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Introduction

This application is designed to help you manage and create custom cocktails using a sophisticated ingredient management system and automated mixing capabilities.



System Requirements

- Operating System: Raspberry Pi 5

- Python 3.x

- Node.js and npm (for Electron)

- Serial port access (for hardware communication)

- Minimum 4GB RAM

- 500MB free disk space

Raspberry Pi 5 Support

The application is fully compatible with Raspberry Pi 5 running Linux. Here are the specific requirements and setup instructions:

Hardware Requirements:

- Raspberry Pi 5 (4GB or 8GB RAM recommended)

- USB Serial Adapter (if using external serial device)

- HDMI Display

- USB Keyboard and Mouse

- Power Supply (5V/5A recommended)

Linux Setup Commands:

1. Update system packages:

sudo apt update && sudo apt upgrade -y

2. Install required dependencies:

sudo apt install -y python3-pip nodejs npm git

3. Install Python packages:

pip3 install pyserial

4. Set up serial port permissions:

sudo usermod -a -G dialout $USER

sudo chmod 666 /dev/ttyUSB0 # Replace ttyUSB0 with your actual port

5. Configure display (if using HDMI):

sudo raspi-config

# Navigate to Display Options > Resolution

# Select your preferred resolution

6. Enable required interfaces:

sudo raspi-config

# Enable I2C, SPI, and Serial interfaces

7. Set up auto-start (optional):

sudo nano /etc/xdg/autostart/cocktail-mixer.desktop

# Add the following content:

[Desktop Entry]

Type=Application

Name=Cocktail Mixer

Exec=/usr/bin/python3 /path/to/your/app.py

X-GNOME-Autostart-enabled=true

8. Monitor system resources:

# Check CPU temperature

vcgencmd measure\_temp

# Monitor CPU usage

top

# Check memory usage

free -h

# View system logs

journalctl -u cocktail-mixer

Troubleshooting Raspberry Pi:

1. Serial Port Issues:

ls -l /dev/tty\* # List available serial ports

dmesg | grep tty # Check kernel messages for serial devices

sudo chmod 666 /dev/ttyUSB0 # Fix permissions if needed

2. Display Issues:

tvservice -s # Check display status

tvservice -p # Power on HDMI

tvservice -o # Power off HDMI

3. Network Issues:

ifconfig # Check network interfaces

ping 8.8.8.8 # Test internet connectivity

hostname -I # Show IP address

4. System Monitoring:

htop # Interactive process viewer

iotop # Monitor disk I/O

vcgencmd get\_throttled # Check for throttling

Installation Guide

1. Clone the repository

2. Install Python dependencies:

pip install -r requirements.txt

3. Install Node.js dependencies:

npm install

4. Run the application:

python app.py

Main Features

- Ingredient Management

- Cocktail Creation

- Pipe Assignment

- Real-time Hardware Communication

- Customizable Interface

- Cocktail Database Management

User Interface Guide

Main Navigation:

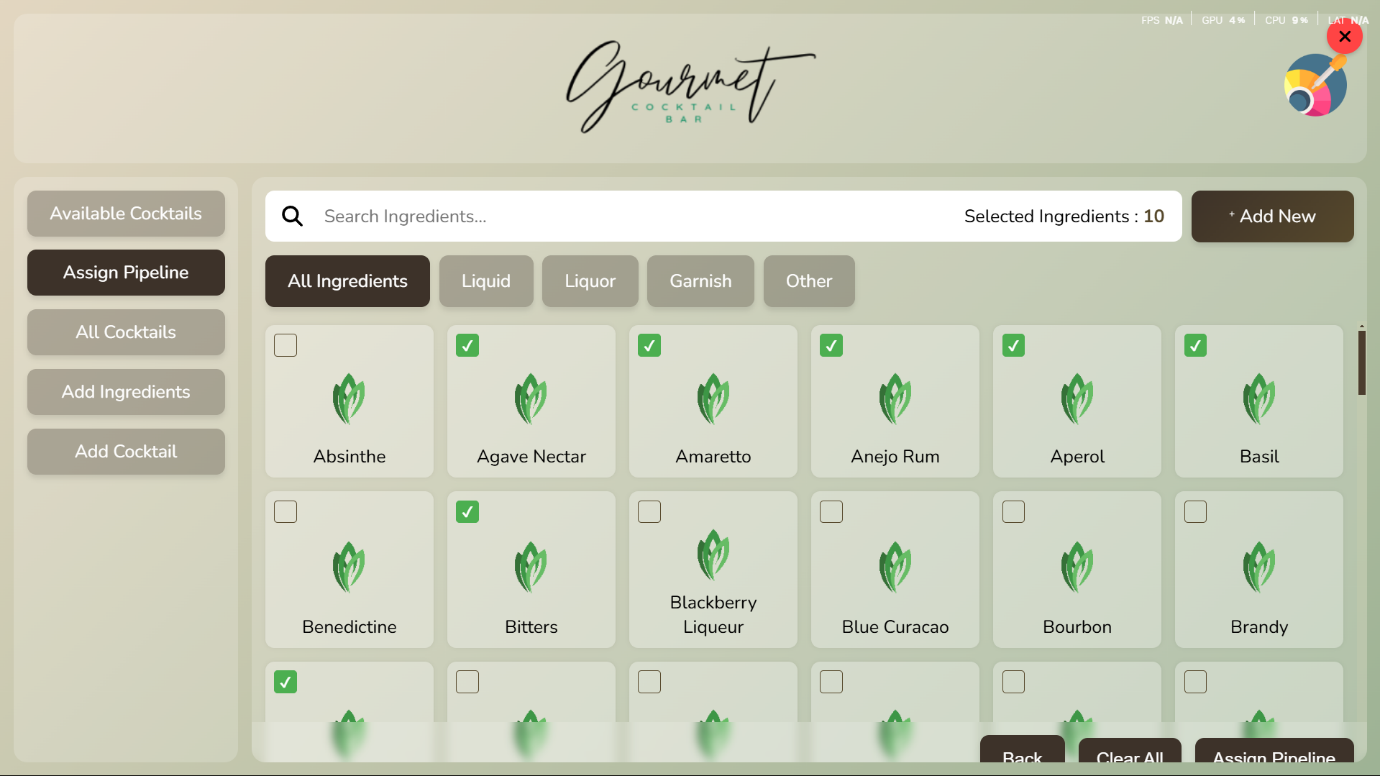
The application has several main sections accessible through the navigation buttons:

1. Find Cocktail

- Search and select ingredients

- View available cocktails

- Filter ingredients by type



2. Add Ingredients

- Add new ingredients to the database

- Upload ingredient images

- Set ingredient properties

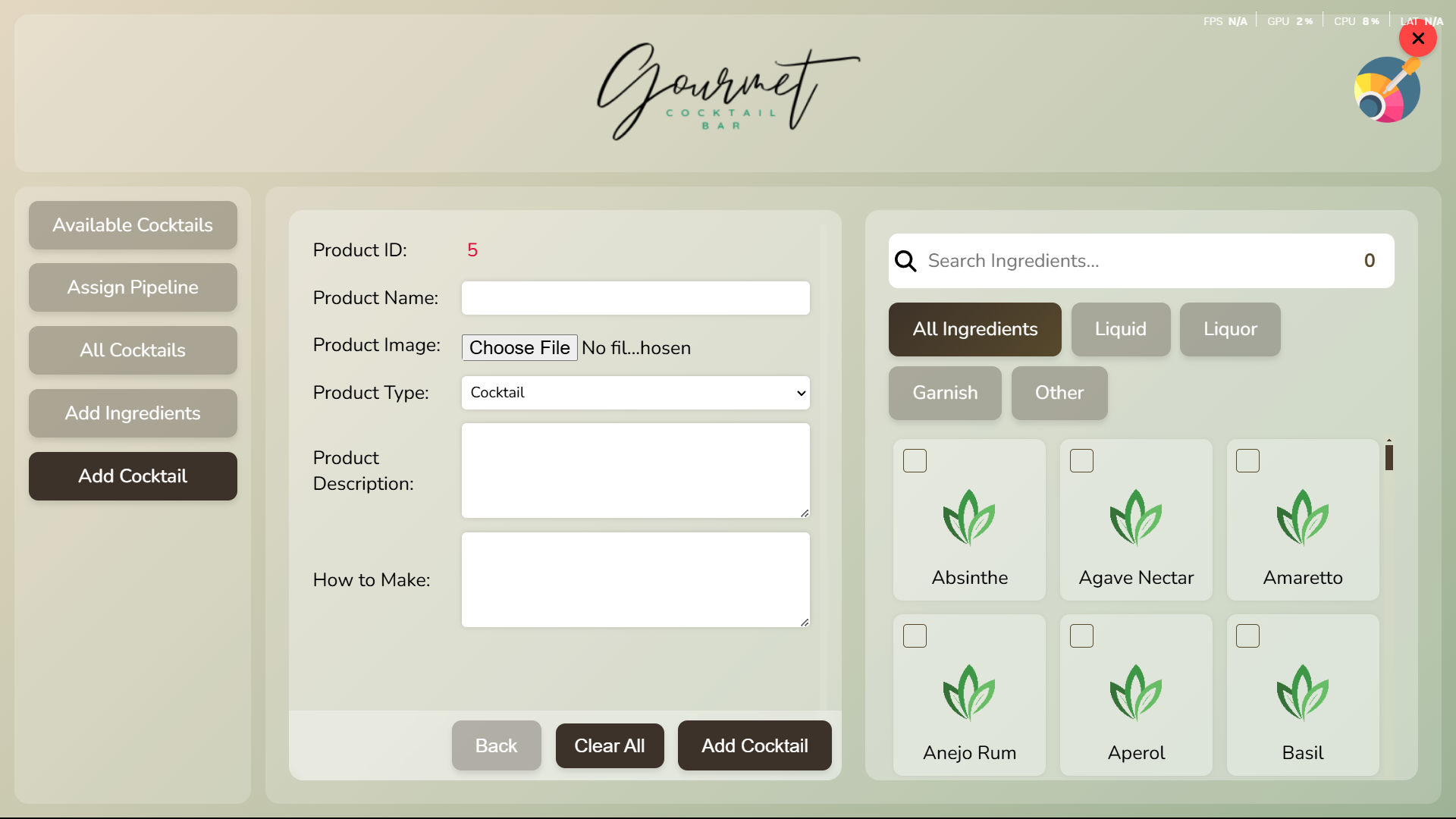


3. Add Cocktail

- Create new cocktail recipes

- Define ingredient proportions

- Set cocktail properties



4. All Cocktails

- View complete cocktail database

- Search and filter cocktails

- Edit existing cocktails

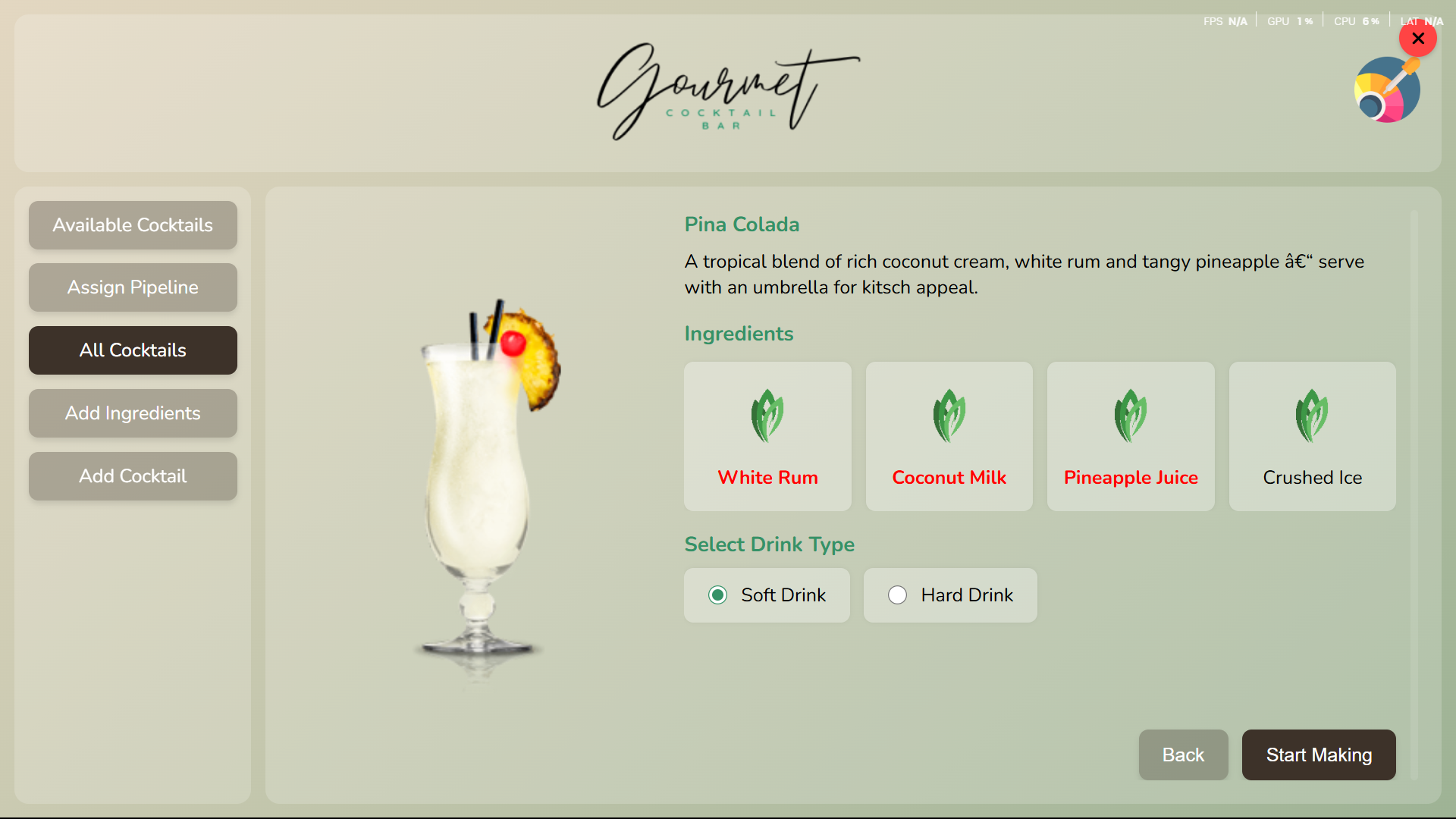


5. Cocktail Details

- View detailed information about cocktails

- See ingredient lists

- View preparation instructions

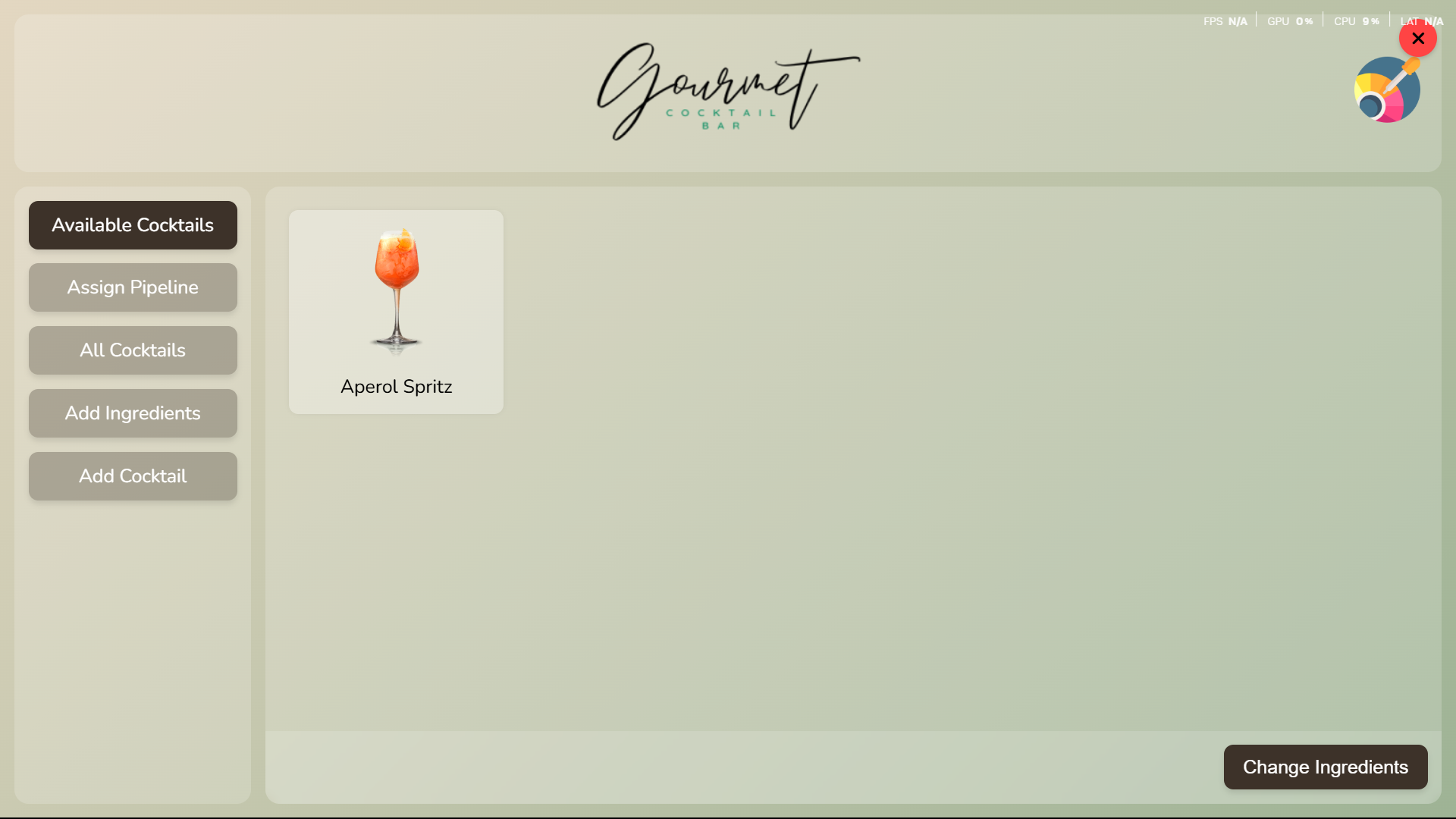


6. Available Cocktails

- See cocktails that can be made with current ingredients

- Check ingredient availability

- Select cocktails for preparation

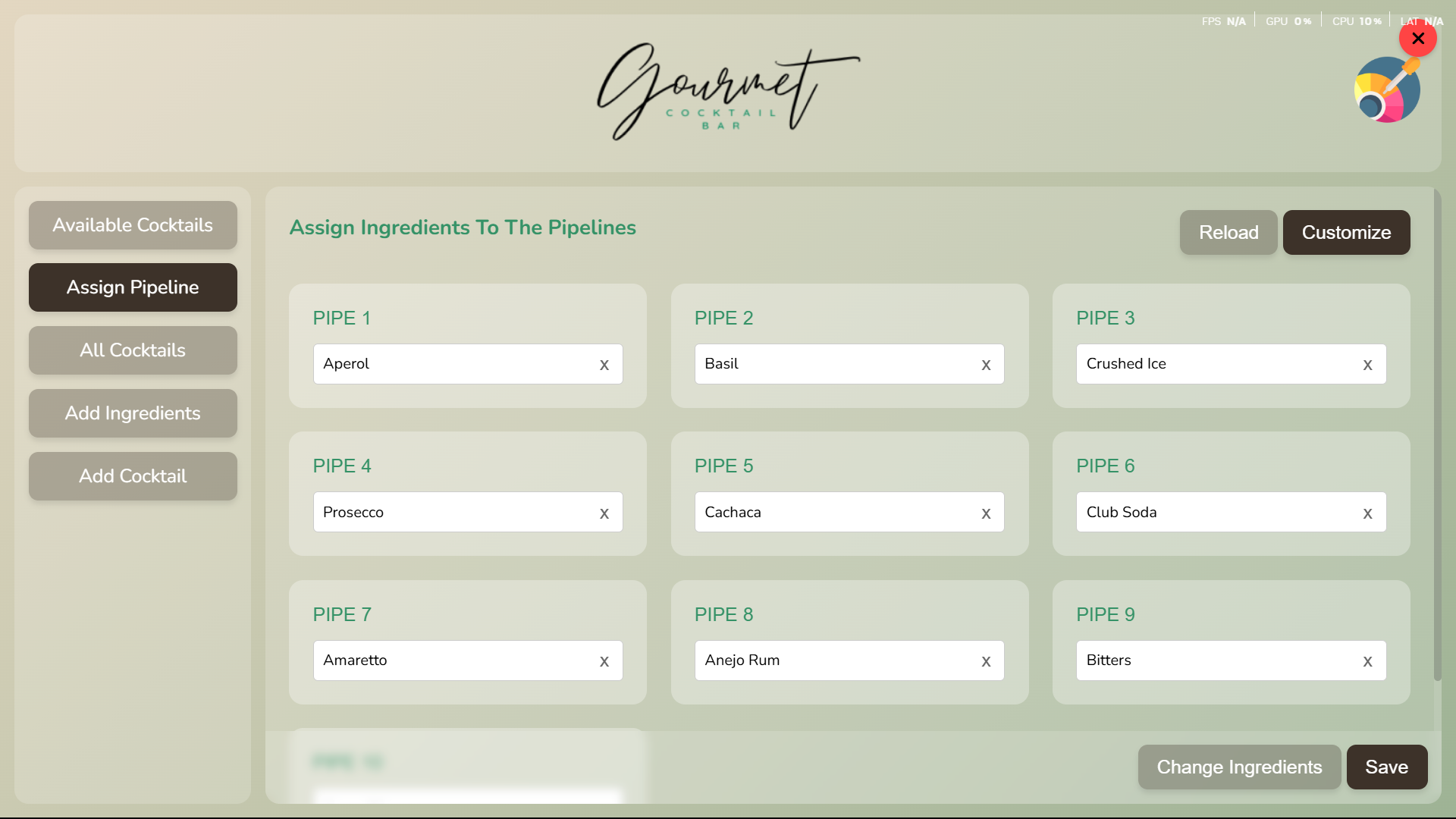


7. Assign Pipe

- Configure pipe assignments

- Set up ingredient-to-pipe mapping

- Save pipe configurations



Button Functionalities

Main Navigation Buttons:

-Change Ingredients: Opens ingredient search and selection interface

- Add Ingredients: Opens new ingredient creation form

- Add Cocktail: Opens new cocktail creation form

- All Cocktails: Shows complete cocktail database

- Cocktail Details: Displays detailed cocktail information

- Available Cocktails: Shows possible cocktails with current ingredients

- Assign Pipe: Opens pipe configuration interface

Action Buttons:

- Search: Filters ingredients or cocktails based on input

- Clear All: Removes all selected ingredients

- Customize: Opens interface customization options

- Generate: Creates pipe assignments

- Save: Stores current configuration

- Back: Returns to previous screen

Customization Options

The application offers several customization features:

1. Interface Colors:

- Button background colors

- Button hover colors

- Text colors

- Background colors

2. Pipe Configuration:

- Number of pipes (1-100)

- Pipe-to-ingredient mapping

- Default configurations

Troubleshooting

Common Issues and Solutions:

1. Serial Port Connection:

- Check if the correct port is selected

- Verify hardware connection

- Restart the application

2. Image Processing:

- Ensure images are in supported formats

- Check file permissions

- Verify storage space

3. Database Issues:

- Check file permissions

- Verify JSON file integrity

- Restart the application

*For additional support or questions, please contact the system administrator.*

*Note: This documentation is subject to updates and improvements. Please check for the latest version.*