Module	SEPR
Year	2019/20
Assessment	2
Team	MiKroysoft
Members	Daniel Crooks, James Rand, Irene Sarigu, Alfie Jennings, Charlotte Clark, Jasper Law
Deliverable	5a Updated Requirements
Website	https://mikroysoft.github.io/

5a ii Updated requirements

SSON

A single-player game that involves moving fire engines between the Fire Station and the ET Fortresses, avoiding ET patrols on the way and attacking ET Fortresses when the fire engines' water canons are within shooting range.

Requirements

All the changes in non-functional and functional requirements are due to additions in the user requirements table or due to a refinement in their description to make them more specific. As described in the table below the changes are highlighted using yellow.

🟩	Addition
🟨	Changes
🟥	Removal

Shall	Will be added to the system
Should	Might be added to the system
May	Optional task

[PR]	Information from the product brief
[IN]	Information from interview with client

User Requirements [Table]

ID	Description (Source)	Priority
UR_SIN	This will be a single player game, playable offline. [PB] **Assumption: The user has already downloaded the game files.**	Shall
UR_THE	The game follows the theme given by the client. [PB] **Assumption: Availability of adequate quality assets in alignment with the theme.**	Shall
UR_ACC	The system has the appropriate measures in place to be accessible to a wide range of users. [IN] **Assumption: Hardware is available to accommodate accessibility features**	May
UR_LRN	The game can be understood quickly, users can build strategies. **Assumption: Users with new copies of the game have never played the game or any similar game before.**	Should
UR_ENGI	Game will have at least 5 fire engines with unique specifications. [PB] **[RA_DIFF]**	Shall
UR_REF	In the game, fire engines are able to refill at the fire station. [PB] **[RA_GOAL-MET]**	Shall

UR_FORT	The game will provide at least 6 ET fortresses with unique specifications. **[PB] [RA_DIFF]**	Shall
UR_FLD	Over time the ET Fortresses will upgrade, becoming harder to flood. **[PB] [RA_DIFF]**	Shall
UR_END	Game ends correctly according to the client's specification. **[PB]**	Shall
UR_ABLE	Game will make sure that after 2 minutes the fire engines stop being able to repair or refill themselves (once the first alien base has been destroyed). **[PB] [RA_DIFF]**	Shall
UR_MINI	Game has a playable mini game integrated, in line with requirement UR_THE. **[PB] [RA_DIFF]**	Shall
UR_DIFF	The game shall become progressively more difficult over time. **[IN] [RA_DIFF]**	Shall
UR_ENGA	The system ensures that the gameplay engages users. **[IN] [PB]**	Shall
UR_COMP	The system will ensure a sense of competitiveness between different players. **[IN]**	May
UR_TIME	The game should be completed on average in around five to ten minutes, as specified by the client. **[IN]**	Should
UR_DEST	The game ensures that once a fortress or station is destroyed, it cannot be rebuilt, stopping all activity or interactions related to that building. **[IN]**	Shall
UR_POI	The game will allow players to collect and spend in-game currency on items that will upgrade their fire engine. **[IN] [RA_DIFF]**	May
UR_MOB	The game will be designed for use on a computer but can be ported to mobile and be used with ease. **[IN]**	Shall
UR_STRY	The game will ensure that the user is aware of the storyline in place. **[PB] [RA_STORY]**	Shall
UR_UOD	The game is developed for university open days **[IN] [PB].**	Shall
UR_QUIT	The user is able to leave(quit) the game.	Shall

Functional Requirements [Table]

ID	Description	User Requirement
FR_EXTRA_TERRESTRIAL	The system will ensure that the game contains ETs as enemies, with bases having different spawn rates of aliens.	UR_THE
FR_FIRE_ENGINE	The system will ensure that the game contains Fire Engines as the entity that users control. **[RA_DIFF]**	UR_THE

FR_TUTORIAL	The system will provide an easy to understand tutorial at the start of the game. **Assumption: The user is aware that the game is in tutorial mode, and is able to skip it**	UR_LRN UR_STRY UR_UOD
FR_ENGINE_VOLUME	The system will ensure that each fire engine has a unique level for the maximum volume of water it can store. It will then need to be refilled **Assumption: Each fire engine's maximum water volume is clear to the user**	UR_ENGI UR_REF
FR_ENGINE_SPEED	The system will ensure that each fire engine has a unique maximum speed. **[RA_DIFF]**	UR_ENGI
FR_ENGINE_ACCELERATION	The system will ensure that each fire engine has a unique acceleration. **[RA_DIFF]**	UR_ENGI
FR_ENGINE_RANGE	The system will ensure that each fire engine has a unique shooting range. **[RA_DIFF]**	UR_ENGI
FR_ENGINE_DELIVERY_RATE	The system will ensure that each fire engine has a unique delivery rate of water. **[RA_DIFF]**	UR_ENGI
FR_ENGINE_DAMAGE	The system ensures that each fire engine can take a unique amount of damage before it's destroyed. **[RA_DIFF]**	UR_ENGI
FR_FORTRESS_RANGE	The system will ensure that each ET Fortress has a unique range for its defensive weapons. **[RA_DIFF]**	UR_FORT
FR_FORTRESS_DAMAGE	The system will ensure that each ET Fortress has a unique damage per second dealt to fire engines from its defensive weapons. **[RA_DIFF]**	UR_FORT
FR_FORTRESS_VOLUME	The system will ensure that each ET fortress has a unique maximum volume of water that it can handle, before flooding and ceasing activity. **[RA_DIFF]**	UR_FORT UR_DEST
FR_UPGRADE	System will upgrade the remaining ET Fortresses when one is destroyed. **[RA_DIFF]**	UR_FLD UR_DIFF
FR_WIN	The system will ensure that the game is won only when all ET Fortresses are destroyed. **[RA_GOAL-MET]**	UR_END UR_DEST
FR_LOSE	The system will ensure that the game is lost when all the fire engines have been destroyed. **Assumption: User is made aware that the game is lost, before resetting.**	UR_END UR_DEST
FR_INCORRECT	The system will never allow the game to end without either FR_WIN or FR_LOSE being satisfied.	UR_END
FR_LOCATION	The system will ensure that after 5 minutes the ETs find out the location of the fire station and destroy it.	UR_ABLE UR_DIFF UR_TIME
FR_LEADERBOARD	The system will ensure that there is a leaderboard based on finish time, so that players can compete against each other. **Assumption: The leaderboard is easily accessible. After a game, the user is asked to provide a name for the leaderboard.**	UR_COMP UR_SIN
FR_EARNED_POINTS	The system shall never allow users to have more points than they have rightfully earned.	UR_POI

FR_RADI	The mini games are presented when the fire engine enter within a certain radius of an ET fortress	UR_MINI
FR_BTN	The system shall ensure that there is a quit button that allows the user to leave the game (on the main menu).	UR_QUIT
FR_ESC	The system shall ensure that when the user is in the game screen - they can press escape to navigate back to the menu (so they can access the quit button).	UR_QUIT
FR_CONTROLS	The system shall provide intuitive controls, increasing learnability and memorability.	UR_LRN

Non – Functional Requirements [Table]

ID	Description	User Require-ments	Fit Criteria
NFR_CON	The system will cater for visually impaired users by providing a high contrast version of the game. **Assumption: Toggling high contrast mode is easily accessible from the options menu**	UR_ACC	Contrast enhanced to the level specified by a group of at least ten visually impaired product testers.
NFR_LANG	The system will ensure that all text presented on screen are in plain and correct English, allowing the user to engage and learn the game more easily.	UR_LRN UR_ENGA UR_UOD	All presented text verified by Microsoft Word spelling and grammar checks, and QC checked by at least 2 team members.
NFR_ MANUAL	The system will provide a manual which will be used to explain to the user how the game works. **[NFR_LANGUAGE_USED]**	UR_LRN UR_UOD	The user manual shall describe all system components in adequate detail; as defined by stakeholders.
NFR_HW	The system will run on low – end hardware.	UR_ACC UR_MOB	Maximum hardware requirements of: 512MB RAM 1GB Storage 1.5GHz Processor
NFR_CONTROLS	The system shall provide intuitive controls, increasing learnability and memorability.	UR_LRN UR_MOB	Use mouse or touchscreen
NFR_SOUND	The system shall provide sound effects as feedback for actions	UR_ENGA	There will be sound for the following: - Alien Base gets flooded - Fire Engine dies