**Team 1**

**COMP16 - Systems Engineering**

Dance Competition - Phase 1

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**Summary**

Based on the issues from the last bi-weekly report, we are still working on correcting the issue of the inaccuracy when a recording of a dancer spinning. We have successfully fixed the bugs within the position vector code and we have managed to complete a key part of Phase 2. We have managed to create 2 classes that firstly work out the position vector of two relative joints, e.g. the head and neck, then normalises this vector ready for algorithmic comparison of the skeletal. The algorithmic approach we have taken is to work out the percentage error between a “bad” recording’s joint against a “good” recording. Because we haven’t actually got a “good” and “bad” skeleton recording of a dance, we have recorded simple sample dances to test the code. The second class is then able to work out the percentage error between relative position vectors; an average percentage error over all timestamps of a position is then given. We also have a total average of all percentage errors, so effectively a score for how well the person has completed a dance. We are yet to represent this in our GUI.

We have started cleaning up the code, and finalising our project ready for submission.

**Highlights**

Significant progress has been made in our attempts to solve phase 2 of the project (the automatic comparison of an expert version of a dance against an amateur version). We are able to compare different versions of the same dance and give the dance a percentage error amount that tells the dancer how far off of the ideal dance they are. The next step would be creating a way of visualising this result.

**Lowlights**

We discovered a bug with recording that means we needed to re-record several times to make sure that the recordings we had have no issues. This also meant that we needed to retest the different methods we tried for getting a spinning dancer to render properly (the kinect is poor at picking up people in side-profile so as they spin the skeleton gets distorted.)

**Issues**

Affixing the 3D blender model to the skeleton representation of the dance in a way that it looks smooth rather than jittery is proving to be a challenge.

Retesting the methods for merging the skeletons with the new corrected recording method is going to be time consuming.

**Next Period Plan**

Everything is due on the 23rd of March, so next week the focus will be getting all of the deliverables ready for that deadline. We think that the majority of the time will be spent on getting the website ready, since that is the main way that we will be able to show all of the work that we have been putting into the project. We will also be cleaning up the codebase in preparation for handing in the code, as well as trying to fix any last minute bugs that we find. We are planning to finish implementing any new features by the end of the weekend of the 14th-15th.