

**IIT CSP586: Software Modeling Dev with UML**  
Name: Muhao Chen      IIT ID Number: A20456889  
Final Report

**Group8 Team Member:**

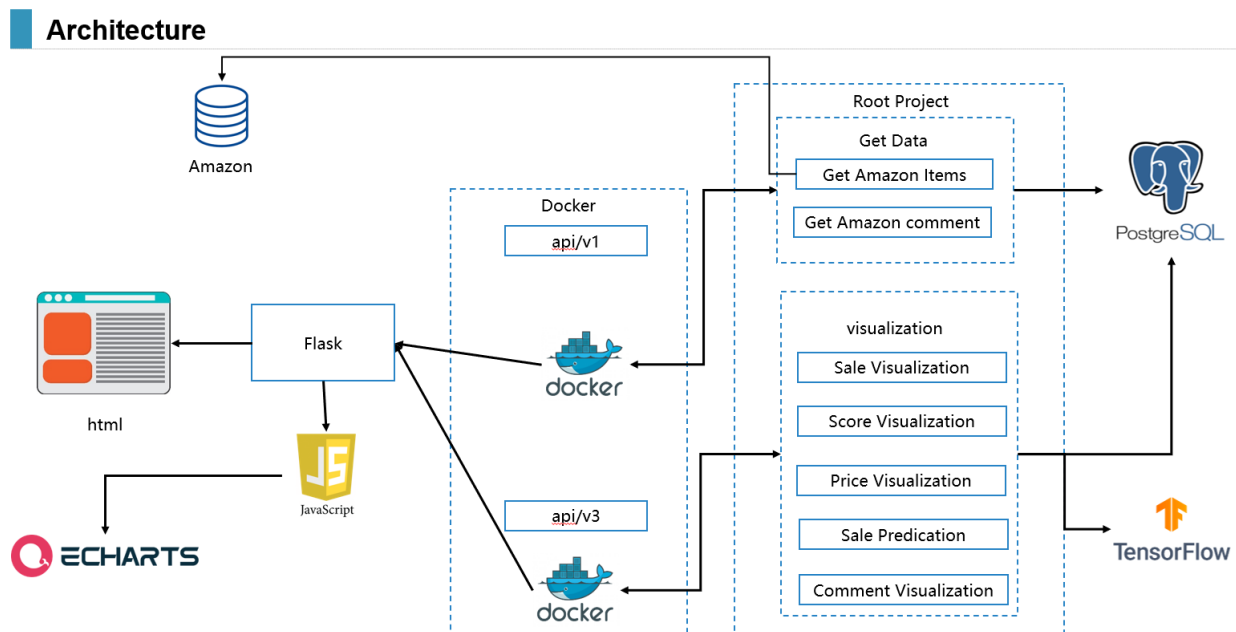
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**# Amazon Best Sale Intelligent Monitoring (Docker Edition)**

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:**



Images on disk					
		4 images	Total size: 4.54 GB	<div><div>IN USE</div><div>UNUSED</div></div>	<button>Clean up...</button>
<b>LOCAL</b> REMOTE REPOSITORIES					
<input type="text" value="Search"/>		<input type="checkbox"/> In Use only			
NAME ↑		TAG	IMAGE ID	CREATED	SIZE
code_docker_app	IN USE	latest	1194054b59fe	6 minutes ago	3.5 GB
code_docker_app2	IN USE	latest	d29faddb605e	9 minutes ago	1.23 GB
dpage/pgadmin4	IN USE	latest	40a516ee7dea	26 days ago	340.79 MB
postgres	IN USE	latest	74b0c105737a	10 days ago	376.1 MB

1. Web Overview

The index page <dashboard>:

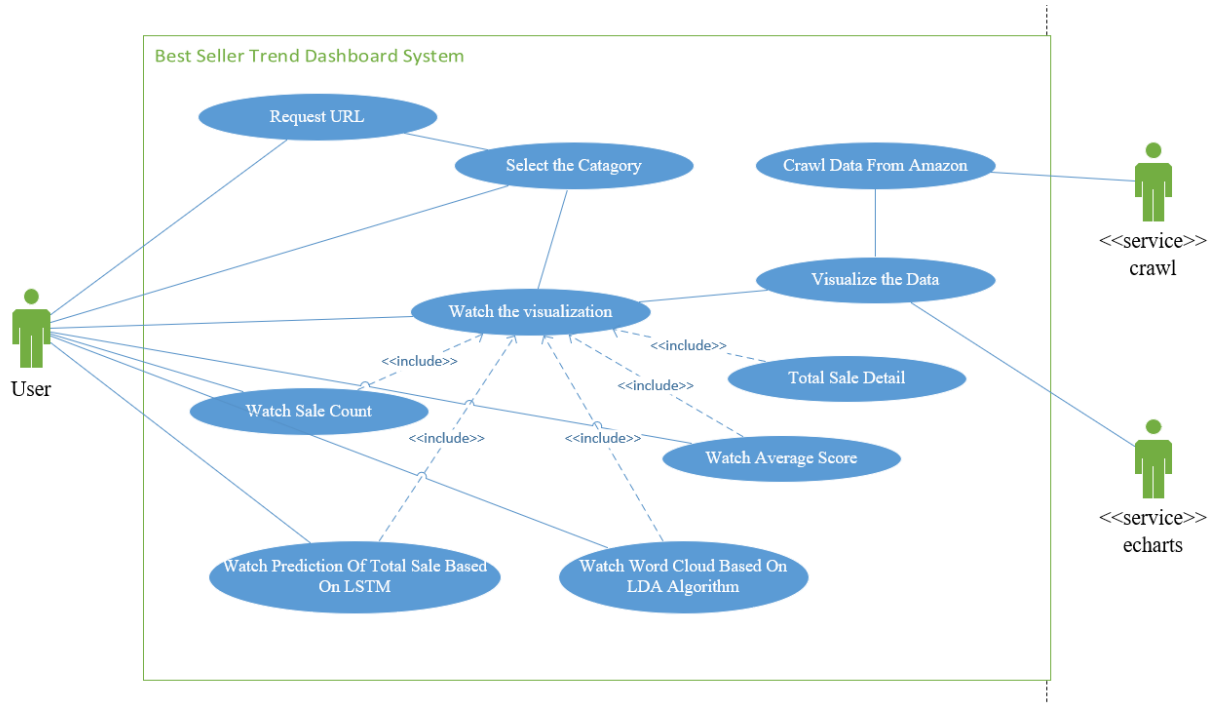


The category detailed page (such as clothing):



## 2. Requirements Model

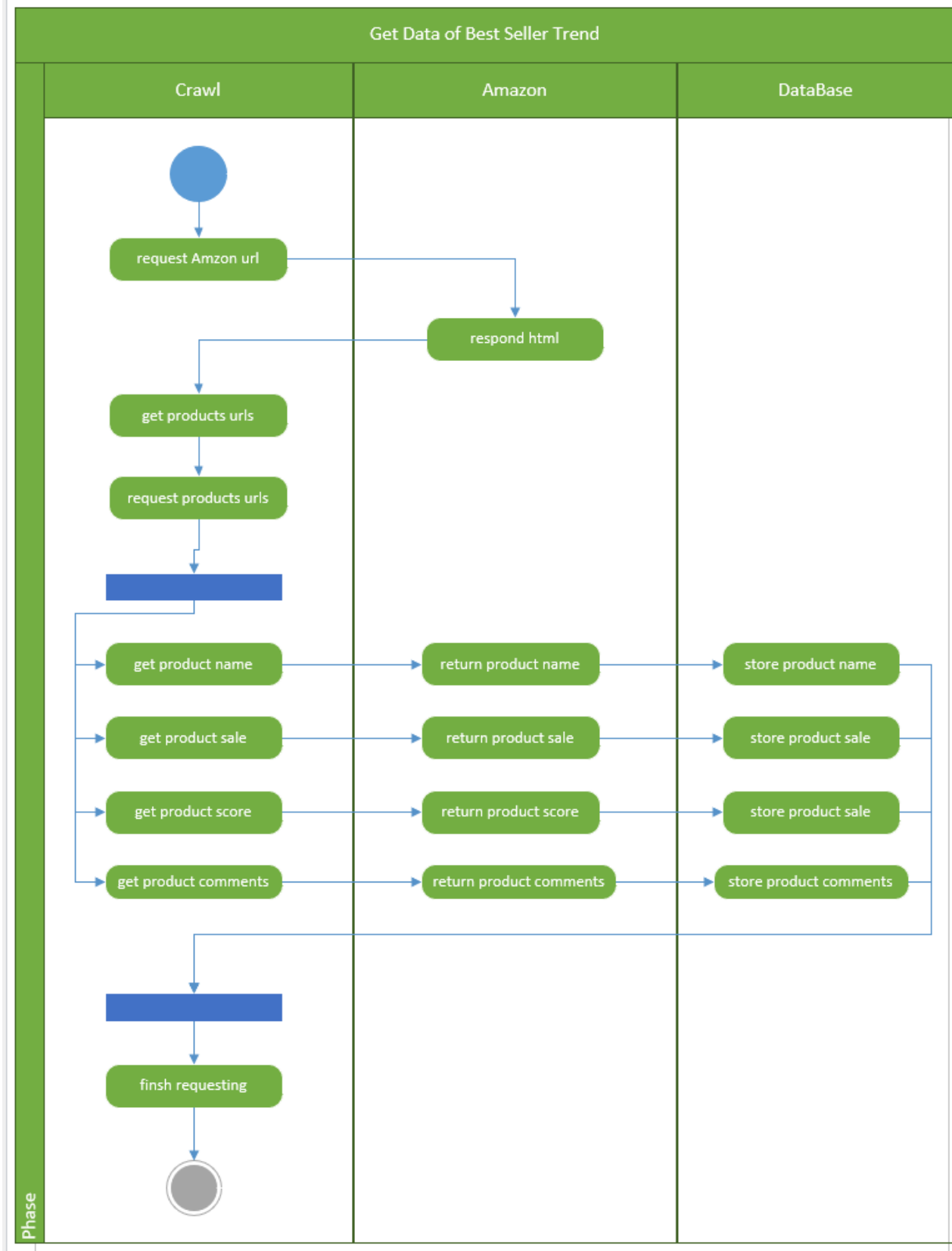
### 2.1 Use Case Diagram



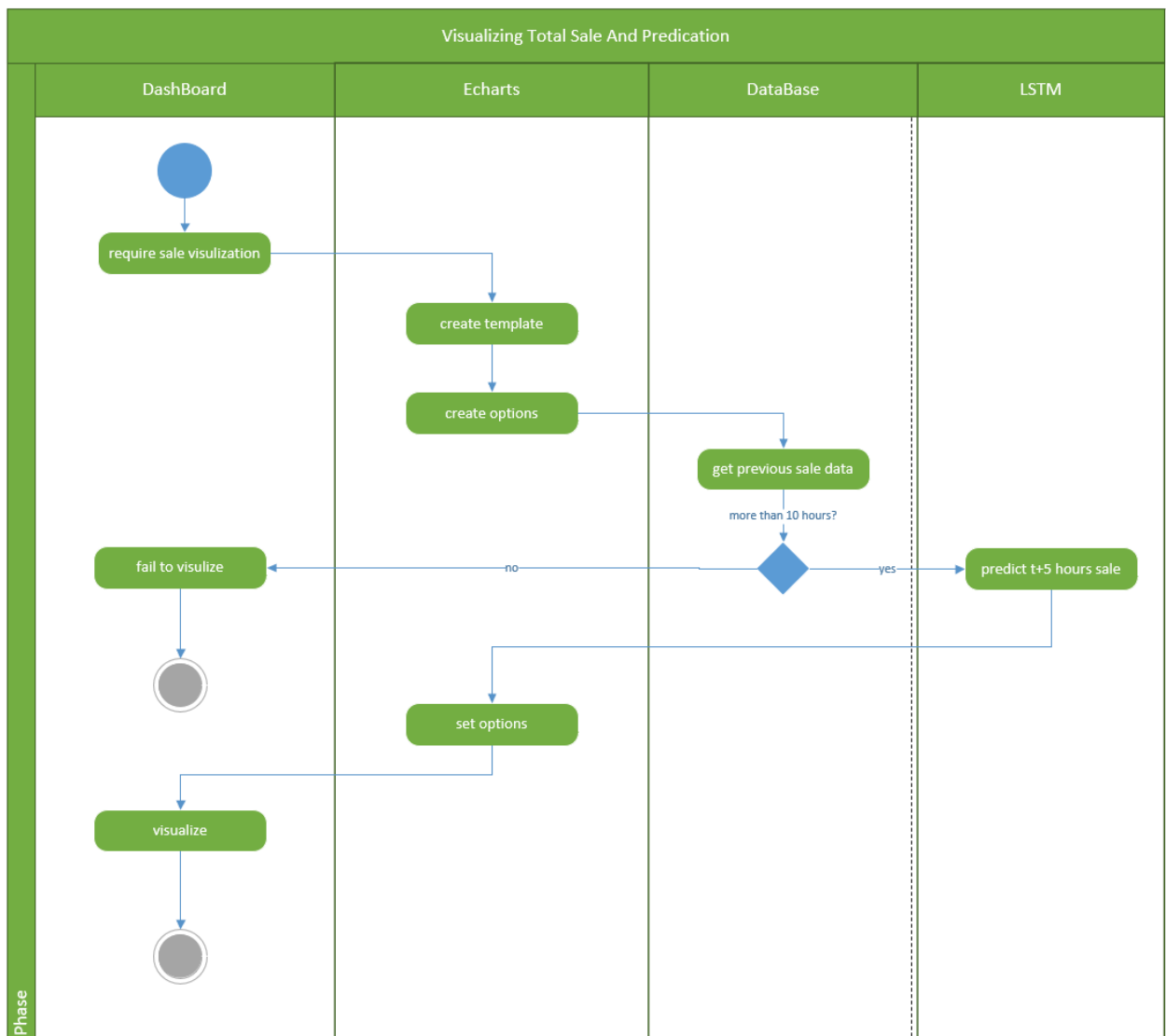
### 2.2 Use Cases

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

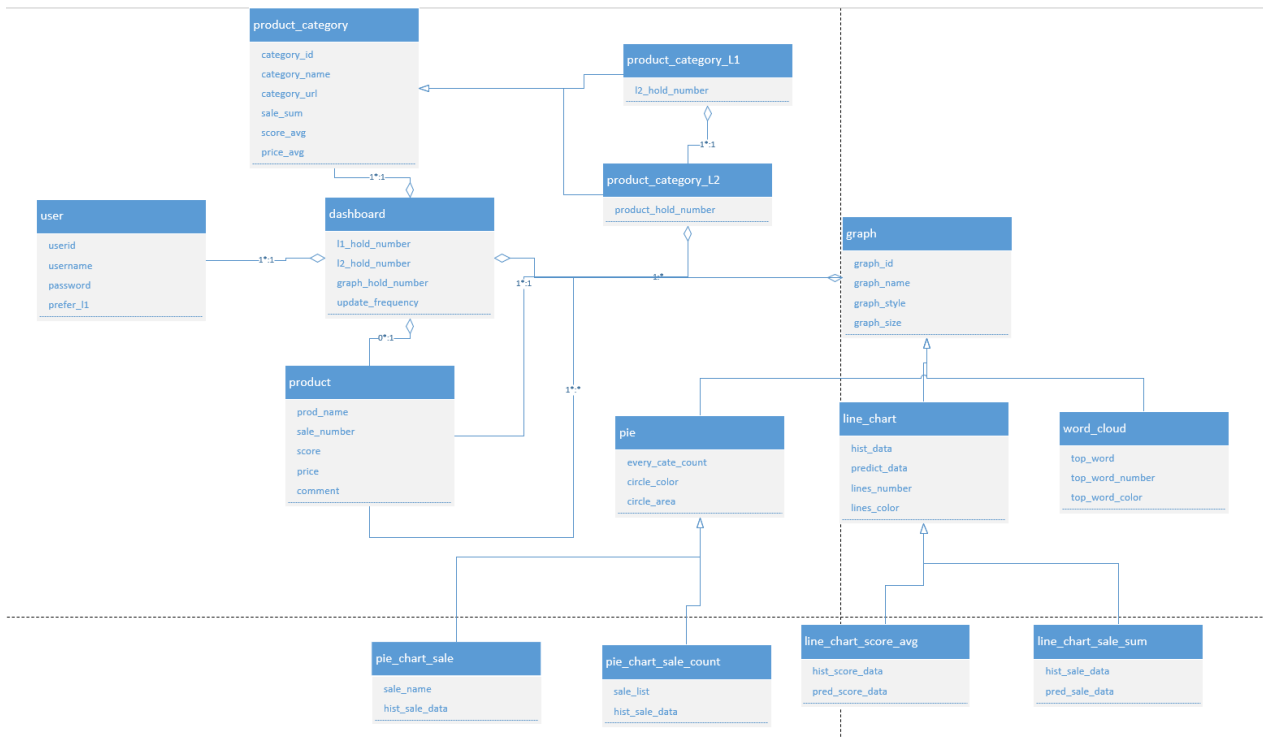


## 2.4 Activity Diagram For Visualizing Total Sale And Predication



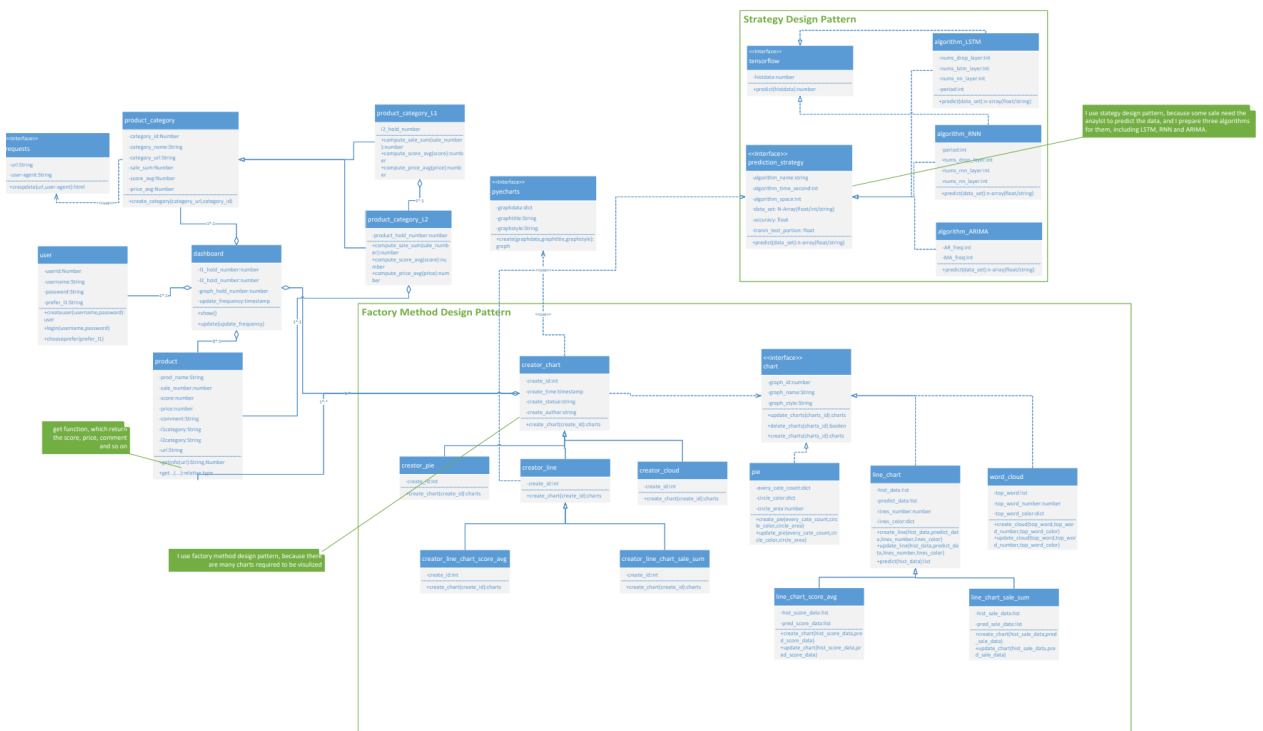
## 3 Analysis Model

### 3.1 Domain Model

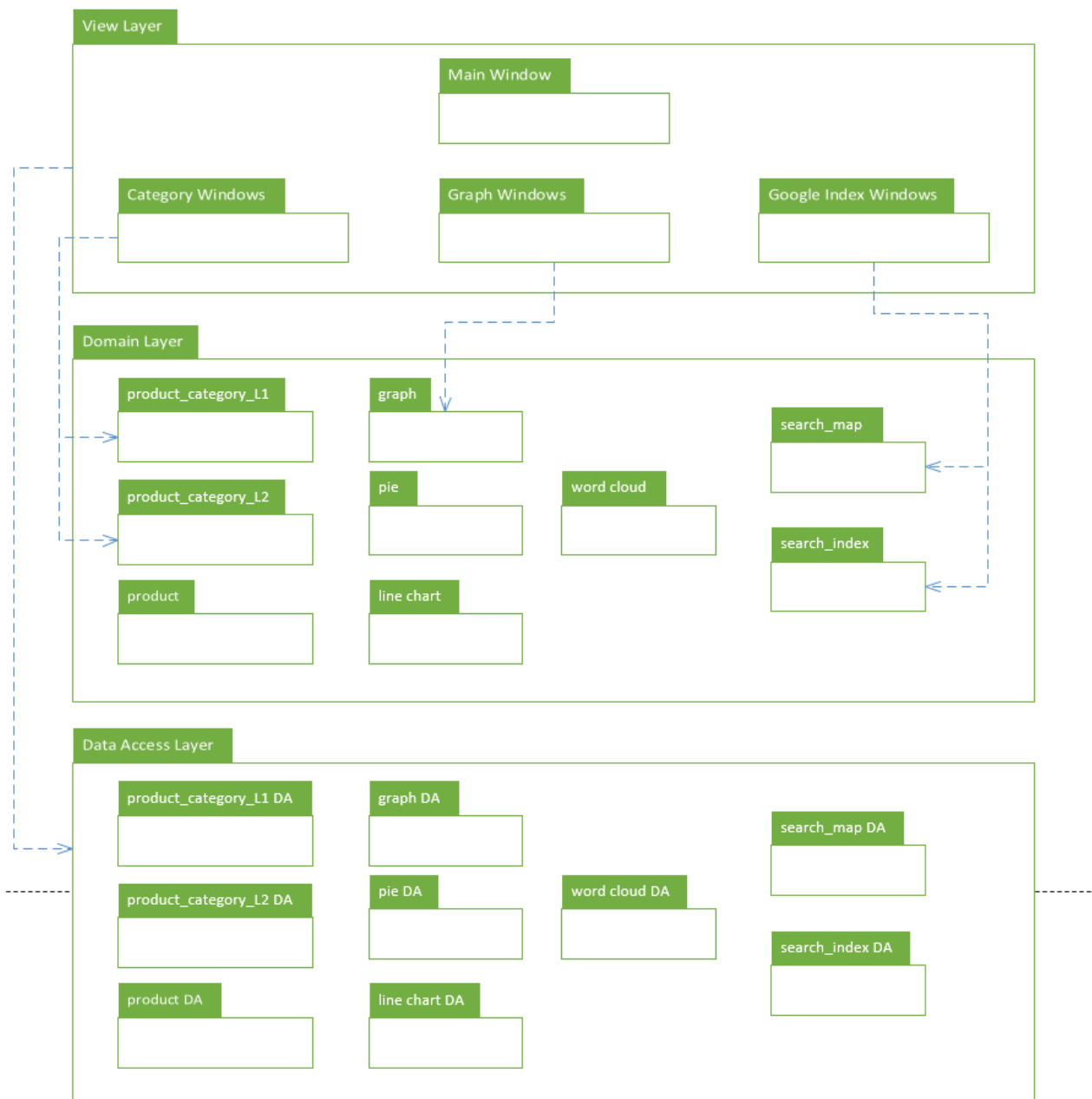


## 4 Analysis Model

### 4.1 Design Model



## 4.2 Package Diagram



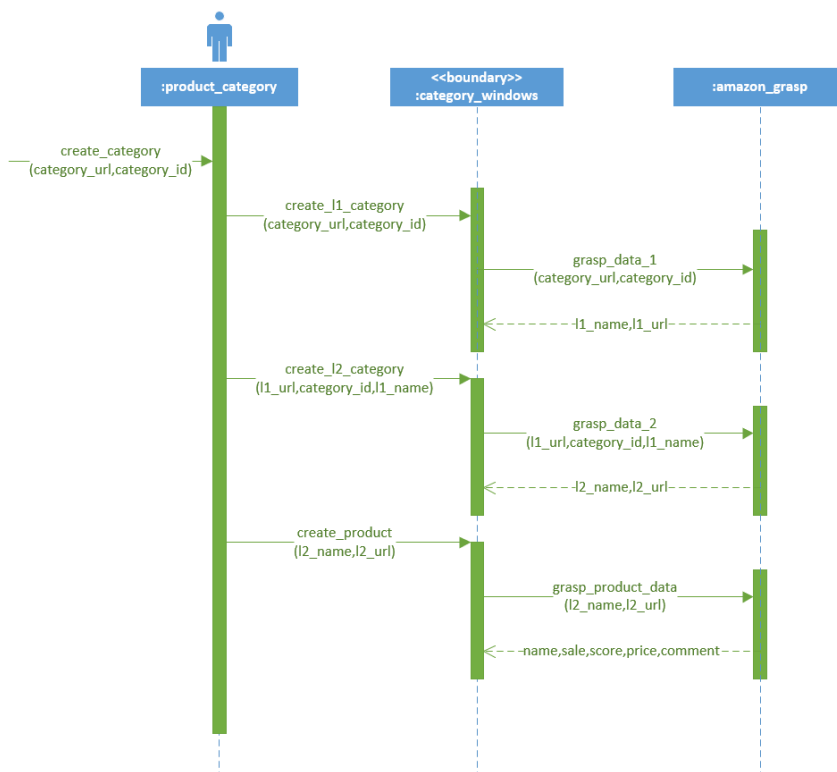
## 4.3 Design Pattern (above)

**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.

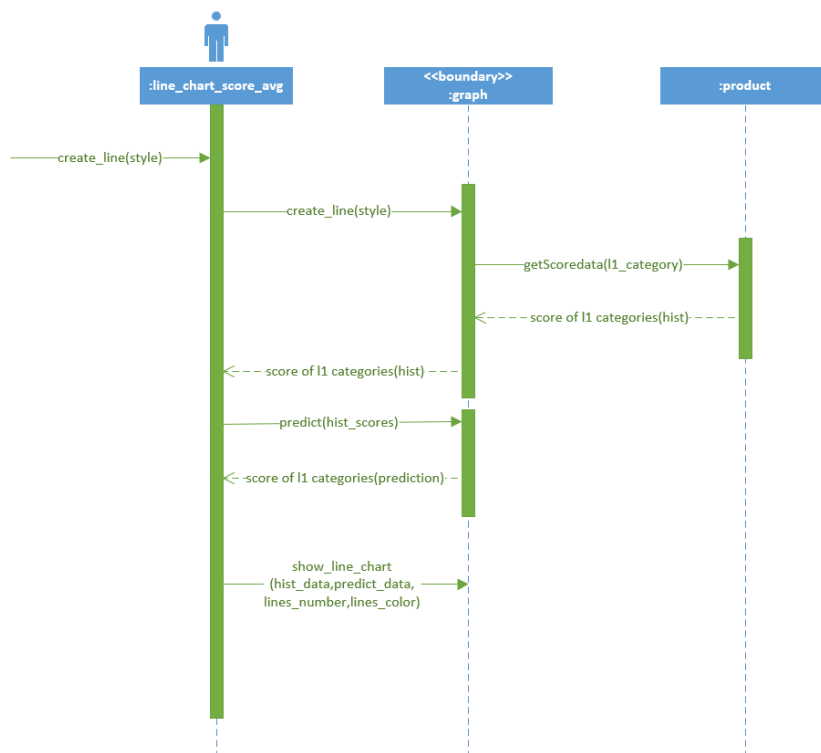
**strategy design pattern:** I use strategy design pattern, because some sale need the analyst to predict the data, and I prepare three algorithms for them, including LSTM, RNN and ARIMA.

## 4.4 Sequence Diagram

### 4.4.1 Sequence Diagram: Create\_Category



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





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

