# Requirements

## Contents

## Introduction

To get these requirements conducted interviews with stakeholders, then using this as well as the requirements document we came up with the following: user requirements, functional requirements, non-functional requirements and some constraint requirements. These are all written in plain english in order to make it easy to understand for the customer and stakeholders. However, they contain enough detail to be useful for software developers.

Single Statement of needs:
We will make a cooking game that requires cooks to make a number of recipes requested by a customer. They will need to manage many stations and prepare a number of raw ingredients, stack them on a plate and deliver them to the customer. It is possible to burn ingredients if they are left unattended. If a customer has to wait too long for their order the user will lose points.

## User Requirements

| ID | Description | Priority |
|---|---|---|
| UR_COOKS | Cooks must have the ability to move. | High |
| UR_CUSTOMERS | Customers must arrive and have a timer which will go down slowly, it dish is not severed in time then demand score is decremented | High |
| UR_GAMEMODES | A scenario game mode where configurable number customers arrive and they have to be served in their time limit, must have some remaining reputation points to complete. | High |

| UR_STATIONS | Must have areas where cooks are able to chop raw vegetables, cook and flip patties, bake raw ingredients, serving, picking up ingredients and a counter for customers to wait. | High |
|---|---|---|
| UR_RECIPES | This recipes for salad, burger, pizza and jacket potatoes | High |
| UR_SHOP | A menu where after the game is over cooks can invest money into buying other stations and unlocking recipes. Also they will be able to call other cooking staff back from leave | Low |
| UR_IDLE | Must have an idle mode where the game will play itself when nobody is playing the game | High |
| UR_ACCESSIBILITY | Game will be played by a lot of different people on a open day, some may be far away from the screen and environment will be noisy | High |

# Functional Requirements

| ID | Description | User Requirements |
|---|---|---|
| FR_COOKS_MOVEMENT | The cooks will move up, down, left, right with given the input using a keyboard | UR_COOKS |
| FR_COOKS_SWITCH | The user will be able to switch cooks by pressing a key | UR_COOKS |
| FR_COOKS_FLIP | Must have the ability to flip items on the stove. This must be done before patty burns. | UR_COOKS |
| FR_COOKS_CHOP | Must have the ability to chop items on the a section | UR_COOKS |
| FR_COOKS_GRAB | Cooks must be able to grab items, and can hold up to 2 items, one in each hand. | UR_COOKS |
| FR_COOKS_PLACE | Cooks must be able to place items down in the same order they picked them up in. | UR_COOKS |
| FR_CUSTOMER_ARRIVE | Customers arrive at random time intervals and request a recipe with a dialog box that includes the required ingredients. In scenario they will arrive on there own then in groups | UR_CUSTOMERS |
| FR_GAMEMODE_1 | A scenario game mode where configurable number customers arrive and they have to be served in their time limit, must have some remaining reputation points to complete. | UR_GAMEMODES |
| FR_GAMEMODE_2 | A "endless" game mode where customers will arrive until all reputation points are lost. The number of customers served before all points are lost is the score. | UR_GAMEMODES |
| FR_COOKING_STATION_1 | Must have an area where cooks are able to chop raw vegetables. Vegetablesmust be cut properly | UR_STATIONS |

| FR_COOKING_STATION_2 | Must have an area where cooks are able to cook and flip patties, this needs to be completed in a time limit otherwise patties will burn and they have to be discarded. | UR_STATIONS |
|---|---|---|
| FR_COOKING_STATION_3 | This is the baking section where cooks are able to bake raw ingredients | UR_STATIONS |
| FR_SERVING_STATION | This is an area where cooks can place the made recipes and customers can receive their order | UR_STATIONS |
| FR_INGRIDENT_STATION | This is an area where cooks can can pick up raw ingredients to prepare, these will automatically regenerated and cooks can pick up multiple | UR_STATIONS |
| FR_COUNTER | This is an area where the customers will wait for their order. | UR_STATIONS |
| FR_RECIPE_1 | This recipe is the salad and contains: chopped lettuce, chopped tomatoes and chopped onions. These must be stacked on a plate. | UR_RECIPES |
| FR_RECIPE_2 | This recipe is the burger and contains: fried patty (must be formed first), a toasted bun. These must be stacked on a plate. | UR_RECIPES |
| FR_RECIPE_3 | This recipe is a pizza and contains: a base, a sauce, a topping all stacked and then cooked. | UR_RECIPES |
| FR_RECIPE_4 | This recipe is a jacket potato containing: a cooked potato and a topping stacked on a plate. | UR_RECIPES |
| FR_RECIPE_DISPLAY | Recipes will be displayed as pictures of the ingredients to make up the order | UR_RECIPES |
| FR_SCORE | This is a variable that is initially 3 and when a demand is not met it will decrement | UR_CUSTOMERS |
| FR_CUSTOMER_WAIT | Customers will wait at a counter until their order is being prepared. If they wait too long there will be a points penalty. | UR_CUSTOMERS |
| FR_CUSTOMER_DEMAND | When a customer arrives they will request an item and give a time limit. If this isn't completed there will be a points penalty. | UR_CUSTOMER |
| FR_MONEY | This is a score when a customer is served within the time frame the player will be rewarded some money. | UR_SHOP |
| FR_SHOP_MENU | This is menu where the player can spend coins on more stations and cooks | UR_SHOP |
| FR_IDLE_MODE | An option in the game menu where user can choose to not play, this will run a function that plays the game for the user on repeat | UR_IDLE |
| FR_TIMER | To ensure scenario game mode doesn't go on for too long there will be a timer that should be clear and somewhere. | UR_GAMEMODES |

# Non-Functional Requirements

| ID | Description | User Requirements | Fit Criteria |
|---|---|---|---|
| NFR_MOVE_ACCESSIBLE | The game should have basic controls that are easy to learn. These intuitive and require little training | UR_MOVE, UR_ACCESSIBILITY | All ages and abilities should be able to move |
| NFR_GAME_SHORT | The game should be short as people will be playing it on the open day | UR_GAMEMODES | Scenario mode < 5 minutes |
| NFR_CONTROL_RESPONDS | The response time should be real-time and instant. | UR_MOVE | The controls should have instance > 0.01 seconds |
| NFR_STACKING_ITEMS | The items should be able to be stacked in any order. | UR_RECIPES | Prepped ingredients need to be present |
| NFR_COOKING_TIME | Chopping and cooking should be completed in reasonable time. | UR_INTERACT | Takes > 5 seconds |
| NFR_CUSTOMER_DEMAND | Must allow for enough time to complete recipe | UR_CUSTOMER | Demand > 60 seconds |
| NFR_SWITCH | Switching must be fast and responsive. | UR_SWITCH | Only slight cooldown time 1 second |
| NFR_WAITING | The game must provide an easy way of seeing recipe requests and time left to complete. | UR_CUSTOMER | Have a bar telling to customers have ordered and how long the cooks have to complete the order. |
| NFR_AUDIO_CUES | Game should have audio cues to action that a relevant and recognisable | UR_COOKS_INTERACT | Audio will help the game be engaging and confirm action has been performed |
| NFR_ENGAMENT | Games should be fun and make it easy to play. | UR_GAMEMODES | Game should be engaging for all users |
| NFR_DIFFICULTY | Games should be easy to pick up and play by anyone regardless of how much experience they have. | UR_GAMEMODES | Understandable for people how to play regardless of age, experience and language. |
| NFR_ACCESSIBILITY | The game will played in busy environment, so needs to be designed with this in mind | UR_ACCESSIBILITY | The game must not rely on sound, colour or text too much |