|  |
| --- |
|  |
| **SYSTEM ANALYSIS & DESIGN** |
| FINAL REPORT |
|  |
|  |
|  |

|  |
| --- |
|  |

**Table of Contents**

[ABSTRACT 3](#_heading=h.gjdgxs)

[GROUP ROLES 4](#_heading=h.30j0zll)

[1. System analysis and design (Pham Duc Tung) 5](#_heading=h.1fob9te)

[2. Business Modeling (Nguyen Tuan Anh - Hoang Tien Long) 7](#_heading=h.3znysh7)

[3. Requirements definition (Tran Thi Mai Huong - Do Nguyen Hoang An) 8](#_heading=h.2et92p0)

[5. Prototyping 9](#_heading=h.tyjcwt)

[6. Milestones 10](#_heading=h.3dy6vkm)

[7. Conclusion 11](#_heading=h.1t3h5sf)

# ABSTRACT

Technological Revolution substantially changed our life. However, human’s health is falling off by the time, 7 out of 10 adults in the world need eye correction. When we take dozen of researchs before kick starting the project, it was very clear to see that people were overpaying for glasses as they were perceived mainly as a health necessity and the stores were taking advantage of that. Back then the variety was limited and the prices were so high that purchasing eyewear was considered a burden. This is still true in many cases and we are here to change that, to make a difference.

Set out to disrupt the traditional eyewear industry, Eyeconic is expected to be the greatest online eyewear retailer offering a variety of both high-quality designer and house brands with a wide-range of styles and lens types including: single vision lenses, multifocal lenses, Rx sunglasses, sports glasses, kids glasses, contact lenses, digital protection, anti-reflective coatings and more.

Our mission with inspiration is to help everyone see better by offering quality glasses at affordable prices. From the comfort of home, buying glasses online has never been easier. With our virtual try on technology, frame size finder, simple navigation and risk-free policy, your new glasses are a click away. And the best part — that moment the glasses arrive at your doorstep!

Many people ask us: “How can you offer the same exact glasses as the traditional stores but at 70% less?”. Our business model is transparent and simple: By cutting out the middleman we control the full process and save on many traditional expenses. These savings are passed on to our customers and that means they are paying truly just for the glasses.

The goal of our project is to follow the Rational Unified Process (RUP) to capture the business context of the system, collect and specify requirement for the system, analysis the requirements to provide an architectural design solution for the Eyeconic Glasses Shop Management System. Eyeconic is designed to fulfil both functional and non-functional requirements. The results of our works consist of system documentations for three workflows: business modeling, requirements and analysis & design; Unified Modeling Language (UML) model artifacts (using Visual Paradigm); and a runnable prototype of the system.

# GROUP ROLES

|  |  |
| --- | --- |
| **Member** | **Roles** |
| Phạm Đức Tùng (1701040161) | Software Architecture  Database Designer |
| Trần Thị Mai Hương (1701040079) | Requirements Specifier |
| Đỗ Nguyễn Hoàng Ân (1701040014) | Requirements Specifier |
| Hoàng Tiến Long (1701040103) | Business Process Analyst |
| Nguyễn Tuấn Anh (1701040009) | Business Process Analyst |

# 1. System analysis and design (Pham Duc Tung)

As a software architecture, Tung coordinates technical activities and artifacts throughout the project and supports other members. His primary responsibility is to establish the overall structure for each architectural view: the decomposition of the view, the grouping of elements. Therefore, he has a breadth view of the system architecture. The table below describes detailed her activities as a software architecture in the Analysis & Design workflow.

|  |  |  |
| --- | --- | --- |
| **Activities** | **Description** | **Output Artifacts** |
| List and prioritize use cases | Define input/output for the scenarios and use cases.  Define the set of scenarios and use  cases that have a substantial architectural coverage or that stress or illustrate a specific, delicate point of the architecture. | Software Architecture Document |
| Architectural Analysis | Define a candidate architecture for the system, based on experience gained from similar systems or in similar problem domains.  Define the architectural patterns, key mechanisms and modeling conventions for the system.  Define the reuse strategy. |  |
| Incorporate existing design elements | Analyze |  |
| Use-case Analysis  All members contributed to this activity, for details of which use case has been designed please see 44\_Use-cases.xlsx | Identify the classes which perform an use case’s flow of events.  Distribute the use case behavior to those classes, using use-case realizations.  Identify the responsibilities, attributes and associations of the classes.  Note the usage of architectural mechanisms. | Use-case Realization, Use-case Realization Specifications |
| Class Design | Ensure that the class provides the behavior the use-case realizations  require.  Ensure that sufficient information is provided to unambiguously implement the class.  Handle non-functional requirements related to the class.  Incorporate the design mechanisms  used by the class. | Data model, class diagram |
| Database design | Ensure that persistent data is stored consistently and efficiently.  Define behavior that must be implemented in the database. | Data model, database |

# 2. Business Modeling (Nguyen Tuan Anh - Hoang Tien Long)

Nguyen Tuan Anh and Hoang Tien Long are the business designers and business process analysts. They are responsible for the business architecture. They detail the specification of a part of the organization by describing the workflow of one or several business use cases, along with defining the responsibilities, operations, attributes, and relationships of one or several business workers and business entities. They also coordinates business use-case modeling by outlining and delimiting the organization being modeled; for example, establishing what business actors and business use cases exists and how they interact.

# 3. Requirements definition (Tran Thi Mai Huong - Do Nguyen Hoang An)

The pair is the requirements specifier. They detailed the specification of a part of the system's functionality by describing the requirements aspect of one or several use cases and other supporting software requirements. They are also responsible for the use-case package, and maintains the integrity of that package. They detailed the use cases and the supplementary requirements and made them consistent with other requirements discipline artifacts. Besides, they captured requirements on the user interface, including usability requirements.

# 5. Prototyping

We have implemented a prototype to demonstrate the Eyeconic functionality using the help from MVC based pattern framework CodeIgniter (with additional libraries such as bootstrap, jquery). The prototype provides simple graphical user interface and have some functions of the system specified in requirements definition.

The prototype is to demonstrate the system functionality; therefore, it is an incompleted version of the application. The version simulates every use cases but only a few aspects, as the base of the final product. Unimplemented or incompleted implementations:

* Data validation (partially)
* Use case M01, M11, M12, M13, M14 (partially)
* Use case F02 (partially)
* Use case S00 (partially)

Accounts for testing:

* Administrator: admin - nimda
* User: user - resu

# 6. Milestones

In this section, there is a table shows important achievements during the system design phase, including task name and contributor. The start-end date does not require the previous task to complete, the task can be kick started alongside the others.

|  |  |  |
| --- | --- | --- |
| **Task** | **Start - End Date** | **Contributor(s)** |
| Stakeholder requests and software requirement specification | 17/10 - 20/10 | Tran Thi Mai Huong, Do Nguyen Hoang An |
| Requirement management planning | 22/10 - 25/10 | Tran Thi Mai Huong, Do Nguyen Hoang An |
| Use cases definition and realization | 25/10 - 31/10 | Tung and all members |
| Business modelling | 26/10 - 31/10 | Hoang Tien Long, Nguyen Tuan Anh |
| Analysis & Design | 01/11 - 11/11 | Pham Duc Tung |
| Prototyping | 05/11 - 30/12 | All members |

# 7. Conclusion

Based on knowledge acquired from this course and previous courses, we have designed a management system with requirement match real world business (Glasses Shop Management System). In our project, we have modeled business context for the system, capture and describe system requirement using both textual and UML notation. Moreover, we have designed the system using Model-View-Controller models as a foundation; therefore, improve robustness and reusability of system components. Also, a runnable prototype is built based on the requirement to demonstrate system functionality. Nevertheless, there is still room for improvement in project. Because our knowledge base limit and inexperience in System Analysis & Design particularly and Information Technology in general, erroneous in our work are inevitable. Therefore, we will continue improve our knowledge to deliver better product in the future.