

## "LIST OF REQUIREMENTS FOR KROY

### Colour scheme:

- **Highlighted red text:** Not implemented in final version of game
- **Highlighted amber text:** Partially implemented in final version of game
- **Pink text:** Newly added requirement

### USER REQUIREMENTS

Requirement ID	Justification
UR_START_SCREEN	User shall select four options from the welcome screen (Start, Options, Credits, Quit)
UR_PAUSE	User shall pause the game and bring up a menu with options
UR_MINIGAME	User shall refill water by completing the increasingly challenging and engaging minigame
UR_INSTRUCT_ENGINES	User shall select and instruct their fire engines to attack the enemy fortresses and move around.
UR_SEE_HUD	User shall see a HUD showing health, water and minimap
UR_END_GAME	User shall be notified when they win/lose i.e when all fortress are completely flooded, all firetrucks are destroyed/fire station is destroyed.
UR_REFILL_WARNING	User shall know when they are close to needing to refill or repair.
<b>UR_ATTACK</b>	<b>User shall be notified when the fire station is about to be destroyed.</b>
UR_INTEREST	User shall be drawn in by the game, and not be bored.
UR_EASE	User shall be able to understand the game - be able to finish without being confused.
UR_MUSIC	Play music in the menu state.
UR_COLLISIONS	User shall not be able to pass through buildings and other objects, other than other firetrucks and <b>power ups</b> .
<b>UR_STRATEGY</b>	<b>User shall strategise how to manage and deploy their fire engines.</b>
<b>UR_FRESH_HEALTH</b>	<b>User shall be able to start each level with full health</b>
<b>UR_FIRE_TRUCK_POWERUP</b>	<b>User must be able to obtain 5 distinct special power ups during the game to enhance fire truck ability.</b>
<b>UR_GAME_DIFFICULTY</b>	<b>User must be able to select a game difficulty during the</b>

	game.
UR_GAME_SAVE	User must be able to “save” the current state of a game playthrough and resume it after exiting out of the game.

## FUNCTIONAL REQUIREMENTS

Requirement ID	Justification
FR_FIRE_TRUCK_POWERUP	Game should spawn 5 distinct power ups throughout the map for the user to obtain. (UR_FIRE_TRUCK_POWERUP)
FR_GAME_DIFFICULTY	Game should offer a choice of difficulty options to the player that control the relative difficulty of “winning” a game playthrough (UR_GAME_DIFFICULTY )
FR_GAME_SAVE	Game should be able to save the current state of the game including fire engine positions, ET positions and health. When re-opening the game it should be able to return to the save state. (UR_GAME_SAVE)
FR_DISPLAY_TIMER	System shall display countdown timer until aliens destroy fire station. (UR_ATTACK_WARNING)
FR_AUTO_REPAIR	Between levels user’s progress is recorded and data shall be saved locally on system.
FR_PAUSE	System shall be paused during play. This stops all movement of patros and the timer. Menu pop up with options. (UR_GAME_SAVE)
FR_UNIQUE_ENGINES	Fire engines have unique spec - speed, damage, capacity and range
FR_UNIQUE_ENEMY	Enemies will have unique spec - damage output, firing type, health
FR_ENEMIES_DIE	Enemies shall be removed from the game when their health is depleted to 0 from water.
FR_ENGINE_DESTROYED	System shall notify the user when their fire engine is destroyed. UR_seeHUD
FR_6_LEVELS	The game shall include 6 levels of increasing difficulty. UR_select_level
FR_END_GAME	User wins if they deplete the health of the enemy bases and complete the final level. The user loses if all their fire engines are destroyed (all health levels

	are zero in a level). (UR_EASE).
FR_NEW_LEVEL	The system shall take the user back to the level select screen when they have completed a level. (UR_END_GAME_SCREEN)
FR_OPEN_MINIGAME	When the user reaches the refill tile (bottom left corner of the map) the system shall start the minigame. (UR_MINIGAME)
FR_PLAY_MUSIC	The system should play the music when the game enters the menu state. (UR_MUSIC)
FR_DENY_COLLISIONS	The system shall stop the user from moving through obstacles other than fire trucks and power ups. UR_collisions
FR_GAME_STATES	What is displayed on the screen and what the user can interact with is controlled by a game stack. The top of the stack is the current game state that the user is interacting with. (UR_START_SCREEN, UR_GAME_SAVE, UR_SELECT_LEVEL, UR_PAUSE, UR_MINIGAME.)
FR_SECURITY	System should be able to store saved progress accurately. (UR_GAME_SAVE)
FR_PRECISION	Fire trucks positions after being moved should have a small error margin. (UR_INSTRUCT_ENGINES)
FR_MAIN_FOCUS	Mini game shouldn't distract the user from the main objective of the game. (UR_MINIGAME)

## NON FUNCTIONAL REQUIREMENTS

Requirement ID	Description	Fit Criteria
NFR_USER_INSTRUCTIONS	Instructions for the game should be available to the user. (UR_EASE)	The game must contain a screen that details the controls.
NFR_READABILITY	Users shall be able to read any text easily. (UR_EASE)	Text legible from 5 metres away.
NFR_MENU_UNDERSTANDABLE	Users shall be able to navigate the menu without any prior experience. (UR_EASE, UR_STARTSCREEN)	Button on the menu should operate in <0.5 seconds. User taken to the next screen.

NFR_SAVE	System shall clearly outline to the user all the possible methods of saving. And also let the user know how saving works with the game. <b>(UR_GAME_SAVE)</b>	In the user manual and also clear labelled “save” buttons when it is possible to save
NFR_ARTWORK	Colour scheme and artwork should be fun and engaging. It shouldn't hinder the users' understanding of the game. <b>(UR_INTEREST)</b>	90% of users should be able to understand what's happening on screen during a game cycle.
NFR_USER_INTERACTIONS	User interactions with the game should be instant. No delay. <b>(UR_INSTRUCT_ENGINES)</b>	User actions displayed with <1 second.
NFR_ERROR_PRONE	System shall not be broken by glitches. <b>(UR_EASE)</b>	9/10 runs of the game should be free of glitches.
NFR_INGAME_WARNING	Warnings direction towards the user should be easy to understand and read. <b>(UR_ATTACK_WARNING)</b> <b>UR_REFILL_WARNING)</b>	Text legible from 5 metres away.
NFR_BUTTONS	All buttons should be labelled and have a known purpose to the user and be easily accessible. <b>(UR_EASE)</b>	Labels should be legible from 5 metres away.
NFR_TIMER	User should be made aware when they have limited time left in the game. <b>(UR_ATTACK_WARNING)</b>	Accuracy of timer should be +/- 0.25 seconds
NFR_OPERATORS	System shall be operable by users with any level of gaming experience. <b>(UR_EASE)</b>	Clearly labelled with text legible from 5 metres away. <del>Not technical language.</del> 90% of english speaking users must be able to understand all language use
NFR_AUDIT	System shall keep saved files. <b>(UR_GAME_SAVE)</b>	Save files must persist after the game executable has been closed
NFR_RESUME_TIME	System should load a saved game. <b>(UR_GAME_SAVE)</b>	Acceptable time of 5 seconds

NFR_SAVED_CONTENT	<p>Saved content will be data about the level that a particular user reached.</p> <p><del>Saved content will not include where the user is up to in a particular level.</del></p> <p>Saved content will include where the user is up to in a particular level (UR_GAME_SAVE)</p>	<p>User should be able to resume load a game from a save file.</p>
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