Project Dreamer / Crafting Module

Architecture/Design Document

Change History

Version: 0.1
Modifier: Joshua Griffis
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Description of Change: Design Document started

Introduction

This document describes the architecture and design for the Project Dreamer application being developed by Radical Dreamers. Project Dreamer is a Third Person Role Playing Game where you explore the dream world and interact with its inhabitants and fight bad dreams.

The purpose of this document is to describe the architecture and design of the Project Dreamer application in a way that addresses the interests and concerns of all major stakeholders. For this application the major stakeholders are:

- Developers – they want an architecture that will minimise complexity and development effort.
- Project Manager – the project manager is responsible for assigning tasks and coordinating development work. He or she wants an architecture that divides the system into components of roughly equal size and complexity that can be developed simultaneously with minimal dependencies. For this to happen, the modules need well-defined interfaces. Also, because most individuals specialise in a particular skill or technology, modules should be designed around specific expertise. For example, all UI logic might be encapsulated in one module. Another might have all game logic.
- Maintenance Programmers – they want assurance that the system will be easy to evolve and maintain into the future.

Design Goals

The goals we decided on for the design were:

- A list of recipes that the player knows
- A list of ingredients needed for each recipe
- Will only be able to craft if the player has all the ingredients
- When an item is crafted it will remove the used ingredients and add the item to the inventory

System Behaviour

The use case view is used to both drive the design phase and validate the output of the design phase. The architecture description presented here starts with a review of the expected system behaviour in order to set the stage for the architecture description that follows. For a more detailed account of software requirements, see the requirements document (GDD).

The crafting system will be used by navigating to the Crafting menu. The menu will pull the known recipe list from the Party Manager and display it. When the recipe is clicked it will show information on the item like the description and its ingredients that it gets from the Database Manager. The menu will put the ingredients into a list showing the name and amount needed for

each unique item. The craft button will only work if the player has the ingredients and if they do have them it will let the player know the item was created.

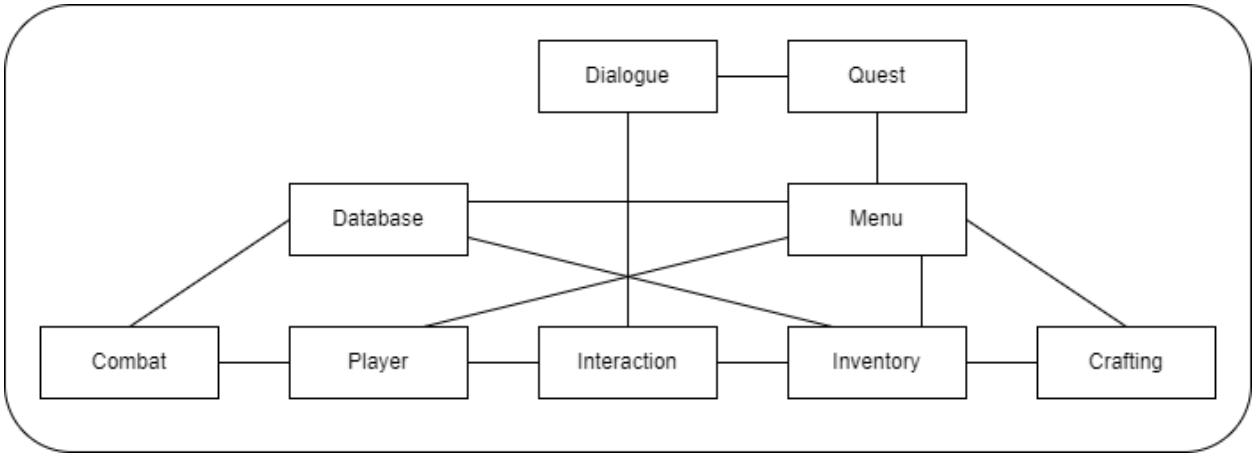
Logical View

The logical view describes the main functional components of the system. This includes modules, the static relationships between modules, and their dynamic patterns of interaction.

In this section the modules of the system are first expressed in terms of high level components (architecture) and progressively refined into more detailed components and eventually classes with specific attributes and operations

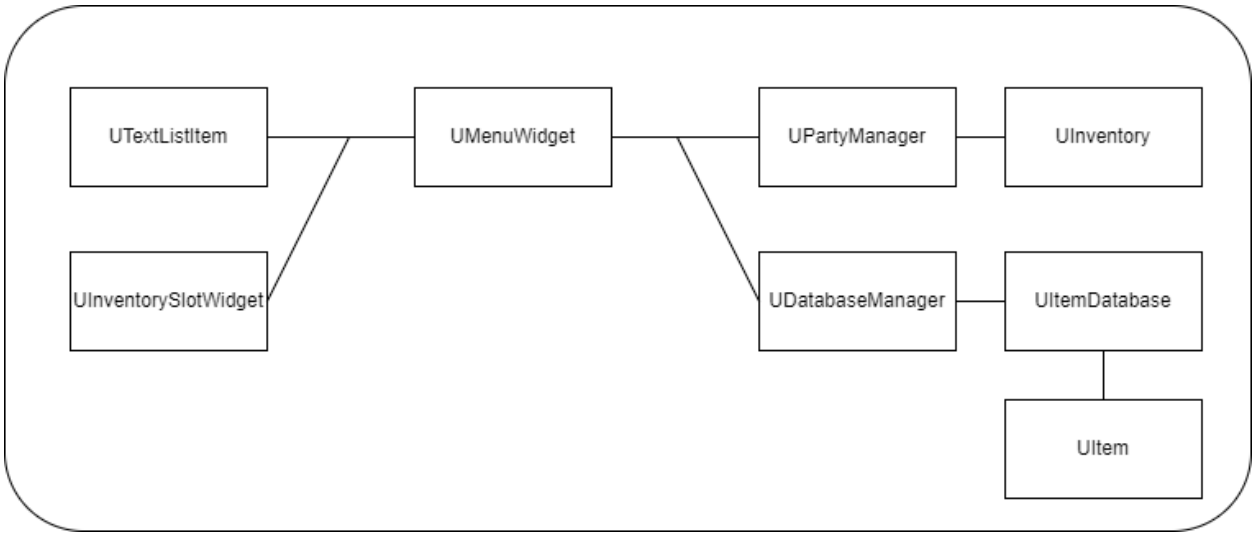
High-Level Design (Architecture of the Entire system)

The high-level view or architecture consists of 9 major components:



- **Player:** is the main control over the character in the world and allows the user to interact with the world.
- **Database:** stores the data needed for many features to work.
- **Interaction:** handles the objects the player can interact with like talking to characters, opening chests, opening doors, etc.
- **Dialogue:** is responsible for handling the flow of conversations and displaying dialogue to the user.
- **Inventory:** manages the items picked up by the player and money stored. Allowing the player to use them at a later point.
- **Menu:** allows interaction with some modules and features.
- **Combat:** allows interaction between enemies and player characters as they fight. Controls the flow of battle and which battler may act.
- **Quest:** allows the user to have stored data for quests and be able to receive rewards upon completion.
- **Crafting:** allows the player to combine multiple items together to create new items

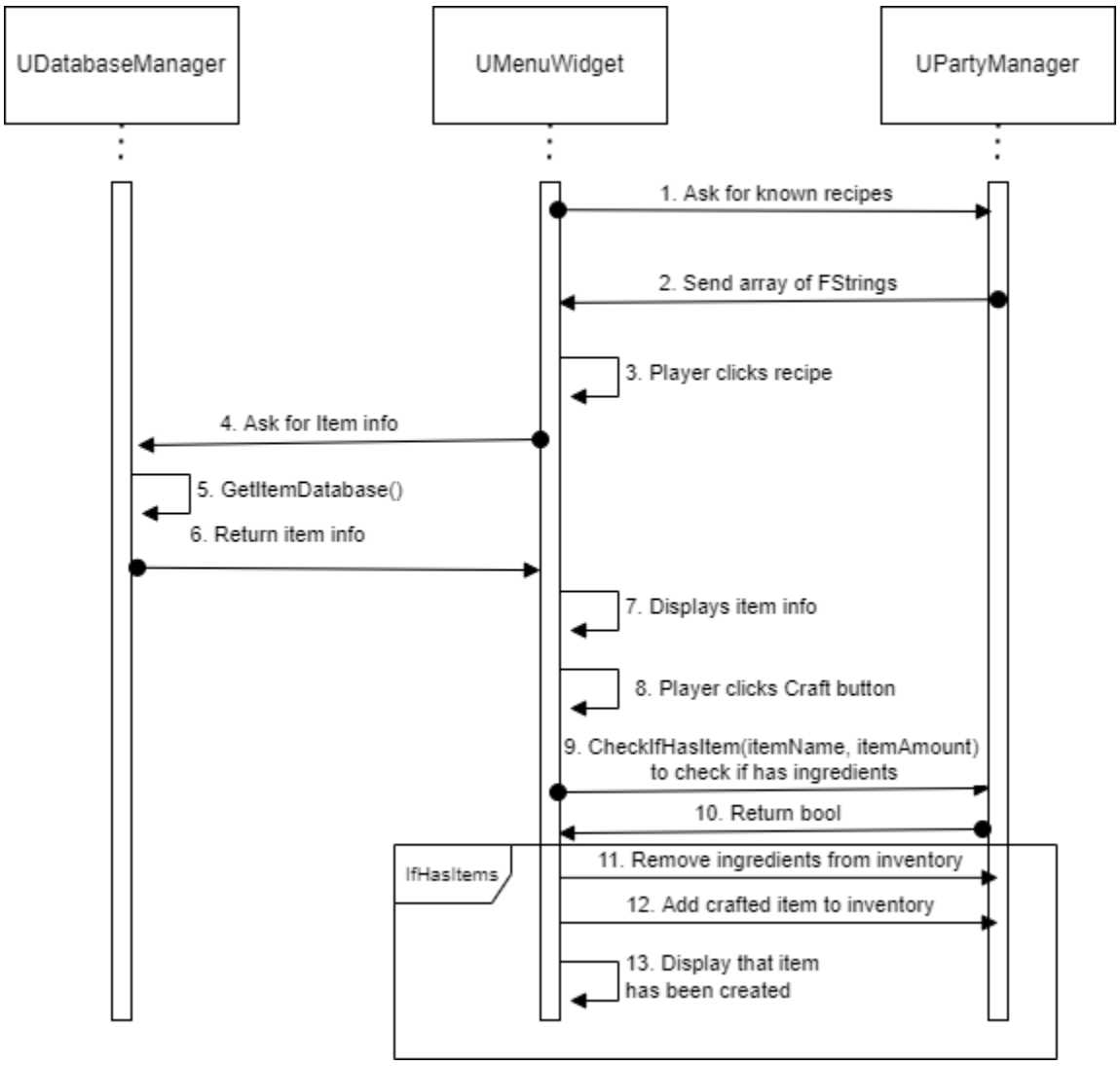
Mid-Level Design of Crafting Module



Detailed Class Design of the Crafting Module

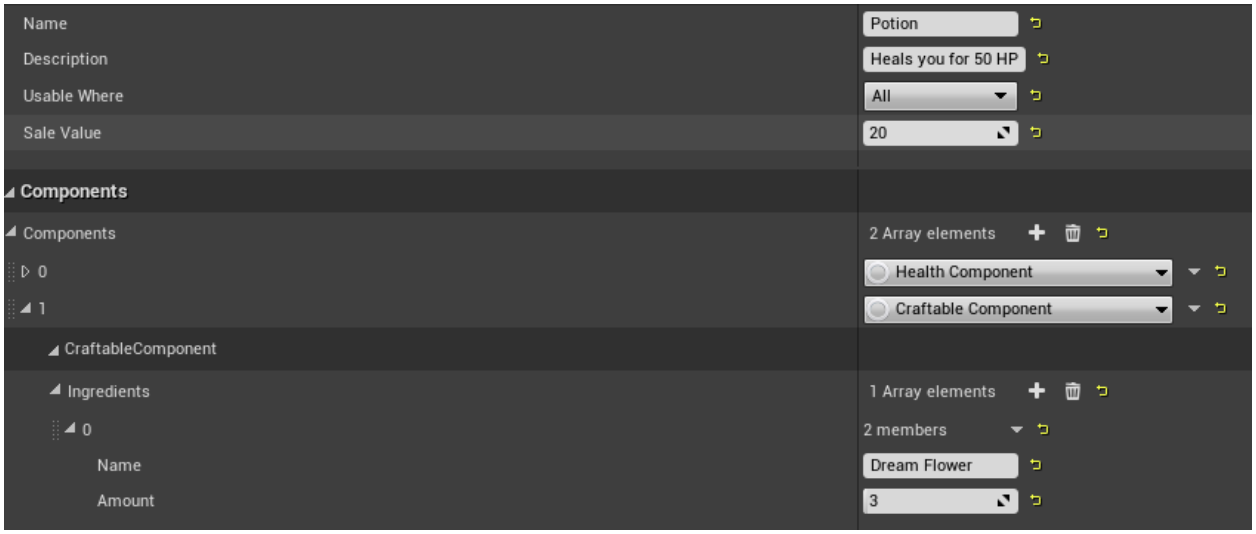
See UMenuWidgetRelationsUML.png

Process View of the Crafting Module



Use Case View

When creating an Item, there is a component you can add to the item called a CraftableComponent that when put on an item you can give it a list of ingredients needed to make the item. The crafting system will check for this component to gain crafting information on the items in the recipe list.


Name
Potion
Description
Heals you for 50 HP
Usable Where
All
Sale Value
20
Components
Components
2 Array elements
0
Health Component
1
Craftable Component
CraftableComponent
Ingredients
1 Array elements
0
2 members
Name
Dream Flower
Amount
3