

# AN ONTOLOGY-BASED RESTAURANT SYSTEM

A REPORT SUBMITTED TO THE UNIVERSITY OF MANCHESTER  
FOR THE DEGREE OF BACHELOR OF SCIENCE  
IN THE FACULTY OF SCIENCE AND ENGINEERING

2023

Student id: 10452849

Department of Computer Science

# Contents

<b>Abstract</b>	<b>5</b>
<b>Declaration</b>	<b>6</b>
<b>Copyright</b>	<b>7</b>
<b>Acknowledgements</b>	<b>8</b>
<b>1 Introduction</b>	<b>9</b>
1.1 Evaluation Plan . . . . .	9
<b>2 Background</b>	<b>10</b>
<b>3 Design &amp; Methodology</b>	<b>11</b>
3.1 Requirements . . . . .	11
3.1.1 Functional Requirements . . . . .	11
3.1.2 Non-Functional Requirements . . . . .	12
<b>4 Results</b>	<b>14</b>
<b>5 Evaluation</b>	<b>15</b>
<b>Bibliography</b>	<b>16</b>
<b>A Example of operation</b>	<b>17</b>

**Word Count: 1626**

## **List of Tables**

## List of Figures

# **Abstract**

AN ONTOLOGY-BASED RESTAURANT SYSTEM

Thomas Hayter

A report submitted to The University of Manchester  
for the degree of Bachelor of Science, 2023

The aim of the thesis is to ...

# **Declaration**

No portion of the work referred to in this report has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

# Copyright

- i. The author of this thesis (including any appendices and/or schedules to this thesis) owns certain copyright or related rights in it (the “Copyright”) and s/he has given The University of Manchester certain rights to use such Copyright, including for administrative purposes.
- ii. Copies of this thesis, either in full or in extracts and whether in hard or electronic copy, may be made **only** in accordance with the Copyright, Designs and Patents Act 1988 (as amended) and regulations issued under it or, where appropriate, in accordance with licensing agreements which the University has from time to time. This page must form part of any such copies made.
- iii. The ownership of certain Copyright, patents, designs, trade marks and other intellectual property (the “Intellectual Property”) and any reproductions of copyright works in the thesis, for example graphs and tables (“Reproductions”), which may be described in this thesis, may not be owned by the author and may be owned by third parties. Such Intellectual Property and Reproductions cannot and must not be made available for use without the prior written permission of the owner(s) of the relevant Intellectual Property and/or Reproductions.
- iv. Further information on the conditions under which disclosure, publication and commercialisation of this thesis, the Copyright and any Intellectual Property and/or Reproductions described in it may take place is available in the University IP Policy (see <http://documents.manchester.ac.uk/DocuInfo.aspx?DocID=24420>), in any relevant Thesis restriction declarations deposited in the University Library, The University Library’s regulations (see <http://www.library.manchester.ac.uk/about/regulations/>) and in The University’s policy on presentation of Theses

# Acknowledgements

I would like to thank...



# Chapter 1

## Introduction

### 1.1 Evaluation Plan

To test the ontology system, I plan to conduct user studies, where I will ask people that I know to carry out certain tasks using the system, such as adding or removing a dish from the system, and searching for dishes with certain parameters. These tasks will cover each aspect of the functional requirements of the system to completely evaluate how successfully the system meets the criteria.

It is important that the participants of the study are comfortable and give an honest review of the system. To do this, I aim to avoid putting them under any pressures. I will not place them under any time constraints to complete the tasks, and make sure that when I propose the study to them that the estimation is accurate, while also a slight overestimate. It is also important that the participant doesn't feel any pressure to falsely support the system, when it is in fact failing.

## **Chapter 2**

### **Background**

# Chapter 3

## Design & Methodology

### 3.1 Requirements

#### 3.1.1 Functional Requirements

Functional requirements for the system:

- The system needs to be able to store all dishes from the menu of a restaurant, along with the ingredients that make up that dish.
- The system should be able to produce a list of these dishes to the customer.
- The owner of a restaurant should be able to add ingredients and dishes to the system.
- A customer needs to be able to query the system for dishes they desire.
- Therefore, the system should filter the dishes by various dietary requirements, such as diets, allergies and filter by calories.
- The system should have the option to hide calorie information to those who do not want to see it.

Possible additions to the system:

- The system could filter dishes by how a meal has been prepared and cooked.
- The system could calculate new information for a dish based on whether a customer would like to add or remove an ingredient.

- The system could allow for a restaurant owner to register new allergens and diets to filter by.

### **3.1.2 Non-Functional Requirements**

The non-functional requirements of the project are that it must:

- The system must be intuitive, easy to use, and provide appropriate feedback when changes are made to the system.
- The interface must conform to Ben Shneiderman's 8 golden rules [2].
- A restaurant owner should require minimal training to use the system.
- A customer should need no training to use the system.
- The system should allow customers to search for dishes as fast as possible. This is important as the restaurant and the customer will want the customer to make a decision quickly on what dish they would like to order.

Dietary Requirements to filter by:

- Vegetarian
- Vegan
- Pescetarian
- Religious diets e.g. Halal / Kosher preparation, Hindu and Sikh.

The most common allergies [1]:

- Peanut
- Ceoliac (gluten)
- Wheat
- Cow's milk
- Eggs
- Fish
- Shellfish
- Tree nuts
- Soybeans

## **Chapter 4**

### **Results**

## **Chapter 5**

## **Evaluation**

# Bibliography

- [1] Wesley Burks, Ricki Helm, Steve Stanley, and Gary A Bannon. Food allergens. *Current opinion in allergy and clinical immunology*, 1(3):243–248, 2001.
- [2] Ben Shneiderman. The eight golden rules of interface design.



# **Appendix A**

## **Example of operation**

An appendix is just like any other chapter, except that it comes after the appendix command in the master file.