

Requirements

Group 27 BlackCatStudios

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Taking over from Group 30 Triple 10

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User and System Requirements Introduction

Using the product brief, we initially discussed fundamental components that the software must have to fulfil customer demands. Once refined, these became the user requirements, each of which were then expanded to define the system requirements to detail how the user requirements would be met.

In terms of research for the requirements, we revisited the requirements elicitation lectures on the VLE to remind ourselves of this process and what the different categories (user, functional, and non-functional) represent. We used our requirements from assessment 1 as well as the information we gathered in our interview with Tommy Yuan as a base for gathering the new requirements. We then conducted a group discussion where we would brainstorm more ideas for the requirements. We drew our ideas on a whiteboard and noted down which ones were best for the project. Other alternatives such as Google Jamboard were considered but we preferred the conventional way as we preferred meeting in person. Besides, we did some research on the internet about the general requirements conventions. We also did some research by playing similar cooking games such as Overcooked, Pizza Panic and Diner Dash.

Having acquired any additional requirements from the client, we reorganised each requirement into either the user, functional and non-functional requirements table. This was done as a group so that each member could have their input on whether the requirement was necessary, and to ensure that the requirements were as detailed as possible. The requirements were also given IDs so that they could easily be referred back to throughout the project. The requirements have been referenced in the unit tests that have been written and manual tests

User Requirements

ID	Description	Category	Priority
UR_MENU	The game shall provide a main menu from which the user can access different modes	Menu/ start	Should
UR_SCENARIO_MODE	The game should have a scenario mode with a fixed number of customers	Gameplay	Must
UR_ENDLESS_MODE	The game should have an endless mode	Gameplay	Must
UR_SCENARIO_SETTINGS_CUSTOMER	The user should be able to set the number of customers before starting the scenario mode	Menu/ start	Must
UR_HOW_TO_PLAY	The game must have a menu to tell the player how to play	Menu/gameplay/controls	Must
UR_CHEF_CONTROLS	The game shall allow the player to switch between the available chefs	Controls	Must
UR_CHEF_MOVEMENT	The game shall allow the user to move the selected chef	Controls	Must
UR_NUM_OF_CHEFS	There should be 3 chefs by default and the user should be able to spend their earnings to call more back from leave	Gameplay/ earnings	Must

UR_INTERACTION	The game shall allow the user to interact with objects in front of it. Without inappropriate/unexpected interactions.	Controls	Must
UR_WORKSTATIONS	The game should have stations for cutting, baking, frying, and serving	Food preparation/ map	Must
UR_COLLECT_ITEM	The game should allow the user to collect ingredients and add them to the top of a stack	Food preparation	Must
UR_REMOVE_ITEM	The game should allow the user to place an ingredient from the top of the stack onto a cooking station	Food preparation	Must
UR_DROP_ITEM	The game should allow the user to “drop” an item removing the item permanently	Food preparation	Must
UR_CYCLE_ITEM	The game should allow the user to cycle through the items the chef is holding.	Food preparation	Must
UR_CUSTOMER_ORDER	The game shall allow customers to arrive at the counter and demand a dish	Order/ customers	Must
UR_GAME_MAP	The game shall display a game map of a kitchen consisting of work stations	Map	Must

UR_PREP	The game shall allow the player to carry out a series of tasks to fulfil orders	Food preparation	Must
UR_BURN_FOOD	If the player leaves an item cooking for too long the food should be burned	Food preparation	Must
UR_TIMER	The game shall keep track of how long it takes for a player to complete the scenario or endless mode	Gameplay	Must
UR_PANTRY	The game shall allow the player to access ingredients via a pantry	Food preparation/map	Must
UR_ACCESSIBILITY	The game should be accessible for all users	Gameplay/ accessibility	Must
UR_ENJOYABILITY	The game should be engaging and enjoyable	Gameplay	Should
UR_POWERUP	The game should allow the user to collect 5 different power ups changing their gameplay and making certain actions easier	Powerups/ gameplay	Must
UR_DIFFICULTY	The user should be able to select the difficulty of the game	Gameplay	Must
UR_SAVE_GAME	The game should allow the user to save at any point during it so they can carry on where they left of when they next play	Save game	Must

UR_LOAD_GAME	The user should be able to load a save file so that they can carry on where they left off	Load Game	Must
UR_PAUSE_MENU	The game should have pause functionality.	Pause	Should
UR_LEADERBOARD	The game could have a leaderboard that can be accessed at the menu. The leaderboard could track how long the users survive for in the endless mode	Leaderboard/ end game	Could
UR_EARNINGS	The user should be able to earn in game money when serving customers	Earnings	Must
UR_SPEND_EARNINGS	The user should be able to spend their earnings on unlocking more workstations and more chefs	Earnings	Must
UR_CUSTOMER_COUNTER	The game should count and display the maximum customers served and the current number of customer served (endless mode)	Customers	Must
UR_REPUTATION_POINTS	The game must have reputation points that act as lives for the player.	Gameplay/ reputation points	Must
UR_CUSTOMER_TIME_LIMIT	Customers will want their food to be served to them within certain time limits	Order/ customers	Must

UR_SCENARIO_END	The scenario mode should end when the user has served all the selected number of customers or they have lost all of their reputation points	End game	Must
UR_ENDLESS_END	The endless mode should end when the user loses all their reputation points	End game	Must

Functional Requirements

ID	Description	Category	User Requirements
FR_MENU	The game should display a main menu that is initially loaded when the program is started	Menu/ start	UR_MENU
FR_START	An option shall be provided to begin one of the modes	Menu/ start	UR_MENU

FR_SCENARIO_SELECT_CUSTOMERS	When the user selects the scenario mode, there should be a menu which allows them to select a maximum number of customers	Menu/ start	UR_SCENARIO_SET_CUSTOMERS
FR_CONTROL_CHEF	The player should be able to control the chefs using the mouse and keyboard. The player shall not be able to control both chefs at one time	Controls	UR_CHEF_MOVEMENT
FR_CHEF_ORIENTATION	The chef should face correct direction to the way it is moving	Controls	UR_CHEF_MOVEMENT
FR_CHANGE_CHEF	The game shall allow the player to begin a task with one chef, then switch to the other without affecting the continuation of said task.	Controls	UR_CHEF_CONTROLS
FR_SHOW_COOK	The game shall highlight which chef is currently being controlled by the player	Gameplay	UR_CHEF_CONTROLS
FR_ORDER	The game shall limit each customer to a single order of either a salad, burger, pizza, or jacket potato	Gameplay	UR_CUSTOMER_ORDER
FR_ARRIVAL	The customers may arrive as individuals or as groups of up to three as the game goes on.	Customers	UR_CUSTOMER_ORDER

FR_SCENARIO_NUM_CUSTOMERS	Before the scenario mode is started, the user should be prompted to set the maximum number of customers or use the default number. There is an unlimited number of customers in the endless mode.	Customers	UR_CUSTOMER_ORDER
FR_PAUSE_MENU_BUTTON	The game should have a button on-screen or a key on the keyboard that when pressed pauses the game and makes the game wait indefinitely until the user is ready	Controls/ gameplay	UR_PAUSE_MENU
FR_PAUSE_MENU_SAVE_BUTTON	The game should have a button in the pause menu that when pressed will save the game	Save game	UR_PAUSE_MENU, UR_SAVE_GAME
FR_HOW_TO_PLAY_BUTTON	The game should display a button that when pressed will take the player to a menu explaining how to play the game	Menu/gameplay/controls	UR_HOW_TO_PLAY
FR_DISPLAY_ORDER	The game shall display current customer orders for the player to easily see	Orders	UR_CUSTOMER_ORDER
FR_RECIPES	The game shall allow the player to access the recipes for different dishes in some way	Controls	UR_CUSTOMER_ORDER

FR_POWERUP	There should be a menu to select power ups. Each power up will change the gameplay to benefit the player	Power ups	UR_POWERUP
FR_DIFFICULTY	The speed customers approach, and difficulty of their order must change with different difficulties	Gameplay	UR_DIFFICULTY
FR_SAVESTATE	When the user saves the game, the state needs to be saved in non-volatile form.	Save game	UR_SAVE_GAME
FR_LOADSTATE	When the user starts up the game if they have a save file they should be able to load it	Load game	UR_LOAD_GAME
FR_SOUND	The game should have sound effects and songs to make the game more enjoyable	Sound	UR_ENJOYABILITY
FR_ASSETS	The game should have assets to make the game more enjoyable	Assets	UR_ENJOYABILITY
FR_TIMER	The game shall display a timer on the screen of the player's progress	Gameplay	UR_TIMER
FR_STEP_VALIDATION	Each preparation step shall require input from the player and the correct ingredient(s).	Food preparation	UR_PREP

FR_COOK_BUSY	A chef shall carry out a preparation step for a given period of time, making this chef inoperable until the task is complete	Food preparation	UR_PREP
FR_DISH_VALIDATION	The game shall provide verification of a dish when served to check if correct. The user should not be able to serve the wrong food item to a customer	Food preparation	UR_PREP
FR_MULTI_ITEM	The player shall be able to handle multiple ingredients at one time at a single workstation	Food preparation	UR_GAME_MAP
FR_INGREDIENTS_LIMIT	The player shall only be allowed to place ingredients that they are currently carrying on a workstation	Food preparation	UR_GAME_MAP
FR_INGREDIENTS_INFINITE	The ingredient stations should have infinite ingredients	Food preparation	UR_PANTRY
FR_DISCARD	The game shall allow the player to discard any ingredients mistakenly accessed	Food preparation	UR_PANTRY
FR_INVENTORY	The game shall limit the player to how many ingredients can be stored at once	Food preparation	UR_PANTRY

FR_PANTRY	The player shall choose which ingredients to take from the pantry	Food preparation	UR_PANTRY
FR_ORDER_TIMER	Keeps track of the amount of time that an order has been active for to a certain limit	Order	UR_REPUTATION
FR_DECREASE_REPUTATION	If the order timer reaches the limit for a customer, decrease the customer's reputation points	Order	UR_REPUTATION
FR_ZERO_REPUTATION	If the reputation reaches 0, the game ends	Gameplay	UR_REPUTATION, UR_SCENARIO_END, UR_ENDLESS_END

Non-Functional Requirements

ID	Description	Category	User Requirements	Fit Criteria
NFR_SCENARIO_TIME	The scenario mode should have a fast paced rhythm	Gameplay	UR_TIMER	The scenario will take around 5 to 6 minutes
NFR_PLATFORMS	The product shall be accessible on a range of platforms	Compatibility	UR_ACCESSIBILITY	The game will run on Windows/Linux and possibly on Mac
NFR_SCALABILITY	The product shall be scalable to accommodate reasonable screen sizes	Compatibility	UR_ACCESSIBILITY	Should fit on all displays of at least the same resolution as the game window
NFR_MEMORY	The game shall minimise memory usage	Optimisation	UR_ENJOYABILITY	No memory leaks and less than 1GB of memory usage

NFR_LAUNCH_TIME	The game should launch quickly after the .JAR file is clicked	Optimisation	UR_ENJOYABILITY	Should launch within 20 seconds after the jar file is clicked.
NFR_INSTRUCTIONS	The game shall be simplistic and provide instructions to support the player	Accessibility	UR_ENJOYABILITY	Having read the instructions 90% of players will understand the controls and aim of the game
NFR_LEADERBOARD	The game could display a leaderboard after someone has completed it.	Leaderboard/ game end	UR_LEADERBOARD	If included, should be displayed <3s after the game ends so that the user can move on. Only for endless mode.
NFR_GAME_END	When the player wins/loses the scenario mode or runs out of reputation points in the endless mode, the game should be stopped and a results screen should be displayed	Game end	UR_SCENARIO_END, UR_ENDLESS_END	Should be displayed <3 seconds after the game ends
NFR_SAVE_GAME	When the user saves the game, data relating to number of customers served, number of reputation points, money earned, stations and chefs bought, should be stored in a file	Save game	UR_SAVE_GAME	Data should be saved as soon as the user presses save. Should write and read data within 2 seconds.
NFR_SPEED_POWERUP	When the user buys the speed powerup it should immediately take effect and last until it wears off.	Power ups	UR_POWERUP	Powerup should take <1 second to activate and should last 20 seconds

NFR_FUSTRATION_STALL_POWERUP	When the user buys the frustration stall powerup it should immediately take effect and last until it wears off.	Power ups	UR_POWERUP	Powerup should take <1 second to activate and should last 60 seconds
NFR_SUPERFOOD_POWERUP	When the user buys the superfood power up it should give the player a food item to immediately feed a single customer	Power ups	UR_POWERUP	A single customer should be immediately fed
NFR_MEGAFOOD_POWERUP	When the user buys the mega food powerup it should feed all customers that want the next food item the player gives, rather than one customer	Power ups	UR_POWERUP	All customers that want the same item as the one given will be fed
NFR_BUYREPUTATIONPOINT_POWERUP	When the user buys the buy reputation point powerup they should immediately receive a single reputation point, up to a maximum amount.	Power ups	UR_POWERUP	Powerup should take <1 second to activate and player should have no more than 5 points
NFR_ASSEMBLY_STATION_ITEM_LIMIT	The player should be able to place multiple items on the assembly station, up to a limit	Food Preparation	UR_WORKSTATIONS	The player should not be able to place >4 items on an assembly counter.

From taking over this project we have assumed some of our previous requirements from our customer. Such as the inclusion of a leaderboard ect. We plan to meet these requirements on top of the ones we've taken from Triple10

