MODEL AND ANIMATION OF THE MALE GUPPY FISH

By [redacted]

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PROJECT AIM

- The aim of this project was to model and animate a realistic male guppy fish. Alongside this, a simple game was developed which would feature this model as the playable character.

RESEARCH

- For modelling the guppy, numerous images were referenced, taking not of the animals colours and patterns.
- Journals and web articles helped provide more in depth understanding of the polymorphism of the guppy fish. This is one of the main factors in why UV mapping an exact guppy fish texture was chosen.
- Numerous video's on the movement of the guppy fish was used for the animations. For example, simple movements starting from the head, which get steadily more exaggerated towards the tail.

TECHNIQUES USED

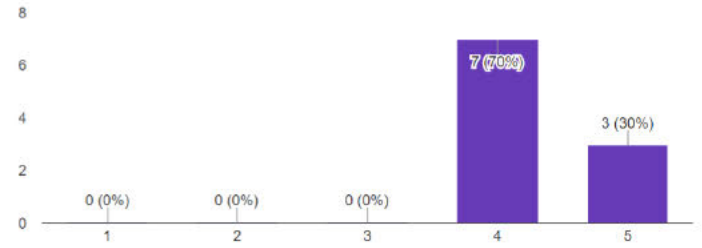
- After watching numerous online tutorials on modelling, caution was taken with every movement of a vertex. By constantly switching to wireframe mode, the models geometry was kept very clean.
- nCloth proved to introduce numerous problems when trying to export into engine(performance issues, unrecognisable as skeletal mesh etc.…). This was countered by adding joints to the tail and animating the tail along with the spine.
- UV mapping. Exported UV sets into Photoshop, then guppy textures applied to UV's. Producing custom fit textures for specific model.

SURVEY RESULTS

- Survey results provided a very positive response the visual of the model and animations. With all respondents rating at least a 4 out of 5 after viewing the image and video of the model.
- When asked what could be improved upon, a common response was to smooth the tail more and even more so, to place the model into an underwater environment. Both of these were acted upon, with the UE4 game being based underwater.

(Question from this point onward should be answered after viewing the model and animations) On a scale from 1 to 5, how would you rate the texture of the model?

(10 responses)



Could you offer any suggestions to help improve the project? (10 responses)

Smooth edges
Add a scales effect on the texture so that it isn't just a smooth surface.
First animation seems slightly stiff, but that might just be the camera/recording
possible improvement on tail
It would be nice to be able to see the fish in a water environment, this would aid visual appeal as to whether or not the fish would look realistic underwater.
Have it swimming with others?
Place underwater
Smooth tail edges?
Add the guppy to an underwater environment
place in an underwater level

CONCLUDING THOUGHTS

- The modelling and visual aspects of the model were very successful. This is was confirmed by the responses from the questionnaire, as respondents rated this very highly.
- This animations could have been improved upon had a further understanding of nCloth been developed. As nCloth would have provided a much more impression tail movements.
- Trial and error was an important aspect of many parts of this project. It is important to consistently test everything being done to the model. As was the case with nCloth, having a back up plan proved very useful.