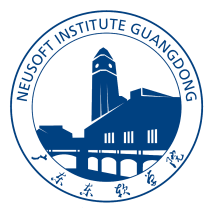
****本科毕业设计（论文）**

**基于Express的垃圾分类平台的设计与实现**

**Design and Implementation of Garbage Classification Platform Based on Express**

|  |  |
| --- | --- |
| **院 （系）** | 计算机学院 |
| **专 业** | 软件工程 |
| **班 级** | 11班 |
| **学 号** | 16210121117 |
| **学生姓名** | 黄举华 |
| **指导教师** | 孙小贝 |
| **提交日期** | 年 月 日 |

**内容摘要**

近年来，随着人们生活水平的提高，人们对环境保护的意识日益增强，垃圾分类成为必然的关系。但是，在日常生活中，垃圾分类基本上是手动完成的。由于人们缺乏对于垃圾的认识，进而导致在分类垃圾的时候出错率非常高，既不熟悉垃圾的类别，又没有相关垃圾分类知识，所以要求每一个人都能自如区分每一个垃圾是非常困难的。

然而现在多地区城市基本建成垃圾分类处理系统，以及“史上最严”垃圾分类《生活垃圾管理条例》正式实施，开始普遍推行强制垃圾分类。在大部分已经对垃圾分类立法的城市，都在相关条例中明确了对个人违规投放的处罚。46个重点城市中，有25个城市明确了对个人和单位违规投放生活垃圾的处罚，针对个人违规投放，多数城市最高罚200元，单位违规投放或随意倾倒堆放生活垃圾的，最高处以5万元罚款。

可见，垃圾分类已经不在是一个只停留在谈论的层面，而是要落实到每个城市，每个地区，每个家庭，甚至每个人，都要做到随手的垃圾要进行分类投放。所以在人们熟悉垃圾分类的同时，加上使用一些软件工具以及一些知识传播平台来引导和教导人们正确对垃圾进行分类非常重要。

本篇论文是对实现一个基于Express垃圾分类平台的分析和研究，该平台是基于Express框架设计和实现的Web端垃圾分类平台，而作为一个垃圾分类平台，首要的功能就是能够帮助用户搜索到指定垃圾的类别，以及提供最新和最权威的垃圾资讯以及相关政策，正确引导和教导用户对垃圾的认知与了解，清楚如何投放每一个垃圾。因此随着垃圾分类政策在全国陆续推开，垃圾分类辅助工具越显得重要。

**关键词：**Express；垃圾分类；垃圾分类平台

**Abstract**

In recent years, with the improvement of people's living standards, people's awareness of environmental protection is increasing, garbage classification has become an inevitable relationship. However, in daily life, garbage classification is basically done manually. Due to people's lack of understanding of garbage, which leads to a very high error rate when classifying garbage. They are not familiar with the garbage category and have no relevant garbage classification knowledge, so it is very difficult to require everyone to be able to distinguish each garbage freely.

However, at present, many cities in many regions have basically established waste classification and treatment systems, and "the most stringent in history" waste classification "Regulations on domestic waste management has been formally implemented, and forced waste classification has been widely implemented. In most of the cities that have legislated on garbage classification, the punishment for the illegal placement of individual is specified in the relevant regulations. Among the 46 key cities, 25 cities have made clear the punishment for the illegal placement of domestic waste by individuals and units. For the illegal placement of domestic waste by individuals, the maximum penalty in most cities is 200 yuan. For the illegal placement or random dumping of domestic waste by units, the maximum penalty is 50000 yuan.

It can be seen that garbage classification is not only a discussion level, but also to be implemented in every city, every region, every family, and even everyone, so that the garbage at will should be classified and put in. So while people are familiar with garbage classification, it is very important to use some software tools and some knowledge dissemination platforms to guide and teach people to classify garbage correctly.

This paper is an analysis and Research on the implementation of an express based garbage classification platform, which is a web-based garbage classification platform designed and implemented based on the express framework. As a garbage classification platform, the primary function is to help users search for the specified garbage categories, provide the latest and most authoritative garbage information and related policies, guide and Teach users to understand garbage and know how to put every garbage. Therefore, with the development of waste classification policy in China, waste classification auxiliary tools become more and more important.

Key words: Express; garbage classification; garbage classification platform

**目 录*(黑体三号加粗)***

***（空一行）***

**1.(黑体四号加粗)**……………………………………………………………1

**1.1 (** 宋体四号加粗**)** ………………………………………………………1

1.1.1 (宋体四号**)**  ……………………………………………………… 1

1.1.2 (宋体四号**)** ……………………………………………………… 4

**1.2 (**宋体4号加粗**)** ………………………………………………………7

**1.3 (**宋体4号加粗**)** ………………………………………………………12

**2. (黑体四号加粗)**  ………………………………………………………16

**2.1** (宋体四号加粗) ………………………………………………………16

**2.2** (宋体四号加粗) ………………………………………………………24

2.2.1 (宋体四号) ………………………………………………………24

2.2.2 (宋体四号) ………………………………………………………30

2.2.3 (宋体四号) ………………………………………………………31

**2.3** (宋体四号) …………………………………………………………… 33

**3.(黑体 四号加粗)** …………………………………………………………36

**3.1** (宋体四号加粗)…………………………………………………… 38

**3.2** (宋体四号加粗) ………………………………………………………43

**4.(黑体 四号 加粗)** ………………………………………………………45

**参考文献(黑体 四号 加粗)** …………………………………………………48

**附录 (黑体 四号 加粗)** ……………………………………………………50

**致谢 (黑体 4号 加粗)** ……………………………………………………50

*（注：**目录行间距为25磅）*

***目录不标页码***

***论文正文的排版：***

1. *换章必须换页，没按章节安排结构的无须换页*
2. *第一级标题用三号粗黑体，居中上下空一行*
3. *第二级标题用小三粗黑体，靠左缩进2个字符，上空一行*
4. *第三级标题用四号黑体，靠左缩进2个字符，不空行*
5. *第四级标题用小四号黑体，靠左缩进2个字符，不空行*
6. *正文小四号字宋体，行距为固定值20磅*
7. *图题及图中文字用5号宋体*
8. *参考文献另起一页，参考文献标题用三号粗黑体，居中上下空一行，参考文献正文为五号宋体*
9. *致谢标题用三号粗黑体 ，居中上下空一行，致谢正文为小四号宋体*
10. *附录标题用三号粗黑体 ，居中上下空一行，附录正文为小四号宋体*

***有关论文排版的其它说明：***

1. *论文格式的电子版为Word文件，文件统一命名为“专业+学号+姓名”。*
2. *纸张大小及版式：统一用A4纸（210mm×297mm）打印，边距设为： 上 2.54cm，下 2.54cm，左 3.17cm，右 2.5cm。正文行距为固定值20磅。*
3. *注意文中代表变量的英文字母必须用斜体，其它用正体。微分号d、圆周率π、自然底数e、矩阵转置T均应为正体。*
4. *文章中的英文均用Times New Roman 字体。*

***正文开始标页码***

参□考□文□献

□□***空一行*** *黑体三号居中*

*字体要求；中文参考文献 宋体五号。英文参考文献 Times New Roman五号*

***此部分接着论文正文部分编排页码，页码位置与论文正文相同，***

***参考文献后另起一页接“附录”或者“致谢”，格式略***