Lab Report for Software Engineering course
Lab 5: Demand Change and Prototype Development

Wang, Chen 16307110064
Liu, Jiaxing 17302010049
Huang, Jiani 17302010063
Tang, Xinyue 16307110476
School of Software
Fudan University

May 20, 2019

Contents

1 Demands of this lab **2**
- 1.1 Requirements of this lab . . . 2
  - 1.1.1 Documentation . . . 2
  - 1.1.2 Code Style . . . 2
  - 1.1.3 Project Management . . . 2
- 1.2 Background on the change of demand . . . 2
  - 1.2.1 Drink Customization . . . 3
  - 1.2.2 Currency change . . . 3
  - 1.2.3 Language change(localization) . . . 3
  - 1.2.4 Sales strategies . . . 3
- 1.3 Specifications of the Lab . . . 3

2 Division of work for this lab **4**

3 Analysis of the demands **5**

4 General design for the implementation **6**

5 Detailed design for the implementation **7**
- 5.1 Switch Language Implementation . . . 7
  - 5.1.1 Language Constant Files . . . 7
  - 5.1.2 Language Service Classes . . . 7
- 5.2 Switch Currency Implementation . . . 7
  - 5.2.1 Currency Property Files . . . 7
  - 5.2.2 Currency Service Classes . . . 7

6 Problems encountered in this project **8**

7 Measures against demand change **9**

8 Tools and literature involved in this project **10**

9 Conclusion for the process of accomplishing this project **11**

Chapter 1

Demands of this lab

1.1 Requirements of this lab

According to the documentation of the lab assigner, this lab should satisfy the requirments in the following perspectives:

1.1.1 Documentation

In the documentation, we need to accomplish two parts, that is, we need to: Understand the needs of this experiment, complete the requirements document; Organize overall design documentation and detailed design documentation based on requirements.

1.1.2 Code Style

Before the experiment, our group members should agree on the code specification and the unified code style.

1.1.3 Project Management

The project is generally hosted on the Huawei Devcloud platform, on which platform we are going to finish the following tasks: Project management should be arranged based on the DevCloud platform, including adding work items, assigning work items, associating work items, managing work item status, and other project management functions;

Issues in the development process need to be recorded and managed on DevCloud, including defect reports in integrated development;

Collaborative development based on Git, submit project documentation and code on a team basis.

1.2 Background on the change of demand

Starbubucks's coffee shop has received a large amount of financing and decided to open branches in different countries and regions.

In order to adapt to the habits of users in different regions, it is necessary to develop a project prototype with basic functions, and then customize the system for different regions.Customized development needs to consider the following factors:

1.2.1 Drink Customization

At least 2 beverages need to be customized for local features (beverages defined in Lab4 are system default beverages).

1.2.2 Currency change

We need to switch to the corresponding currency according to different countries and regions, for example, a cappuccino in China 20CNY, a cappuccino in the US $3 (do not consider currency exchange).

1.2.3 Language change(localization)

The system needs to switch the system language to the language of the corresponding country and region according to the language of different countries and regions. The range of language switching is visible to all system users (sales personnel) and customers (beverage buyers). For example, when the system user inputs, the input content should be the language of the corresponding country and region; after the order is successful, the customer sees The transaction content should be switched to the language of the corresponding country and region.

1.2.4 Sales strategies

A good sales strategy can bring huge benefits, and the system's default sales strategy is the sales strategy defined in Lab4. Because sales strategies can change as external markets change, systems are required to add and remove sales strategies in a pluggable manner.

1.3 Specifications of the Lab

Chapter 2

Division of work for this lab

Chapter 3

Analysis of the demands

Chapter 4

General design for the implementation

Chapter 5

Detailed design for the implementation

5.1 Switch Language Implementation

The switch of language will be mainly displayed in the user interface, so all the information that need to be multi-translated will be separately placed into different constant files. In this iteration of implementation, we only instantiate the Chinese and English versions. And the correspondent service classes will use a typical mechanism called reflection to implement the switch of different constant language files.

In the following two sections, the detailed design of constant files and language service classes will be respectively clarified.

5.1.1 Language Constant Files

The two constant files are positioned in the constant package. In these two files, all the variables (there are no methods) are qualified with public static final String since they are all constant strings.

To our attention, all the necessary variables should have the same names in all the language files to maintain the availability of reflection.

5.1.2 Language Service Classes

To follow the idea of prototype development, all the concrete service classes should implement their corresponding interfaces. The interface make it clear what the service will implement and its parameters. The most notable design pattern in this class is single-instance pattern.

5.2 Switch Currency Implementation

5.2.1 Currency Property Files

5.2.2 Currency Service Classes

Chapter 6

Problems encountered in this project

Chapter 7

Measures against demand change

Chapter 8

Tools and literature involved in this project

Chapter 9

Conclusion for the process of accomplishing this project

Bibliography

[1] Wikipedia contributors. (2019, March 22). JUnit. In *Wikipedia, The Free Encyclopedia*. Retrieved 14:53, April 1, 2019, from `https://en.wikipedia.org/w/index.php?title=JUnit&oldid=888928403`