYU	57.75	48	48	51	48	43.5	296.25
3	David Corless	BYU	53.3	45	45	46.5	45	49.6	284.4
4	Bob	Air Force	39	45	45	46.5	33	39	247.5
5	So-and-So	UTAH	44.2	27.6	36	45	36	39	227.8



Discussion of Learning and Difficulties

There were a lot of concepts that I had to use in order to complete this project. One of the ones that was newest to me was changing the visibility of objects in a form. I had to use this in order to allow between 1 and 5 judges. Based on the number of judges set, only that number of input boxes will appear for scores. Also, when the last diver is up, a new label appears stating that it is the last diver and the 'Next Dive' button is replaced with the 'Finish Meet' button. I also had to refresh myself on adjusting the ribbon and using arrays to create a randomized order.

One of the main difficulties I faced was completing all the validation needed for the meet to run smoothly. It was fairly easy to validate the dive numbers because I have a list of all dives and their associated DD's released by FINA. Validating the judges' scores was a little trickier, but by using an array of valid scores, I was able to check the score against that.

Something I would like to do in the future, but was not included in the scope of the project proposal is to create a macro that will upload the results of a meet to a server I have already set up. I recently created a web version of this project at mydivemeets.com. This excel workbook could however act as an offline version of the system. Then after the meet is over and the results are finalized, I could run a macro to insert the records for the meet to the database, so that all historical information could be stored in the same location. This was not included in the proposal, and I spent enough time working on the rest of the project that I didn't feel obligated to do this before the end of the semester. You can gues what I'll be doing over Christmas break though.