**IIT CSP586: Software Modeling Dev with UML**

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Final Report

**Group8 Team Member:**

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**# Amazon Best Sale Intelligent Monitoring (Docker Edition)**

Amazon Best Sale Intelligent Monitoring is a back-end program based on Flask, using python, html+css+js, echarts, LSTM, wordcloud, which is deployed on Docker. This Program can grasp the real-time data each hour,including the name, sale, price, score and comments of best sale products from the amazon, and generating the visulization of the tendency of products. Saler can make intelligent marketing strategy.

**Web Architecture:**

图示

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图形用户界面, 表格

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1. **Web Overview**

The index page <dashboard>:

电脑游戏的屏幕

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The category detailed page (such as clothing):

电脑游戏的屏幕

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1. **Requirements Model**

**2.1 Use Case Diagram**

图示

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**2.2 Use Cases**

|  |  |  |
| --- | --- | --- |
| **Actor** | **Use Case** | **Brief Description** |
| User | Request URL | Send the request to the serve through URL, waiting for response |
| Select the Catagory | Choose the category, including ['Clothing', 'Jewelry', 'Shoes', 'Watches'] |
| Watch the Visualization | Watch the dashboard or detailer category’s charts and data |
| Watch Sale Count | Watch the four categories sales’ count |
| Watch Prediction Of Total Sale Based On LSTM | Watch the tendency of sale by hour and prediction |
| Watch Word Cloud Based On LDA Algorithm | Watch the significant word of comments |
| Watch Average Score | Watch the average score decided by customers |
| Watch Total Sale Detail | Watch the detailed sale by hour |
| <<service>>  crawl | Crawl Data From Amazon | Continuously Crawl the Data From Amazon and Store in DB |
| <<service>>  echarts | Visualize the Data | Visualize Data Based on DB |

**2.3 Activity Diagram For Getting Data**

图示

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**2.4 Activity Diagram For Visualizing Total Sale And Predication**

图示, 日程表

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**3 Analysis Model**

**3.1 Domain Model**

日程表

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**4 Analysis Model**

**4.1 Design Model**

Word, 日程表

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**4.2 Package Diagram**

图示

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**4.3 Deign Pattern (above)**

**factory method design pattern:** I use factory method design pattern, because there are many charts required to be visualized. I use a creator and linked with interface\_chart, and its realization classes.

**stategy design pattern:** I use stategy design pattern, because some sale need the anaylst to predict the data, and I prepare three algorithms for them, including LSTM, RNN and ARIMA.

**4.4 Sequence Diagram**

**4.4.1 Sequence Diagram: Create\_Category**

日程表

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**4.4.2 Sequence Diagram: Create\_Line\_Chart**

图片包含 图形用户界面

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**4.4.3 Sequence Diagram: Create\_Word\_Cloud**

日程表

中度可信度描述已自动生成