AR Portal for GOSH

Terms and Conditions – Software Delivery Document

The agreed deliverables of the project are:

- An android application that has an augmented reality (AR) portal that users can walk through to enter an AR room, where they can interact with the models inside
- A web application that users can use to make and customise said AR rooms

The major milestones are:

- Sealing of requirements
- HCI
- 1st Prototype
- Elevator Pitch
- Final Presentation
- Final prototype

The quality gates/major components are:

- Retrieving 3D Models for applications
- Parser for Unity app to parse web app's customisable room
- Web app that can make AR customisable rooms
- Basic security
- Interactions in AR portal
- Website detailing our research

Below is a more detailed list of the specific deliverable requirements that the team has agreed on, the intended contributors and expected completion date. At the end of this list is the expected code review date as well as the handover date.

Deliverables	**Priority**	**Contributors**	**Expected Completion Date**
The user is able to move within the augmented reality (AR) portal space.	Must	Yin Long Ho, Chirag Hedge, Haonan Zhang	21st Dec, 2018
360-degree video within AR space	Must	Yin Long Ho	4th Jan, 2019

Web app for users to create new AR rooms	Must	Chirag Hedge	4th Jan, 2019
Web app for users to add/edit/remove objects from AR rooms	Must	Chirag Hegde	4th Jan, 2019
Web app user authentication and storage system (non-SQL based)	Must	Chirag Hedge	4th Jan, 2019
Download rooms from web app and generate them in the mobile app	Must	Yin Long Ho	4th Jan, 2019
Users can interact with models inside the AR portal	Must	Yin Long Ho	8th Feb, 2019
Users can add their own models in the web app	Should	Yin Long Ho, Chirag Hedge	15th Feb, 2019
Making worlds 'private' by using passcodes in the web app	Should	Haonan Zhang, Yin Long Ho, Chirag Hedge	22nd Feb, 2019
3D interface for editing rooms in the web app (using WebGL)	Should	Chirag Hedge, Yin Long Ho	15th Feb, 2019
Website front-end development	Should	Haonan Zhang	1st Mar, 2019
App analytics	Could	TBA	TBA
		Date of code review	15th Mar, 2019
		Date of handover	22nd Mar, 2019

Liability, IP and Privacy Document

Our project, the AR Portal for GOSH and NTT Data, will encompass both a web and Android application. Both components must consider the potential liabilities and privacy problems that could potentially affect them. In addition, this document details my proposed license and IP for our source code.

Potential Liabilities

We have considered possible liabilities, mainly concerning the privacy of both the web and phone application. The biggest liability is naturally the storage of data. Our project has very little use for personal data, and all data will be restricted in its usage and storage to minimise the risk of privacy breaches. This will be further explained in the Data Privacy section.

One concern was transferring malware from the web application to the phone application via the interaction scripts. This should not occur due to the scripts being pre-set beforehand, and only authorised web application users can access them.

Under the Disability Discrimination Act, we will take steps to make our applications usable to everyone. Following characteristics of high compliance sites, we plan to make our web application as accessible as possible where each page has a descriptive title, using common web conventions, and enough contrast between text and the background to reduce eyestrain. Our Android application user interface will also be designed in compliance with similar characteristics, as well as using voice recognition for those with weaker motor skills.

Intellectual Property (IP)

As per the document we signed at the beginning of the project, the project will be under the student IP policy, owned by UCL. This policy recognises the students as the owners of this project's source code, but we are also under UCL's obligation to our clients due to the UCL Industry Exchange Network Project Agreement.

All models we use in this project are free from TurboSquid (including TurboSquid Inc.) and under its royalty free license. In particular, "TurboSquid grants to you a non-exclusive, perpetual, worldwide right and license to copy, distribute, reproduce, adapt, publicly display, publicly perform, digitally perform, transmit, broadcast, telecast, advertise, create derivative works, and market Stock Media Products within Creations in the uses authorized in this agreement [1]".

We're using Unity to make the Android application, currently under its 'Personal Plan', as we are under its eligibility of making less than $100k as well as using it for educational purposes. This would be subject to change if the app were to make higher revenue. All plans from Unity are royalty-free, including "all platforms, core engine features, continuous updates, and beta access [2]." Free and non-restricted assets from Unity's Asset Store are also under their Asset Store Terms of Service and EULA [3]. We haven't used any restricted assets in our Android app.

I believe our source code to be under a free software license, in particular, a General Public License (GPL) source code agreement, such as AGPL, especially as we are making a proof-of-concept. This means recipients of this source code can modify and distribute it. The copyrighted source code ensures that no unauthorised third party can pass the code as their own but will allow more developers to help contribute to it and minimises the risk of security breaches, especially as this source code is most likely to be used in medical situations.

Furthermore, this license gives freedom in the pricing of this app, which can be changed later as seen fit. To protect the developers, no warranty will be given for this source code, and any change to the source code must be clearly stated so it would not mistakenly affect us.

Data Privacy Considerations

Personal data is "any information that is related to an identified person", specified in the General Data Protection Regulation (GDPR) documents [4]. In accordance with GDPR, we promote privacy and data protection of personal data in this project.

Only the data that's necessary for the app to function, nothing more, will be collected and/or used, in compliance with GDPR by design. This personal data will be updated in a timely manner to keep it relevant for the project's use and so that it is accurate. All data must be given with unambiguous consent by opting in, and

users have the right to withdraw this consent at any time. This data won't be misused or given to third parties that the user hasn't given their explicit consent to.

Our project's main privacy liabilities include user authentication when accessing the web and/or phone application so only authorised users can view/edit the AR worlds. With an extra passcode requirement to make worlds 'private', unauthorised users can't access certain worlds. This also protects the users, as the world they use might reveal their circumstances to unwanted third parties if everyone could access and see the which users can access which world. This passcode is shared via users hence it is not stored, and no one else is able to access it.

With regards to the potential use of brain scans and other sensitive medical material used in the applications, these will be secured so unauthorised users will not access patients' sensitive data. Similarly, the app's analytics' results can be shown via a heatmap, but individuals' data will not be stored so data can't be tracked back. The statistics will be kept anonymous and will only be carried out with explicit consent.

Overall, I believe we have considered the glaring concerns concerning liabilities, source code IP, and compliance with GDPR. Our app should be accessible, not store any unnecessary information, and avoid major liabilities.

References

[1] "Using the TurboSquid Royalty Free License - TurboSquid Blog", TurboSquid Blog, 2019. [Online]. Available: https://blog.turbosquid.com/royalty-free-license/#Royalty-Free-License. [Accessed: 01- Feb- 2019].

[2] U. Technologies, "Store - Unity Store", Unity Store, 2019. [Online]. Available: https://store.unity.com/. [Accessed: 01- Feb- 2019].

[3] "Asset Store Terms of Service and EULA - Unity", Unity, 2019. [Online]. Available: https://unity3d.com/legal/as_terms. [Accessed: 01- Feb- 2019].

[4] "Personal Data | General Data Protection Regulation (GDPR)", General Data Protection Regulation (GDPR), 2019. [Online]. Available: https://gdpr-info.eu/issues/personal-data/. [Accessed: 01- Feb- 2019].