JAVA Jigsaw Puzzle

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ABSTRACT

With the development of society, the computer has become an indispensable part of people’s daily life, especially in the study, and it plays an important role in their respective fields. Under the influence of the rapid development of computer, computer games are also thriving. Jigsaw puzzle is one of them. It has a wide range of applications, but also for young and old. The game can not only exercise manual ability, observation ability, but also cultivate the ability of cooperation between people.

KEYWORDS

Java2 Platform Standard Edition, Jigsaw Puzzle

1. INTRODUCTION

Puzzle is a very classic game, because it is relatively simple and interesting, both young and old are more suitable. The design of the puzzle for each Java language designer is a good exercise opportunity for language improvement and advanced.

Puzzle game design is complex, it involves a wide range, involving many aspects, if not considered and designed, it will be difficult to developing the game successfully. In this design of puzzle, involving the graphical interface display and update, data collection and update, and in the development of this game, but also the use of class inheritance mechanism and some design patterns. Therefore, how to design and develop the puzzle, is a great help to improve the level of development of Java and the ability to design a system (Zhao, 2015). In the process of design and development, it is necessary to deal with the relationship between the various classes of inheritance, but also to deal with the corresponding package of each class and coordinate the logical dependencies between the various modules and data communications (Gao, 2015).

2. JIGSAW PUZZLE DEVELOPMENT TOOLS

2.1. Eclipse Development Tools Introduced

Eclipse is an open source, Java based extensible development platform, with a focus on developing a fully functional, commercial, industrial platform for highly integrated tools (Huang, 2015). Eclipse is just a framework and a set of services for building a development environment through plug-in components. Eclipse comes with a standard set of plug-ins, including Java development tools (Java Development Tools, JDT) (Zou, 2015).

Eclipse is a famous cross platform free integrated development environment (IDE), initially mainly used Java language development, but there are people through plug-ins that as other computer languages such as C++ and Python development tools. Eclipse is just a framework platform that
provides a plug-in development environment (PDE), which is aimed at software developers who want to extend Eclipse, allowing the ability to build tools that seamlessly integrate with the Eclipse environment. Support for many plug-ins makes Eclipse having the flexibility which other features relatively fixed IDE software is difficult to have. Because everything in Eclipse is a plug-in, to provide users with a consistent and unified integrated development environment, so that all tool developers have the same place to play.

2.2. The Main Part of Eclipse Development
A is mainly composed of Eclipse project, Eclipse tool project and Eclipse technology project, including four parts - Eclipse Platform, JDT, CDT and PDE. DT support for Java development, CDT support C development, PDE used to support plug-in development. Eclipse Platform is an open and extensible IDE, and provides a common development platform. It provides the basis for building blocks and building and running the foundation of integrated software development tools, Eclipse Platform allows tool builders to develop tools that seamlessly integrate with other tools. The Eclipse SDK (Software Developer Package) is a combination of the Eclipse Platform, JDT, and PDE components that can be downloaded at once. These sections provide a rich development environment that allows developers to efficiently build tools that can be seamlessly integrated into the Eclipse Platform. The Eclipse SDK is a combination of Eclipse project production tools and third-party software from other open sources. Software product by Eclipse project to publish in CPL, third-party components have their own license agreement.

3. DEMAND ANALYSIS

3.1. OOA Method Introduction
Object-oriented analysis (OOA) according to the object-oriented thinking to analyze the problem in a system development after the business investigation. OOA is very different from structural analysis. OOAS is called on the basis of the system survey data, OO method for the need for material analysis and collation, rather than lost management of the status quo and methods of analysis (Lindholm, 2016).

In the case of a specific analysis of OOA, generally follow the five steps (Li, 2014):

Step1, it is to determine the object and class. The object here is an abstraction of the data and its handling, which reflects the ability of the system to preserve and process certain things in the real world. A class is a description of the collection of common objects and methods of multiple objects, including how to build a class and create a description of a new object.

Step 2, determine the structure. Structure refers to the complexity and relevance of the problem domain. The class member structure reflects the generalization-specialization of the relationship, the whole - partly reflects the relationship between the whole and the local.

Step 3, determine the subject. The theme refers to the overall profile of things and the overall analysis model.

Step 4, determine the properties. An attribute is a data element that can be used to describe an instance of an object or class structure that can be given in the diagram and specified in the storage of the object (Weiss, 2016).

Step 5, determine the method. The method is a method that must be processed after receiving a message: the method is defined in the diagram and specified in the storage of the object. For each object and structure, those methods used to add, modify, delete, and select itself are implicit (although it is defined in storage, but not in the figure), while others are displayed.

3.2. Functional Requirements
The user’s need for jigsaw puzzle has the following features:
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