臺北市立聯合醫院
TAIPEI CITY HOSPITAL

CIRRUS HD-OCT

Haag-Streit BD900

OCTOPUS 300 Perimetry

Pentacam

Topcon CT-80 Non-Contact Tonometer

Canon CR-2 Digital Non-Mydriatic Retinal Camera

Perimeter Octopus 101

Challenge:
Redesign the process of Department of Ophthalmology

At Ophthalmology Department, there are full of different equipment and device which are used for diagnosis and treatment of eye disorders. They are complex and extremely different from each other.

This project is focusing on redesigning the process of examination and integrating the results into database system.
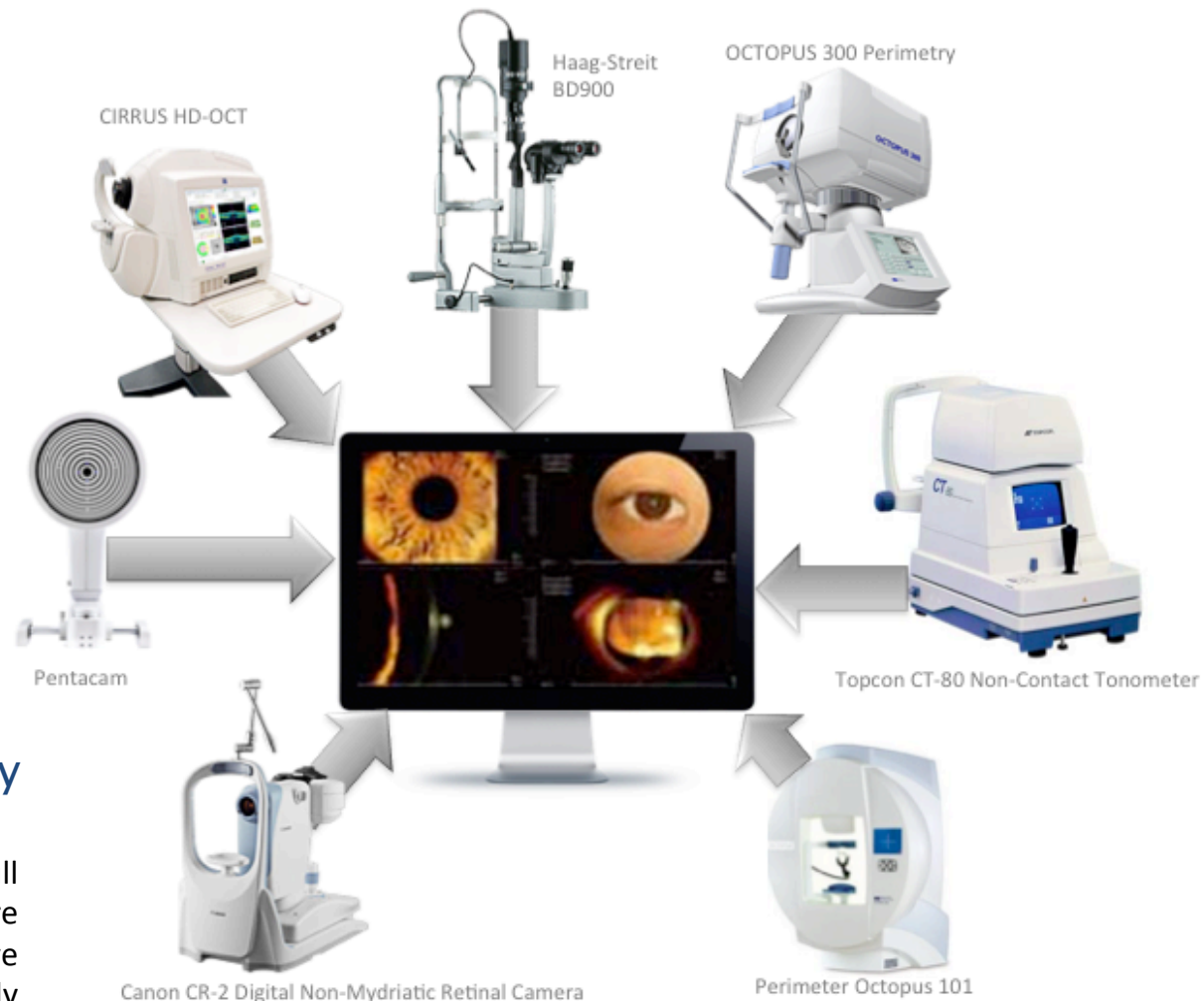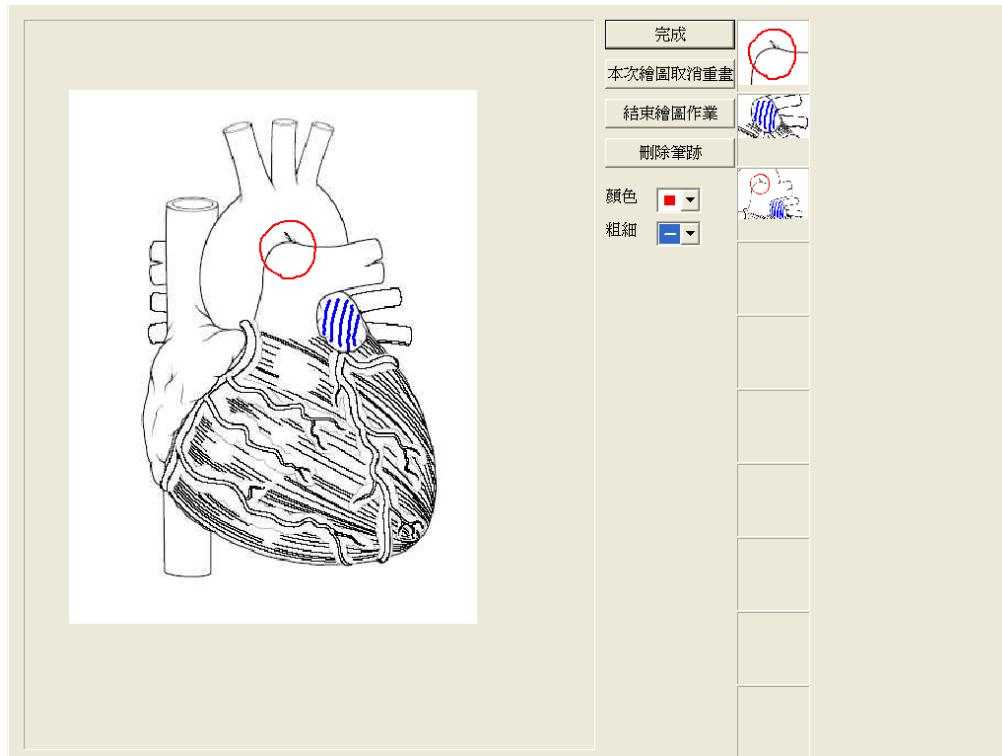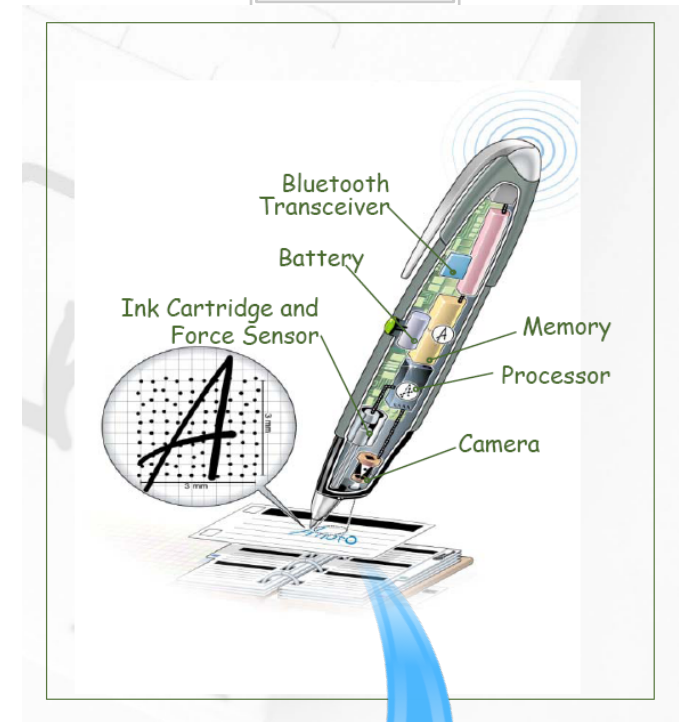
Action:
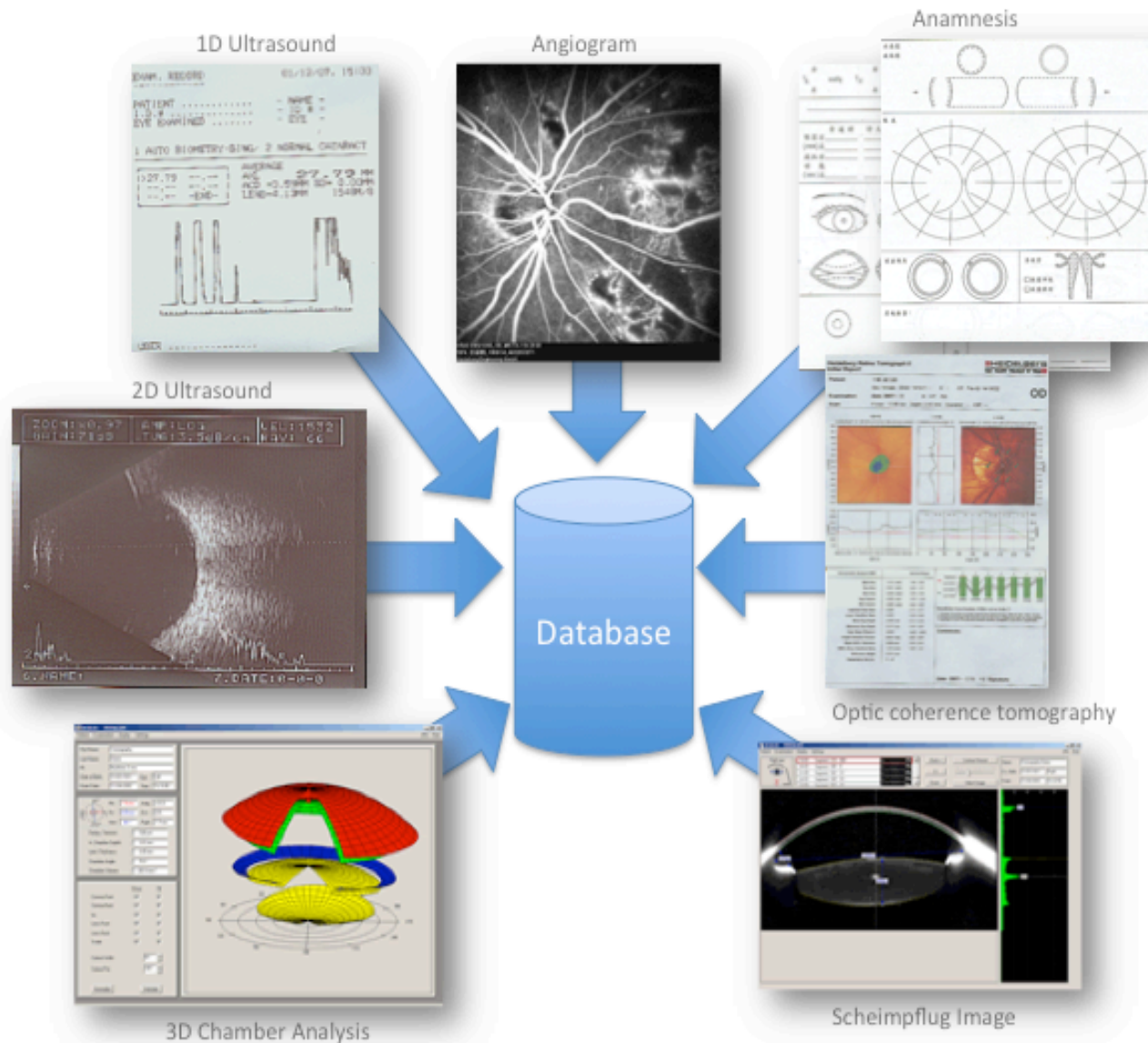
1. I ran a series of interviews with the staff and physicians at Department of Ophthalmology to understand the treatment process, the concern of physicians have regarding the coming new system, and collect the information of all equipment and device for finding the way to export the data into new database system.

2. On-site observation for the patient's treatment ,reaction and complaint. Explore the environment.

3. Based on the research and observation, we found out:
   - Physician like to draw diagnosis on paper.
   - Will be helpful if all the data could be stored and display at the same time on the screen.
   - Diagnosis is displayed on graphic or diagram mostly.

4. Explored and researched the solution in order to keep physician's custom. After all. We decided to use digital pen with digital paper to replace the paper without changing physician's custom.
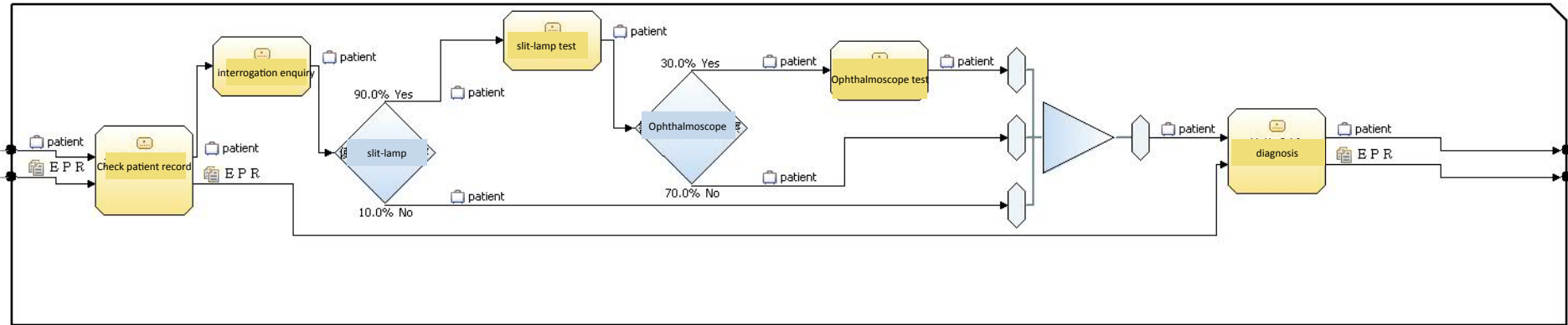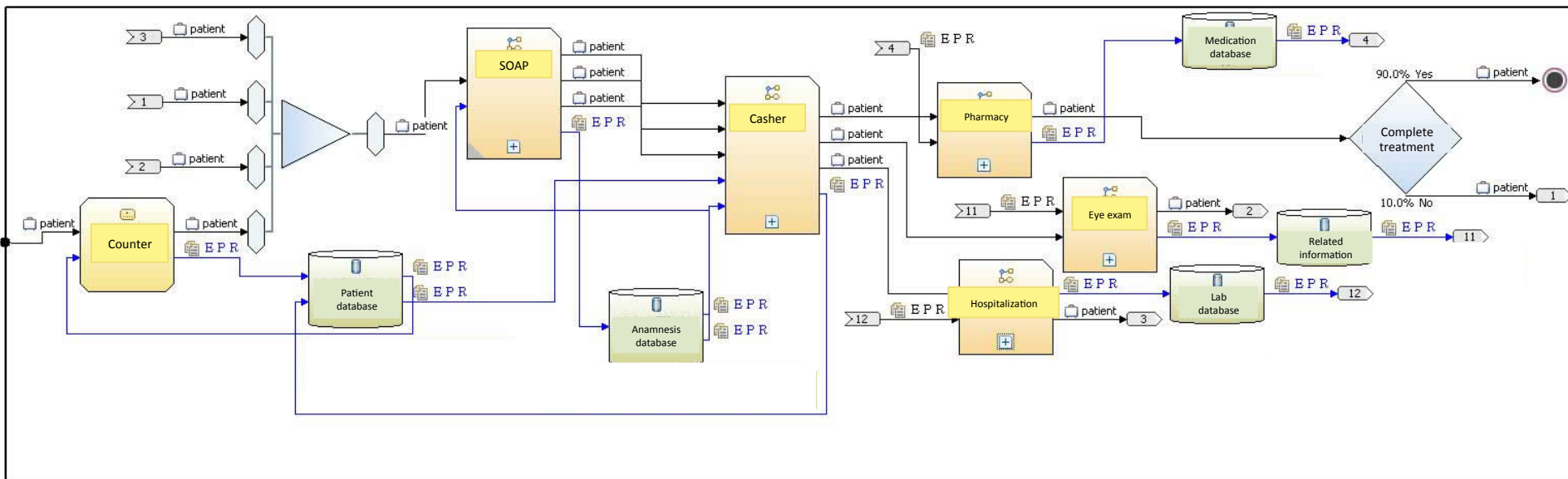
Example

Bluetooth Transceiver

Battery

Ink Cartridge and Force Sensor

Memory

Processor

Camera

完成
本次繪圖取消重畫
結束繪圖作業
刪除筆跡
顏色
粗細

5. Drew the flow chart to sort the process.

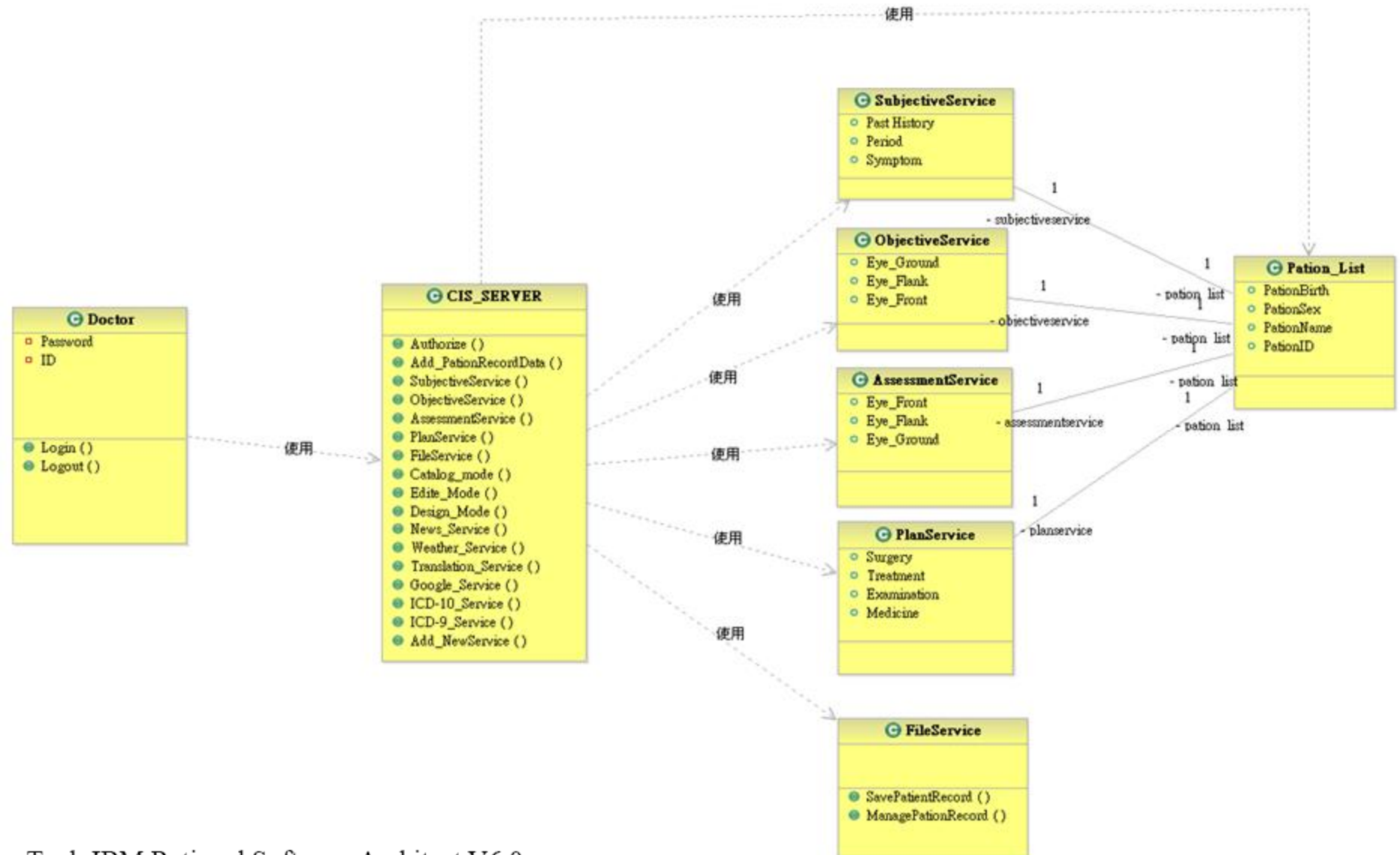## Diagnosis Process

Ophthalmology Department Process

6. Installed and practiced the new equipment. Compared the flow chart, before and after.
   We decided to focused on simplifying the process of basic eye examination and diagnosis process.
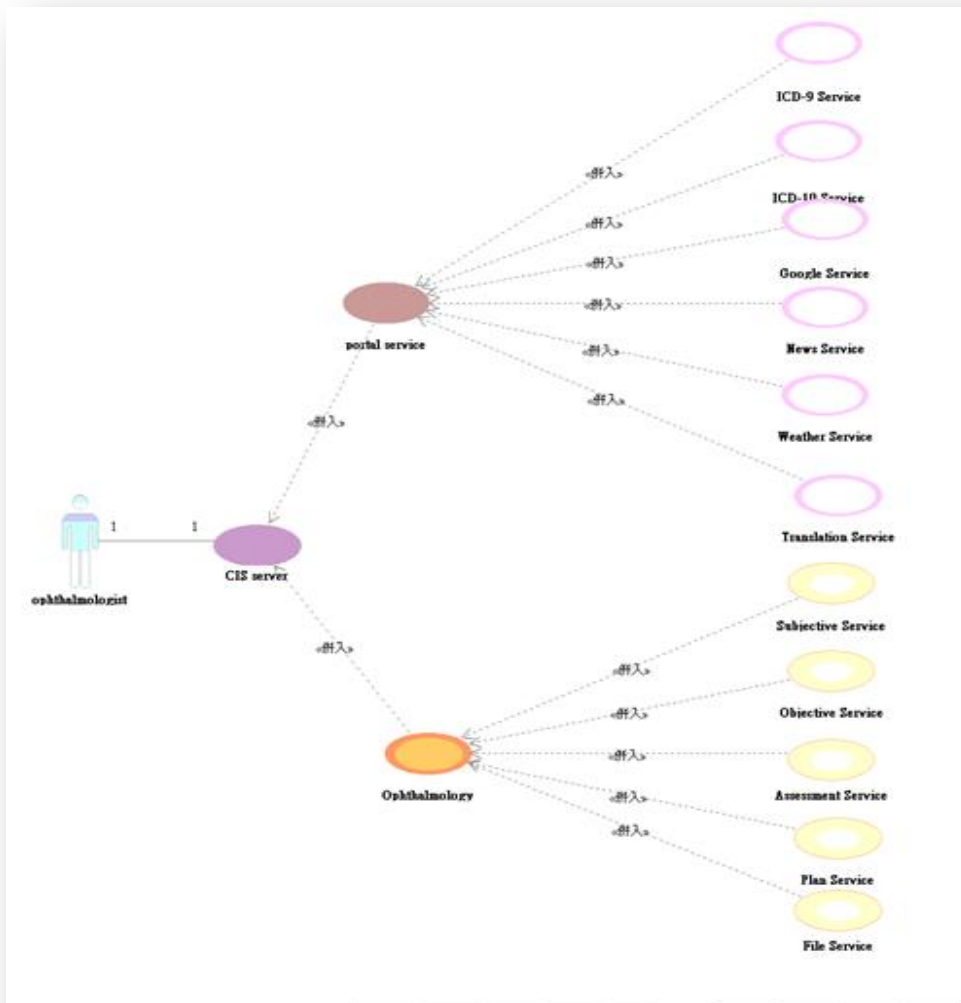
Use Case Diagram –
Ophthalmology Clinical Information System
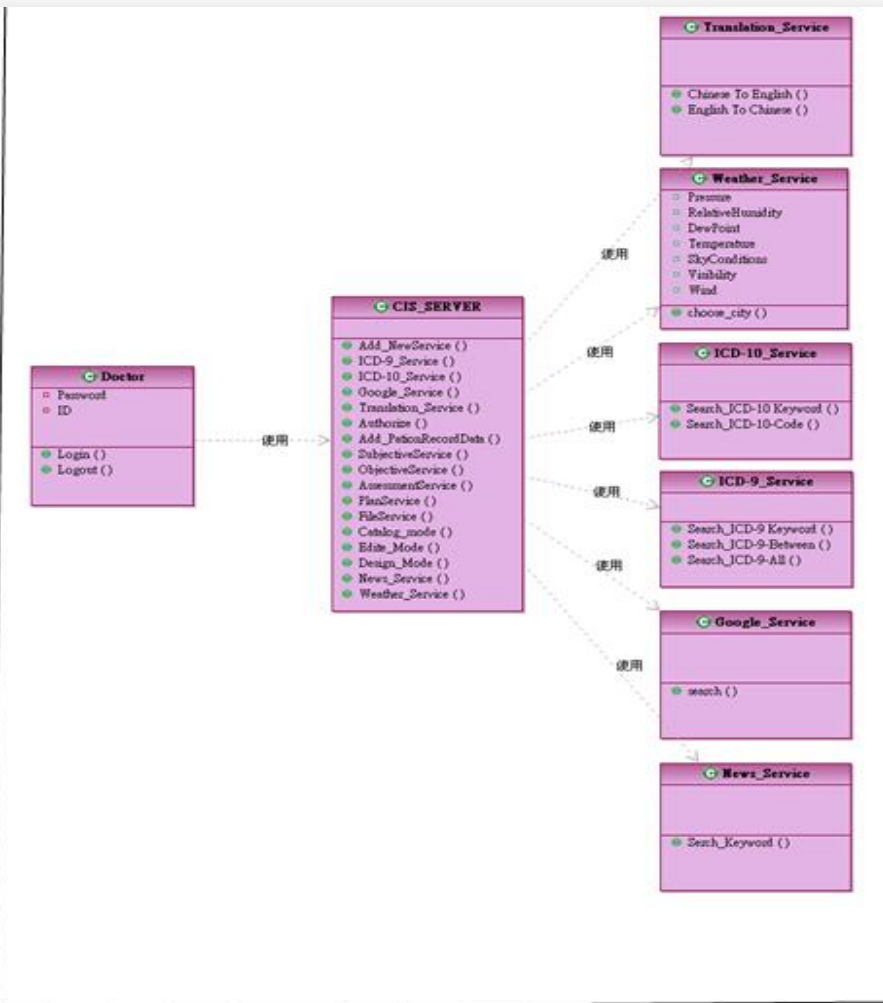
Class Diagram—
Portal Clinical Information System

Doctor
- Password
- ID
- Login ()
- Logout ()

CIS_SERVER
- Authorize ()
- Add_PationRecordData ()
- SubjectiveService ()
- ObjectiveService ()
- AssessmentService ()
- PlanService ()
- FileService ()
- Catalog_mode ()
- Edite_Mode ()
- Design_Mode ()
- News_Service ()
- Weather_Service ()
- Translation_Service ()
- Google_Service ()
- ICD-10_Service ()
- ICD-9_Service ()
- Add_NewService ()

SubjectiveService
- Past History
- Period
- Symptom

ObjectiveService
- Eye_Ground
- Eye_Flank
- Eye_Front

AssessmentService
- Eye_Front
- Eye_Flank
- Eye_Ground

PlanService
- Surgery
- Treatment
- Examination
- Medicine

FileService
- SavePatientRecord ()
- ManagePationRecord ()

Pation_List
- PationBirth
- PationSex
- PationName
- PationID

- subjectiveservice
- objectiveservice
- assessmentservice
- planservice
- pation_list

使用

Tool: IBM Rational Software Architect V6.0

Class Diagram-- Ophthalmology Clinical Information System

Outcome：

Sent the result of process analysis, new equipment test result, class diagrams for each of the steps to the development team for coding up prototype. Took us few iterations to streamline it.

Prototype- login page

System Personal Portal

Ophthalmology Clinical Information System

Enter Diagnosis System
nets (Logout)

Design Mode | Edit Mode | Catalog Mode ➤ Mode Selection

Zone1 | Zone2 | Zone3

Weather Min Close Edit

屏東 ▼

Wind	Calm:0
Visibility	less than 1 mile:0
SkyConditions	partly cloudy
Temperature	62 F (17 C)
DewPoint	57 F (14 C)
RelativeHumidity	82%
Pressure	29.91 in. Hg (1013 hPa)

ICD-10-CM Min Close Edit

Method

ICD-10-Code [ ] Submit

ICD-10 Keyword [ ] Submit

Translation Min Close Edit

Method

English To Chinese [ ] Translate

Chinese To English [ ] Translate

ICD-9-CM Min Close Edit

Method

ICD-9-All [ ] Submit

ICD-9-Between [ ] To [ ] Submit

ICD-9 Keyword [ ] Submit

Each Web Service & Web Part

System Assessment Step

Ophthalmology Clinical Information System

Subjective Objective Assessment Plan Result

Home : Assessment : Assessment Front Illness

nets (Logout)

Patient_Name : *Jason Kidd*

- ❖ Home
  - ❖ Patient_List
  - ❖ Subjective
  - ❖ Objective
    - ❖ Objective Front Illness
    - ❖ Objective Flank Illness
    - ❖ Objective Ground Illness
  - ❖ Assessment
    - ❖ Assessment Front Illness
    - ❖ Assessment Flank Illness
    - ❖ Assessment Ground Illness
  - ❖ Plan
  - ❖ Result

Eye Position

☐ Congenital deformities of eyelids
☐ Chalazion
☑ Hordeolum externum
☑ Hordeolum internum
☐ Trichiasis without entropion
☐ Blepharitis, unspecified
☐ Senile entropion
☐ Spastic entropion
☐ Cicatricial entropion

Preview | Next

Assessment_Service