STATEMENT OF REQUIREMENTS FOR CHILDS TOY / GAME PROJECT

TEAM -2 2022

Introduction

The aim of this project / commission of work is to provide a toy or game for the child education / entertainment market.

The following requirement have been split into the following sections

- System
- Operational
- Design

Each Requirement has been given a rating defined as

Rating	Significance
Mandatory	Mandatory requirement that must be met
High	Optional high desirability but not essential
Medium	Optional medium desirability but not essential
Low	Optional low desirability but not essential

System Level Requirements

Requirement Details (System)			
Ref	Rating	Requirement	Supporting Info
1.00	Medium	The system should boot up in under 1 second.	To engage with the users who may have short attention spans the system should be responsive and quick to start.
2.00	Low	The system should support all existing and forthcoming comms protocols.	While TCP/IP is the preferred communication technology the system should be built to use future technologies when they emerge.
3.00	Low	The system should run continuously for 72 hours on standard rechargeable batteries.	System should not be processor insensitive so conserving battery life.
4.00	High	The device should be immune from internet attacks OR should include protection (e.g. virus scanner, firewall) as part of the system software.	The system should employ defensive measures to prevent common types of attack.
5.00	High	The system should run on all available and forthcoming platforms.	User should be able to enjoy the game across desktop and mobile platforms and on all major OS platforms (Windows , Linux , OSX) (IOS Android)

6.00	Low	There should be freely available, easy to use development kits to allow users to create their own games and/or utilities.	A SDK would provide learning for users and allow a homebrew community to form around our game title.
7.00	Medium	Storage should be unlimited or easily expanded at low cost.	Where there is a need for local storage this should be managed though as a cloud first company cloud storage would be preferable over local storage
8.00	High	Data must be stored in the most efficient way.	Data should be stored in an efficient way when using backend DBMS systems these should be reliable and fault tolerant.
9.00	High	Data must be able to be searched and managed as efficiently as possible.	Any Stored data must be able to be searched and used while also being secured protected from misuse.
10.00	Low	It should be possible to create a multiplayer game.	Players should be able to play against other real players for more of a challenge then a computer-based opponent.
11.00	High	A player should be able to play against the computer.	The Game should allow the user to play against the computer
12.00	High	Any data captured / recorded used by the toy or game needs to fully comply with GDPR	Compliance with appropriate legislation is mandatory and non-negotiable.
13.00	Medium	Any network traffic generated by the toy or game needs to be secured by the use of encryption and SSL/TLS certificates	Security of the games internal working and user generated data is of vital importance both in preventing cheating and ensuring users personal data is protected.
14.00	Medium	Any application should be licensed in a way to be fully compliant with the licence of any library's modules used.	As this is a commercial application any code used should be compatible with the final produced application being commercially licenced.
15.00	Medium	While not wanting to solutionize as a cloud first company the DBMS used to store any details should be based on NOSQL document storage	Backend infrastructure should align with the cloud first strategy of the organisation.

16.00	Medium	As a cloud first provider our preference is for a solution based on microservices	Flexibility and the ability to scale to meet demand for the game and associated services.

Requirement Details (Operation)

Ref	Rating	Requirement	Supporting Info
1.00	Medium	The UI should be usable with 1 hand.	To support users including those with a physical disability the user interface should be able to be used by one handed user.
2.00	Medium	The system should be usable with either hand (ambidextrous)	Carrying on from Requirement 1.00 system should be able to be used by left and right-handed users with equal ease so not disadvantaging any user.
3.00	High	Software updates should be free and available over the air.	Updates should either be applied server side if run as a web service or deployed OTA to client devices updates should be delivered using strong encryption and authentication technologies.
4.00	Medium	Updates should download in the background and be automatically applied when the user turns off the device.	Updates should apply in the background so not interrupting the users use of the game.
5.00	Medium	The system should respond to inputs (screen swipes, etc, within 1mS	In order to give a good experience to the end user the interface should be responsive and respond quickly to inputs.
6.00	High	The system should support all known international languages.	To maximise number of users who can access the game it should support all major international languages (at least 3) or the ability to translate in Realtime to a chosen language
7.00	Medium	Additional languages should be available as free downloadable packs.	Where Language is coded into the app additional languages should be available to enable the application to be used in other regions.
8.00	Medium	The device should be controllable via touch, voice or text/ keyboard input.	To allow all users to use the game on desktop or mobile control should match the device the game is being played on.
9.00	High	A player should be able to create a persona.	Players should be able to create a individual profile to customise the

			game experience to their personal preferences such as Font Size Game Difficulty Colour Scheme
10.00	High	Toy should provide some form of educational content so child learns from using the toy	The Game should provide some form of education benefit to the player expanding their knowledge.

Requirement Details (Design)

Ref	Rating	Requirement	Supporting Info
1.00	Medium	The system should boot up in under 1 second.	To engage with the users who may have short attention spans the system should be responsive and quick to start.
2.00	Medium	The system should indicate a response with a sound (user selectable)	Game should have audio to help identify when functions have been selected. As this is a quality of life feature that will help users use the game.
3.00	Medium	Sounds should be able to be muted from the UI with a single key press.	If the game does have sound see 2.00 then the user should have the option to mute the sound ideally from a single hotkey.
4.00	Medium	Interface should be constructed in a way to maximise accessibility if web enabled should meet WCAG guidance on accessibility	WCAG provides a framework to ensure inclusion for all users including visually impaired users.
5.00	Medium	The game should generate its content in a random way to increase replayability and increase the longevity of the experience.	Having a random generated game will mean the life of the application Is extended as the user will be encouraged to play. It should also based on previous performance scale to challenge the child's current skill level
6.00	Medium	Give parents the ability to limit when the toy / game is used and how long play sessions should be	Giving parents the ability to limit play time is an important quality of life feature to provide parents the tools they need to manage children's screentime.
7.00	Medium	The game should record outcomes of play sessions and present this to the	Use of metrics to provide feedback to the users so they can see if they are improving.

		user in a way that they can see improvement over time.	