3D Solar system – Space Travel

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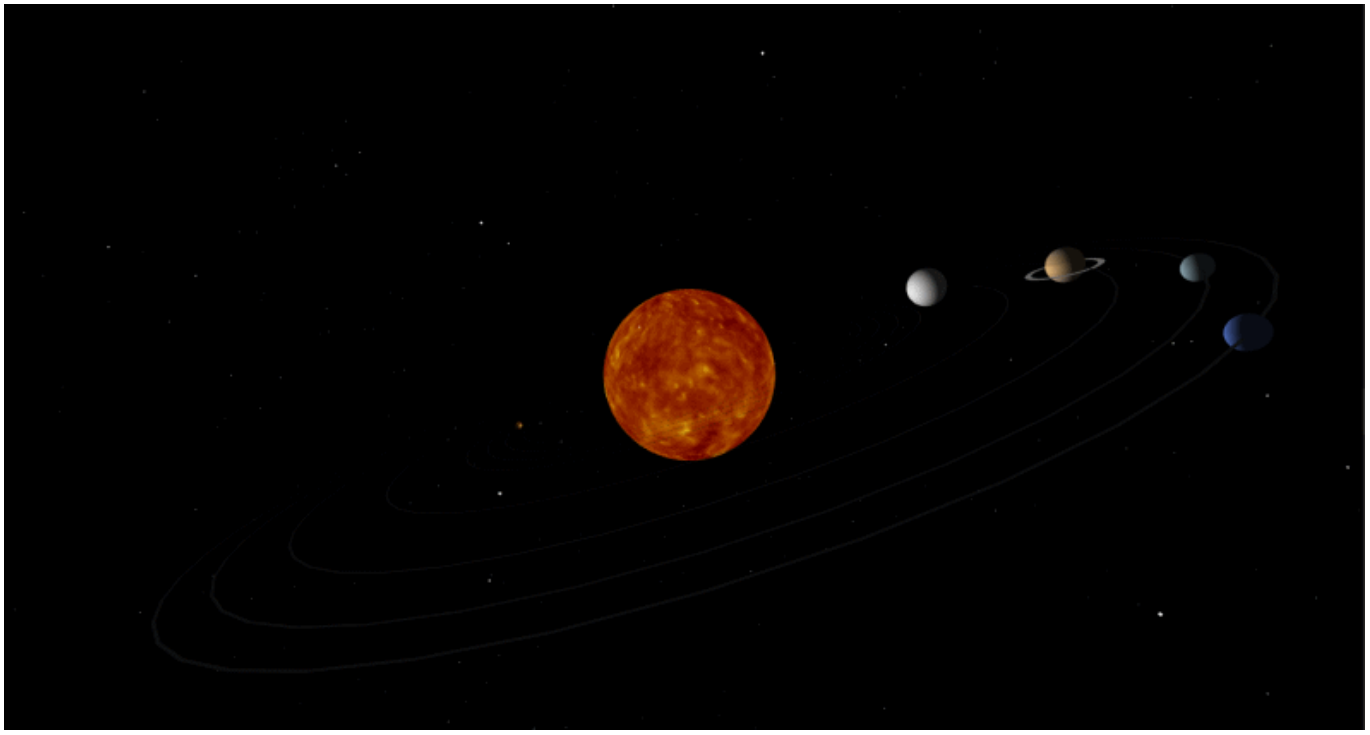
Week 8
Critique/Playtest Report: Project in Pieces

We have to admit, that even though our plan was not that complicated, and we were convenience that we can just stick to it and everything will go smoothly, we have some delays. Code logic is quite complicated for us and also implementing the code to make it more efficient and take less memory. The stars system is the biggest problem for now, because it takes about 100Mb of memory. So far, we have changed the float variables to short int, and we got 10Mb of memory back, which is always something. We had so many different ideas how to implement the stars system it, but it takes huge amount of time to test all of them. So far we can say we have met 50% of our milestones. That is setting up a solar system and all its objects, adding textures, materials, lightings, fixing lightings, adding camera movements, rotations, orbits etc. What we have left and are working on are adding the info boxes, setting a simple UI, and some more user interactions. Where are less tasks but difficulty wise more tough than what we have done so far.

Currently, our main struggle is how to solve the camera interaction with the mouse pressed function. The biggest problem is that planets, camera and mouse coordinates are different. We tried using worldToScreen/cameraToWorld functions, but we are not sure how to use them. We want to divide the code to the smaller pieces, add the camera axis, add the second camera (as in CameraParenting 3D OpenFrameworks example) and then debug it. Hopefully it will work, if not we thought about creating our own shader. We also have an alternate solution for the problem planned as a backup if we are unable to do the mouse selection. We also have an alternate solution for the problem planned as a backup if we are unable to do the mouse selection. It might be also a good idea to write shaders to solve the stars system problem.

In past weeks we added the ring for the Saturn, and additionally we made orbits for all of the planets, which user can turn on/off using ‘o’ key. Fixing our memory leak caused by black hole took us lots of time. Moreover, we struggled with git. Zami could not pull and push from master branch, so we spent many hours on searching how to fix it. At the end we found out that it was some problem with ‘HEAD’ and ‘FETCH_HEAD’. At least in the future we will know what to check first.

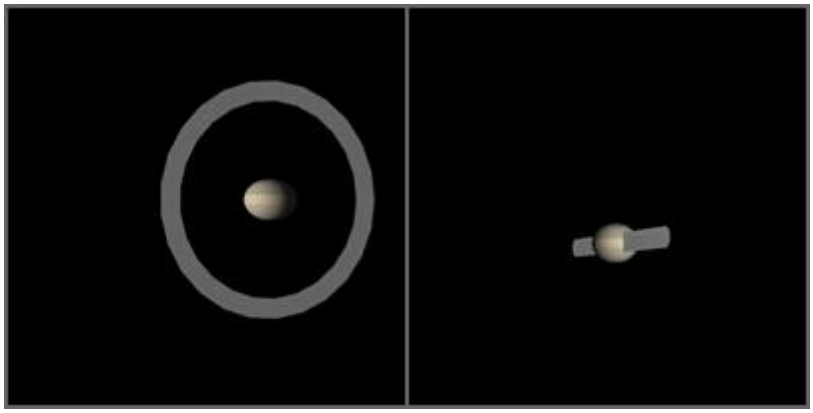


Users opinion

#1. Malaika and Manuela – Creative Computing

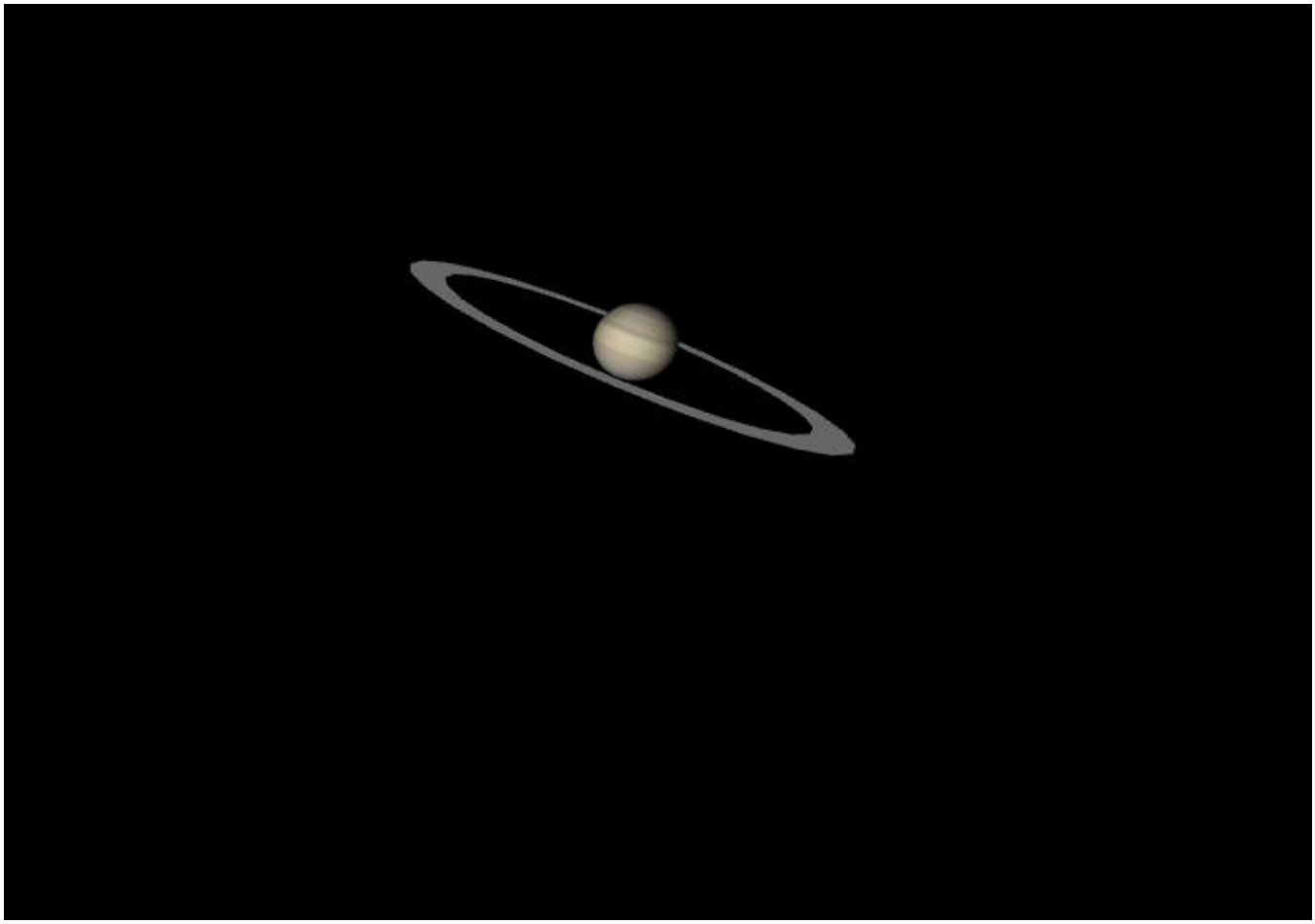
The app to design shoes/sneakers

Feedback on our Project:



The first thing they have noticed is that our solar system is really slow, which we know, and we are keep trying to fix it. They were happy, that we had listened to their idea: adding ring to the Saturn. They also said we should change the colour to yellow, and it would be perfect if we even could add the texture to it, so it would look more like many rings which Saturn has. Moreover, we should add rings to Jupiter, Uranus and Neptune. In their opinion adding orbits was a great move, but to make them more visible, we should make them lighter, more yellowish. Additionally, Manuela notice that instead of using the "A" and "D" keys, we should use arrow keys, because it is more intuitive for users. They suggested to line up the planets when one of the keys is pressed. We planned to do it anyway, but it is good to know that our ideas meet user's expectation.

Their feedback was really detailed and helped us to set us back on track, which helped to plan and manage our project.



Our feedback

Manuela and Malalikas' project is impressive. They pay so much attention to details.
We were a bit confused what some of the icons do. Our solution for that issue is, while the user hovers the mouse over the button, it shows short description, or just one word. Also, there is two downloading icons, and it is really confusing which one user should use. We also realized that they do not really need the crop function, they could only specify what size of the image users can upload. The prototype worked perfectly unless we had uploaded the 3D model, most of the buttons stopped working. It is probably because of the different system coordinates for 3D and for mouse function. 3D shoes' models look incredible and they are absolutely specific.

Tools option is quite similar to the Photoshop's one and it is a good thing. Users will not have to spend hours to figure out how to use their app.

#2. Michael and Athar– Creative Computing

The app which takes weather data and transform it into music

Feedback on our Project

After reviewing our projects, they suggested us to provide instructions as to what buttons or controls to use for interactions. Due to adding the star system our project became a bit slow since it is adding about a thousand objects in the background, so they suggested to fix it and make the movements smoother. They really seemed to have enjoyed the navigation, for being able to see the Solar system from so many points of view. Another thing they recommended us to change is the zoom in and zoom out buttons and their functions. As they were using the app, they felt inverting the functions of the zoom in and zoom out button seems more comfortable to them. Overall, they were really impressed with the progress we made. They really liked the orbits and the ring around Saturn as they think it makes it more realistic as well as see the orbits for each of the planets.

Our feedback

Their project is about an app that turns weather Data into sine-waves. It takes values from different weather elements and implement them into a sine wave function's parameter hence producing sine waves. The app is very interesting as it involves nature and programming together. Their UI seems quite easy to use hence user friendly, however it does not look that appealing so we suggested to maybe add a more colourful/attractive UI. They provided a good amount of instruction to how to use the app. They displayed the sound difference of based on the weather differences of different cities as the weather data is from different cities. Their code was very organized. Now they are using separate keys to "Play" and "Stop" the sound which we think is a bad idea since it produces sound wave and sound waves can become very annoying to listen to. So, we suggested them to implement the play-stop functions into one button instead if two. Also, they don't have a volume adjustment option, and since they are working with sound waves adding a volume adjuster would be helpful for both them and their audiences.

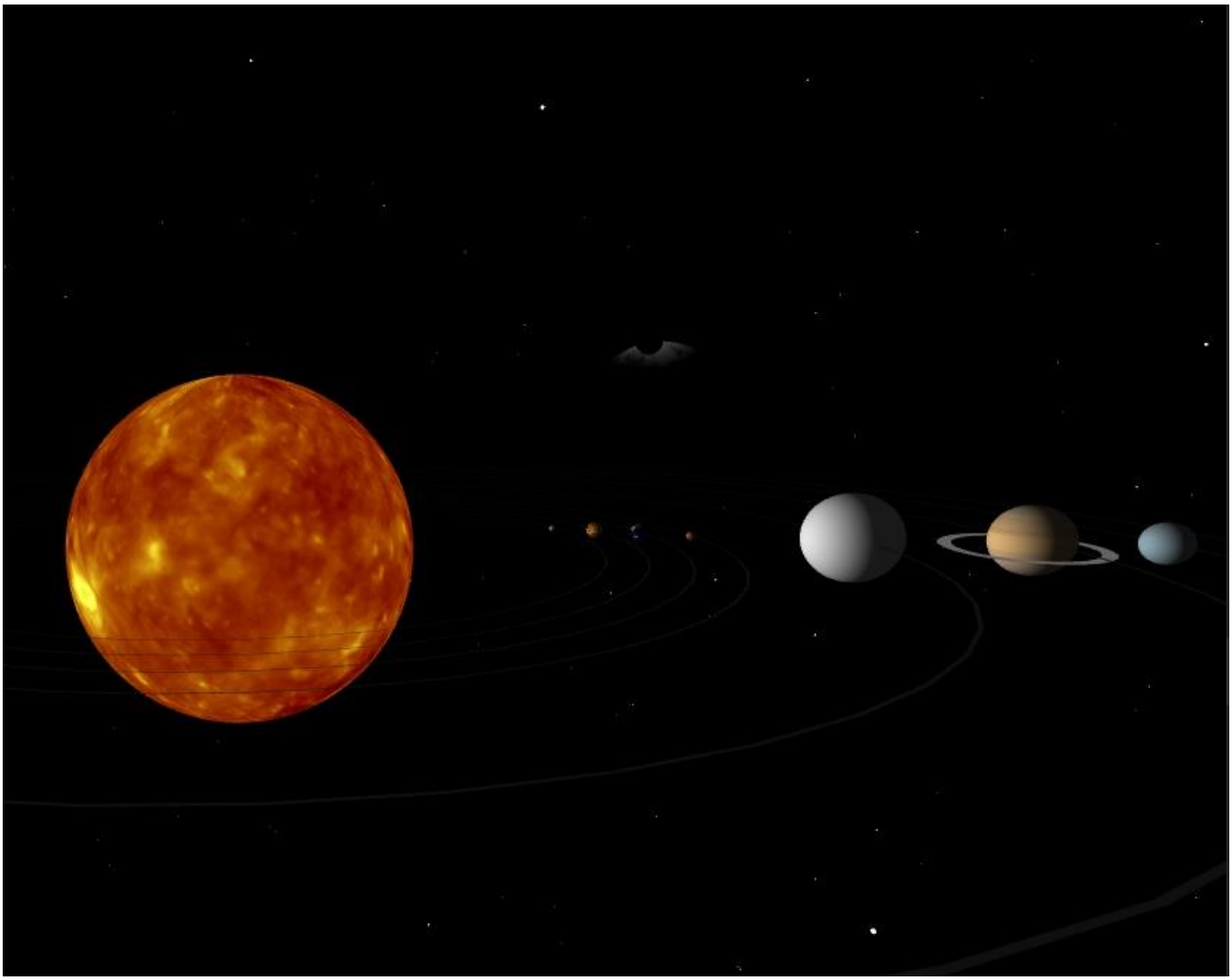
#3. Wiktoria – 12 years old student of Chislehurst School for Girls

Feedback on our Project:

Wiktoria is at the age that our potential users will be. It was quite difficult to get the feedback from her and not to ask too many questions or not to ask those ones which might suggest the answer.

She said it looks realistic and that she had never ever had seen the interactive 3D solar system. Wiktoria liked that the sun is brighter than other planets and that it has the accurate colours: yellowish and orange. So far, every person which we have asked for an opinion about our project, they all told us that it is really slow. Wiktoria has not even mentioned the speed, and when I asked her about it, she said it looks good and she thought it was meant to be like that, so she can catch more details.

When I asked her how she would find it when instead of learning about Solar System from books at school, she could interact with it. She said that it would be exciting and finally not that boring. She cannot wait to see the version with description, so she can learn more about the Solar System.



#4. Gosia – Goldsmiths Computer Science student

Feedback on our Project:

In her opinion we should not include the black hole in our project, because it is not the part of the solar system, but it looks realistic and interesting though and she. She mentioned that using the 'ASWD' keys is more intuitive for users, and we should not change them to arrow keys. However, we should switch "UP arrow key" with "DOWN arrow key". To improve the efficiency, we could not draw that many stars between the planets and make them smaller. It does not look good while user is looking at the planets, and somewhere he can see the star, which is that big that it looks like a moon, or even another planet. We will give it a try, because it is really annoying how slow our simulation is. Once she mentioned moons, she said she would love to see them included into our project.

In general, she believes if we will keep up with our work, we will create something amazing.

#5. Ethen(lecturer) - *Dept. of Electrical and Electronic Engineering (Ahsanullah University of Science and Technology)*

Feedback on our Project:

After checking out our app he thinks the stars look, very realistic making the whole simulation look and feel better. But it is hindering the performance of the app making it very slow, so he suggested we should fix it since the simulation looks great. He really liked the Saturn ring and would want to see the rings on the rest of the planets that has rings. He thinks the orbits are a nice addition since it is educational but would look better if they were smoother. He suggested we should add moons but since planets like Jupiter has around 67 moons, he suggested we should add a moon o earth at least to give our target audiences which are children above age 7 a better look at how the moon rotates around the earth. Over all he was impressed by our work and would like to checkout our further development.

Conclusion

Overall we can say we a on track and working to finish the project before deadline so that we can make tweaks and changes if not additions to the project if needed later on. We plan to make the project easy to use and able to interest our target audiences at the same time educate them as much as we can about our planet, solar system and all other planets within. With everyone's feedback our idea seems possible. The only thing standing in the way is setting up the technical features.