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## **Thesis Documents for the Master of Fine Arts Degree**

Rochester Institute of Technology  
College of Imaging Arts and Sciences  
School of Design  
Computer Graphics Design

**Website about Chinese Food**  
**Information Design Promoting Culture Identify by website**

By Xiaoqiu Shan

Spring 2009

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# Abstract

Information design for the web and interactive multimedia integrates content with visual indicators. Legibility and clear communication of information and direction are important to the success of graphical user interface design.

This thesis is a systematic introduction about Chinese fish dishes. The information is built into a website. The objective of the thesis is to increase the efficiency of transmitting information to users, making it more easily understandable and less time-consuming to be comprehended. Users can find information on classic Chinese fish dishes conveniently from the website.

The project includes five parts, they are: Home page, Introduction, Restaurant, Kitchen and Fishing. It provides some interactive features: one Flash multimedia online learning course and one Flash fishing game. Users can learn about various Chinese fish dishes in the Restaurant part; can go through the cooking fish process in a virtual environment by using cooking equipment and different ingredients under instruction. Also, users can play a fun fishing game harpooning four different kinds of fish commonly used in Chinese recipes.

The URL:

<http://www.joieshan.com/chinesefood/projectholder.swf>

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# 1. Introduction

## 1.1 Thesis statement

There are lots of Chinese restaurants in the United States, but most of them do not serve real Chinese food, they serve food we call “*American Chinese food.*” That’s why I selected Chinese food as my thesis topic.

I know that many Americans are interested in Chinese food, Chinese cooking methods and Chinese culture. I am very honored that I can introduce Chinese fish dishes through building a website to enable more people to know about “real” Chinese food and to show the Chinese traditional culture and ancient civilization behind Chinese cuisine which can contribute to promoting communication between China and the United States. This is the main purpose of my thesis.

*The project includes five parts:*

**1. Home page:**

Three ancient Asian style buildings appear on the home page. User can enter the next webpage by clicking the building image.

**2. Introduction:**

The introduction page demonstrates the project.

**3. Restaurant:**

In the restaurant section, user can learn about various Chinese fish dishes.

**4. E-learning:**

Users can learn how to cook Chinese food by following the notes.

**5. Flash Game:**

Users can play an entertaining Flash game.

## 2. Research

### 2.1 Introduction Chinese food

Traditional Chinese food has a long history over thousands of years. The history of Chinese cuisine can be traced back to the Peking Man around 400,000 years ago when fire was invented by the Peking Man. Some other accounts of the history of Chinese cuisine take the beginning to the Chinese stone age, where the cultivation of rice and the production of noodles began, both of them are typical representations of Chinese cuisine as we know today originated from archaeological findings.

China has a very diverse landscape including deserts, mountains, plateaus and fertile river basins and each region has its own regional climates. These differences of geography and climate give rise to the various regional cultural and culinary practices among people in the whole nation. ([http://en.wikipedia.org/wiki/History\\_of\\_Chinese\\_cuisine](http://en.wikipedia.org/wiki/History_of_Chinese_cuisine))

#### **2. 11. Basic food introduction**









##### **Eight Dishes Systems**

Traditionally, there are eight main regional cuisines, or the Eight Major Dishes Systems. The names of these systems are base on their geographical locations. The Wan System (Anhui province), the Yue System (Cantonese province), the Ming System (Fujian province), the Xiang System (Hunan province), the Su System (Jiangsu province), the Lu System (Shandong province), the Chuan System (Sichuan province) and the Zhe System (Zhejiang province). Sometimes four of the Eight Major Dishes Systems are given greater emphasis, and are considered to dominate the culinary heritage of China; we call them the “Four Major Dishes Systems, ” the Chuan System, the Yue System, the Lu System and the Su System.

The Eight Major Dishes Systems in China



*Illustrated by Xiaoqiu Shan*

- |   |   |   |   |
|---|---|---|---|
|  <i>the Chuan System</i> |  <i>the Xiang System</i> |  <i>the Lu System</i>  |  <i>the Yue System</i> |
|  <i>the Ming System</i>  |  <i>the Su System</i>    |  <i>the Wan System</i> |  <i>the Zhe System</i> |



From the map, we can see that these eight major dishes are defined along geographical lines. For example: the Chuan System is in Western China, the Yue System is in Southern China, the Lu System is located in the Northern part of the nation, as well as the Su System in Eastern China.

In modern times, Beijing and Shanghai are the most famous and popular cities in China. On the basis of the large population in these two cities, Beijing cuisine and Shanghai cuisine on occasion are also cited along with the classical eight dishes systems as the Ten Great Dishes Systems.

### **The characteristics for different regions**

There are different characteristics for the different dishes systems. Usually, we can use one sentence to include all the features of those dishes: *“East is sweet, South is salty, West is spicy, North is sour.”*

## **2. 12. Food Culture**

### **North and South**

Chinese Cuisine can be classified as north or south on the basis of the geography. The most obvious difference between northern and southern cuisines is that northerners generally eat noodles and dumplings, whereas southerners eat rice. On the other hand, southerners like fish and shrimp with light seasonings while northerners like beef, mutton and heavily seasoned food. However, this regional difference in diet is shrinking due to the migration of the population and social cultures integration .

## **Food culture**

People in China is used to eating some special food which is prepared for different festivals. For example, people like eating dumplings during the Chinese New Year, and eating TangYuan which is made from glutinous rice flour during the Lantern Festival. Both dumplings and TangYuan are the symbols for the meaning “getting together.” People eat them during the Chinese New Year or the Lantern Festival to wish that their family will be safe and healthy in the next year and be together for the next Festival.

Zongzi (traditional Chinese food, made of glutinous rice stuffed with different fillings and wrapped in bamboo or reed leaves) is traditionally eaten during the Dragon Boat Festival on the fifth day of the fifth month of the Chinese calendar, commemorating Qu Yuan, a famous Chinese poet from the empire of Chu who lived during the Warring States period.

Most Chinese people also like to eat noodles on their birthday. The noodle is a long shaped food in China and made from unleavened dough cooked in boiling water. People believe that eating noodles on their birthday could bring good luck and health to their life. ([http://en.wikipedia.org/wiki/Chinese\\_cuisine](http://en.wikipedia.org/wiki/Chinese_cuisine))

## 2.2 A trip to China

I borrowed some books about Chinese food from the library. I also did research online to find the information I needed. However, that was not enough for me. Chinese cuisine is a huge system. I did not want to get some educational theory that is not useful for my project in the book. My project would focus on introducing Chinese food by interactive media. I wanted fresh information, new ideas and popular cooking methods about Chinese food. So without any hesitation, I decided to go back to China to get what I wanted. I stayed in Nanjing which is my hometown for three weeks during Christmas break. I collected various books and DVDs about Chinese cuisine. At the same time, I asked my father to introduce some chefs and managers who were working at a five starts hotel restaurant to me, because I wanted to get the most recent viewpoints from people who are working in the “kitchen’s forefront.” I spent several days interviewing with them.

### 2.2-1. Interview with chef



Xuewu Sun  
Executive Chef, Nanjing Jinling Hotel  
National senior Chinese cook

*Photoed by Xiaoqiu Shan*

*Background: Xuewu Sun is a leader in the Nanjing catering industry. He won high praises for his cooking. He personally cooked for Chinese former President Deng Xiaoping and Jiang Zemin. The food he cooked was also favorably received by many foreign leaders.*

---

**Xiaoqiu Shan:** Nice to meet you.

**Xuewu Sun:** Nice to meet you, too.

**Shan:** Can you introduce the core value of modern Chinese diet?

**Sun:** Sure. At present, the trend of the development of modern Chinese diet is that people focus on healthy eating more and more. High quality natural and organic food is really popular now, which is a good sign. People pay attention on the ingredients, freshness, safety, nutritive value and appearance of the products. At the same time, people try to keep the balance between cold dishes and hot dishes, meat dishes and vegetable dishes, staple food (pastries) and non-staple food. They have the desire to maintain a good physical health through a modern diet.

**Shan:** Thanks. And can you talk about the characteristics of Su cuisine?

(Jinlin hotel is located in Jiangsu province, the restaurant in the hotel features Su cuisine.)

**Sun:** Traditionally, we have eight dishes systems in China. Su system is one of them. Sometimes, we call it Su cuisine. Su cuisine is the biggest one of all these dishes systems to my understanding. (Laughing) Based on the geographical location, Jiangsu is called "Land of Fish and Rice". Su cuisine is characterized by its exquisite selection of ingredients, perfectly well-made and light taste. Actually, Su cuisine now is not the same as a century ago. As a result of the changes in diet structure and modern fast-paced life, Su cuisine is continually improved and innovated in order to adapt to these changes today.

**Shan:** So would you mind recommending some famous special dishes in Su system?

**Sun:** Absolutely. In Su cuisine, the famous special dishes include “Preserved Egg and Pork Porridge”, “Sour Vegetable Fish Pot”, “Salted Fish”, “Giant lion’s head Meatball”, “Squid-shaped Mandarin Fish” and “Yangzhou Fried Rice”. Well, there are too many great dishes I can recommend. And you can see that there are a lot of fish dishes and I have already mentioned three of them.

**Shan:** Why is the fish dish so popular in Su cuisine?

**Sun:** I think probably because that Jiangsu is the land of fish and rice. I just told you before. (Laughing)

**Shan:** OK, I really appreciate your help. Thank you very much.

**Sun:** You are very welcome. If you need any help in the future, let me know. Bye.

(personal communication, December, 2008)

*Photograph by Xiaochu Shan*



## 2.2-2. Inside the hotel kitchen

Photograph by Xiaoqiu Shan

I went into the kitchen behind the restaurant and observed the cooking process by professional chefs.

### Cooking Techniques

**Coating:** Coating is usually used before slippery-frying, quick-frying and stir-frying. The coating process includes washing the cut meat first, then adding in salt, cooking wine, and cornstarch (sometimes eggs are also used) and string well until it is sticky.

**Slippery-frying:** Fry the main ingredient first and then top with sauce or mix with the sauce.

**Deep-frying:** Heat the cooking oil over a big fire and deep-fry the food. A big fire and a large amount of oil characterize this process.

**Quick-frying:** Put crispy materials into the wok with oil and quickly stir the materials over high heat.

**Stir-frying:** Put pre-prepared materials in the shape of diced pieces, shreds or balls into the heated oil, stir the wok over a big fire.

(Lan, 2000)



Photograph by Xiaoqiu Shan



### **Some Chinese Ingredients**

**Fennel seeds:** Seeds of fennel plants, grey in color and have a hot flavor.

**Star anise:** They have a strong and sweet flavor in the shape of stars.

**Cinnamon:** The bark of cinnamon trees, brown in color.

**Five Spices:** Mixture of powdered star anise, fennel seed, cinnamon bark, licorice root, and clove buds.

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## 2.3 Narrow the scope of thesis topic

After I came back to Rochester, I narrowed the scope of my thesis topic. I decided to only focus on Chinese fish dishes. The one reason was that the fish dish is popular in Su cuisine, which chef Xuewu Sun mentioned. The other reason was that I could easily get many first-hand information about Chinese fish dishes,

## 3. Process

### 3.1 The features of my website

#### 3.2-1. Style

My purpose was to let user learn more about Chinese food from my website in a relaxing way. I made my website as fun as possible, in order to attract user to find more information about Chinese food.

#### 3.2-1. Image

I planned to use a large number of photographs on my website to show Chinese food. Because I wanted my users to be able to imagine delicious food when they saw these high quality photos. The problem was that if the Flash file included too many pictures, the website would operate slowly. Finally, I chose to use the small size photographs and numerous vector images drawn by Adobe Illustrator.

#### 3.2-3. Color systems

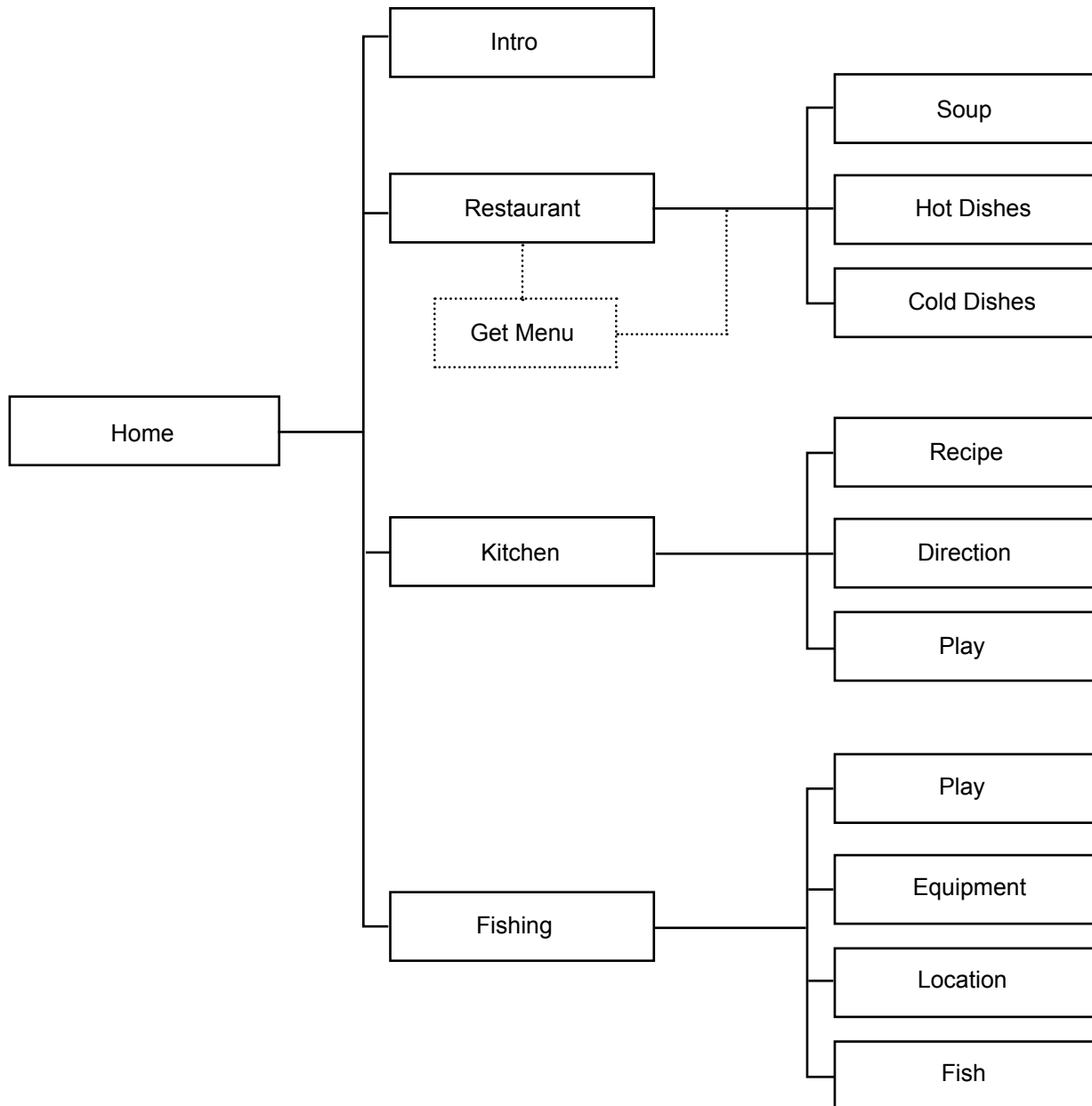
I used one color system through my whole project to make my website unified. Most Chinese food is warm, for example, hot dishes, soups, rice or noodles. People are used to eating warm food in China. Based on this, I selected warm tones. It means that food can bring warmth to everybody. I picked brown-red-yellow from the warm tones as my website's main color system.





## 3.2 Design process

### 3.2-1. Workflow



### 3.2-2. Home page

The theme of the Home page is “Chinese Garden.” Three different buildings are presented on the Home page. Every building is in a typical Chinese architecture style. I did some research and investigation about Chinese ancient architecture ([http://en.wikipedia.org/wiki/Ancient\\_Chinese\\_wooden\\_architecture](http://en.wikipedia.org/wiki/Ancient_Chinese_wooden_architecture) ). The following images are the good samples to show what the features Chinese ancient architecture usually is.



*Photograph by Xiaoqiu Shan in Beijing, China*

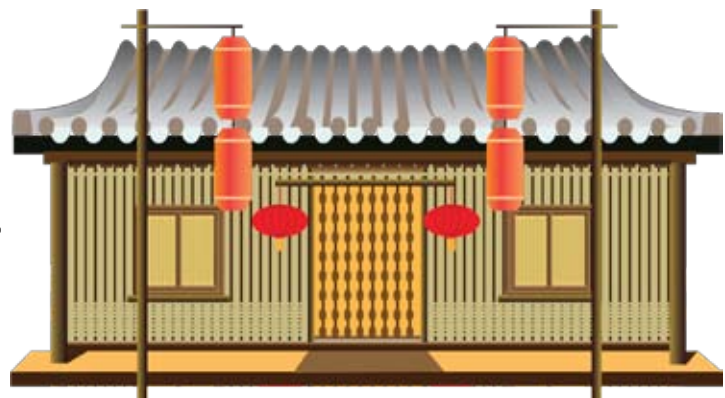
## Art Works

Restaurant Building



Kitchen Building

Fishing Building



*Those vector images are created by Adobe Illustrator.*

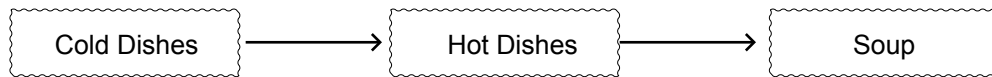
*Designed by Xiaoqiu Shan.*

### 3.2-3. Restaurant

People like going to restaurants for dinner. Usually, one family feast includes cold dishes, hot dishes, soup, rice or noodles and fruit. In this part, I selected some famous fish dishes including cold fish dishes, hot fish dishes and fish soup as an introduction.

(<http://chinesefood.about.com>)

The following table shows the order of serving dishes under normal circumstance in China:



*The restaurant image in the thesis.  
Designed by Xiaoqiu Shan*

### **3.2-4. Kitchen**

This is an on-line learning section. In this part, the users can learn how to cook Sweet and Sour Fish in a Squirrel Shape step by step.

---

#### **SWEET AND SOUR FISH IN A SQUIRREL SHAPE**

##### **Ingredients**

1. Fresh water fish (preferably mandarin fish) of about 1.651b
2. (11/15oz) Shrimp
3. (2/3oz) Diced bamboo shoots
4. (2/3oz) Diced mushrooms  
(Originally dried mushrooms that have been soaked in water)
5. (1/2oz) Green peas
6. (4 tsp) Cooking wine
7. (1 1/6 tsp) Salt
8. (11tbsp) Sugar
9. (6 tbsp) Vinegar
10. (5 ½ tbsp) Tomato sauce
11. (1.1b)Dry cornstarch (only about 0.22lb to be used)
12. (6 tbsp) Water
13. (2 tbsp) Mixture of cornstarch and water
14. (2 tbsp) Sesame oil
15. (4 cups) oil (4/5 cup to be used consumed)

## **Directions**

### A. Prepare

1. Clean the fish
2. Cut off the head near the belly fin, but do not throw it away. Cut open the fish along its back until the cut reaches its tail. (Do not cut off the tail.) Cut out the back bone and remove the side bones (ribs). Make several cuts with 1cm spaces in between, first vertically and then horizontally on the inner side of the fish to create a diamond-shaped pattern. (Do not cut open the skin.)
3. Marinate the fish with (2 tsp) of cooking wine and (5/6tsp) of salt for 5 minutes.
4. Dust the dry cornstarch on the fish body and head. Hold the fish tail to shake off unnecessary cornstarch.

### B. Cook

5. Heat the oil until it is about 390-430F.
6. Roll the fish to keep the skin inside. Hold the fish tail with one hand and the top end of the fish body with chopsticks.
7. Gradually release the fish into the oil. Place the head into the oil also.
8. When both are done, take them out and place them on a plate, putting the head and the body together to create the concept of the whole fish.

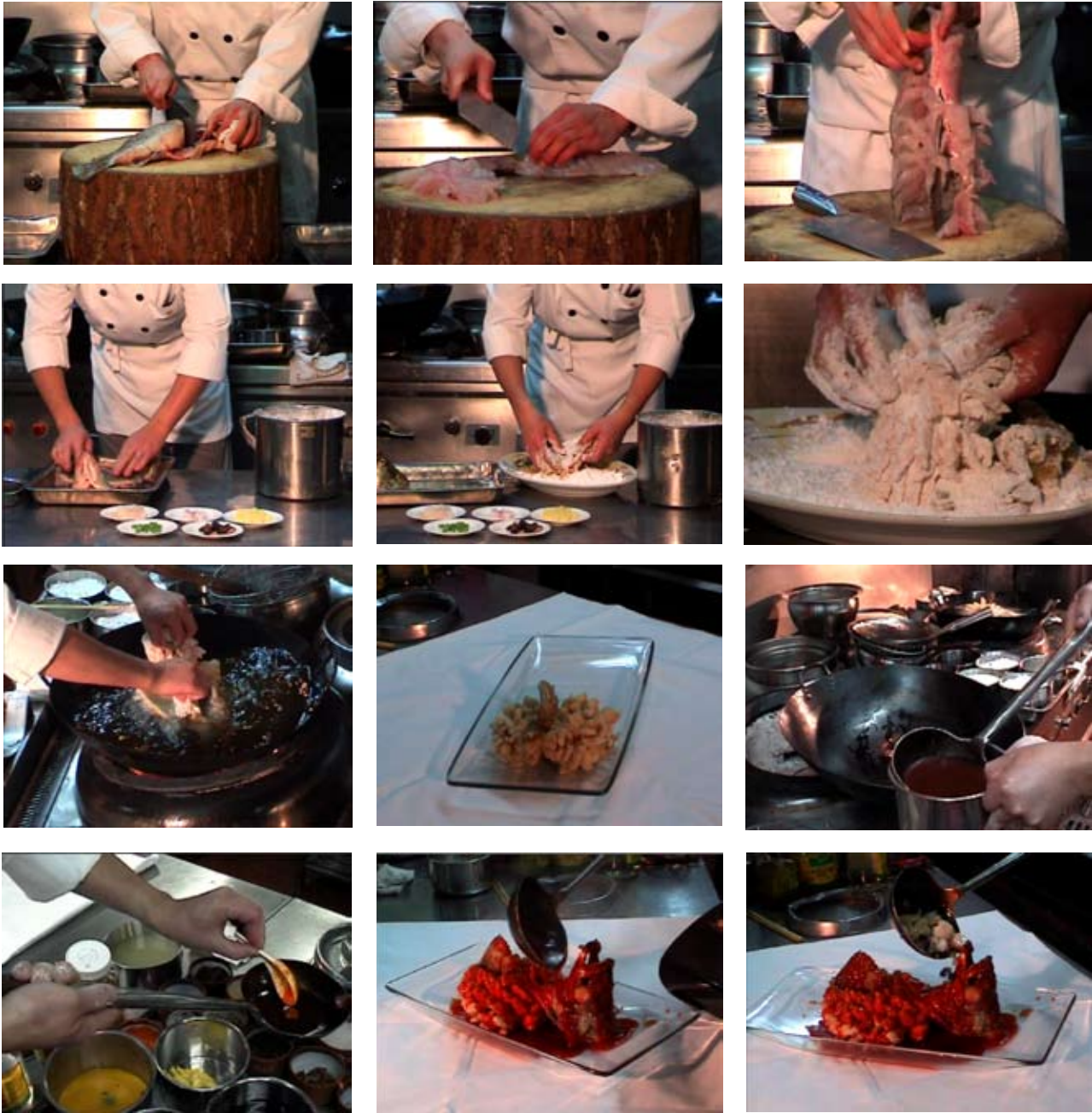
### C. Make sauce

9. Mix the tomato sauce, water, sugar, (2 tsp) of cooking wine and (1/3 tsp) of salt into a sauce.
10. Keep (1 ½ tbsp) of oil in the work. Put in the shrimp, diced bamboo shoots, mushrooms and green peas and stir-fry.
11. Add in the mixed sauce.
12. When the sauce is boiling, put in the cornstarch-water mixture to thicken it.
13. Sprinkle some sesame oil and pour the sauce right onto the fish.

(Lan, 2000)

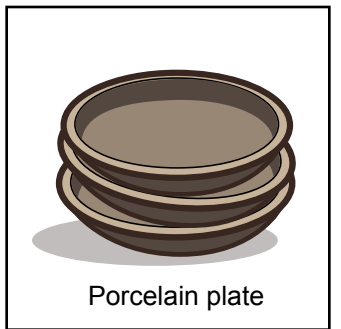
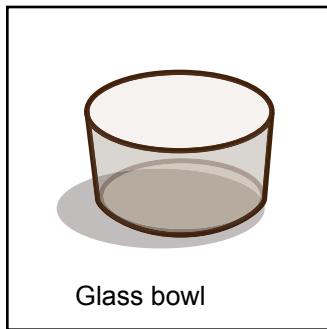
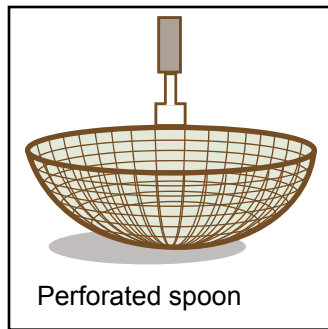
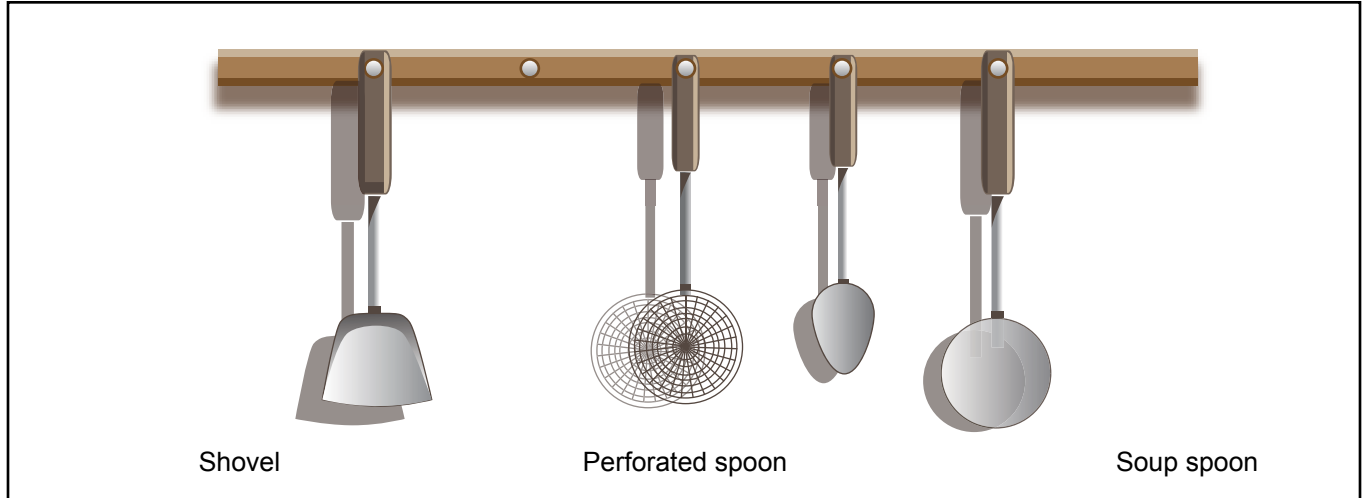
### Reference Photos from my video

I took a video in the Jinling hotel's kitchen room. Attached are some screenshots to show how the chef cooked Sweet and Sour Fish in a Squirrel Shape .

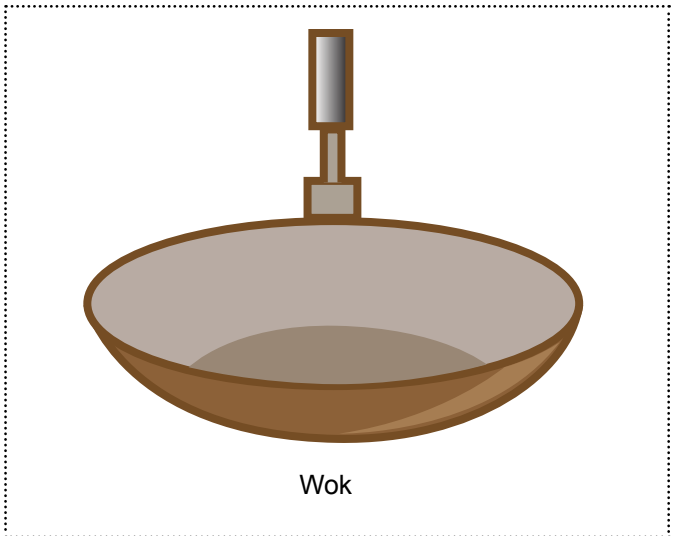
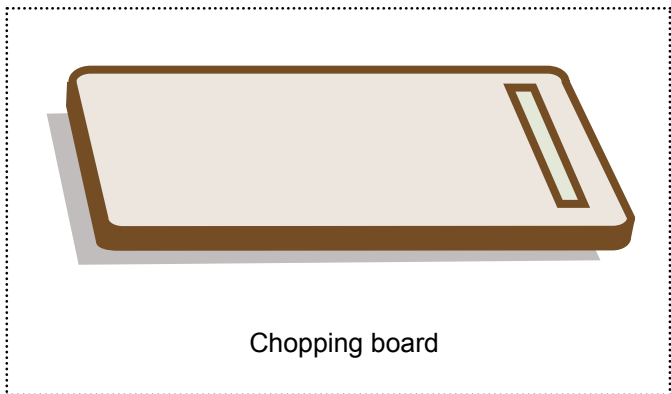


*Photograph by Xiaoqiu Shan*

**Art Works**



**The tools**



*The vector images were done by Adobe Illustrator.*

*Designed by Xiaoqiu Shan*



## The ingredients



Fresh mandarin fish



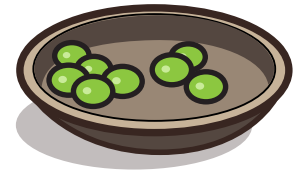
Diced mushrooms



Diced bamboo shoots



Shrimp



Green peas



(6 tbsp)  
Vinegar



(5 ½ tbsp)  
Tomato Sauce



(11tbsp)  
Sugar



(4 tsp)  
Cooking Wine



(1.1lb)  
Dry Cornstarch



(4 cups)  
Oil



(1 1/6 tsp)  
Salt

*The vector images were done by Adobe Illustrator.*

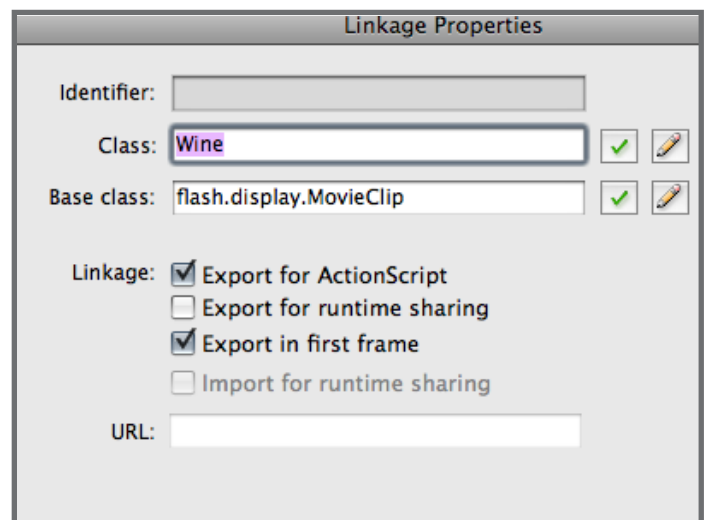
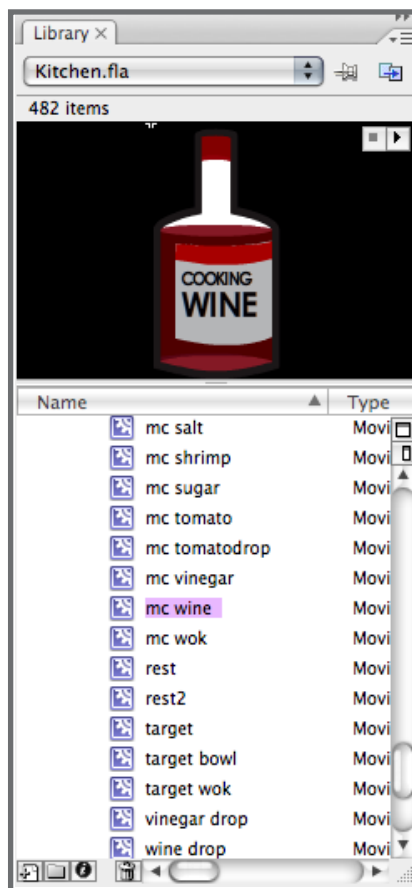
*Designed by Xiaoqiu Shan*

### ActionScript 3.0

The goal of this part was to prompt users with a mouse click to easily learn the program. Users click on the correct object, and then drop them to the right position to simulate the cooking process. The whole process is done using ActionScript in Flash.

I put all the objects in the Library rather than on the Stage. Every object was converted into a Movie Clip. Also, I gave them class names in the Linkage Properties. The class name was very important, because it was used in the StartDrag and StopDrag ActionScript to build a connection between the objects and the Stage. (Noble & Wright, 2008)

For example:



Opened Linkage Properties panel, gave a Class name "Wine".

MovieClip  
mc wine

The code demonstrates how to add object onto the stage.

```

37
38 var vinegar:Vinegar = new Vinegar();
39 vinegar.x = 188;
40 vinegar.y = 472;
41 MovieClip(parent).myClip.addChild(vinegar);
42
43 var wine:Wine = new Wine();
44 wine.x = 491.4;
45 wine.y = 470;
46 MovieClip(parent).myClip.addChild(wine);
47
48 var dry:Dry = new Dry();
49 dry.x = 379.9;
50 dry.y = 477.9;
51 MovieClip(parent).myClip.addChild(dry);
52

```

The code demonstrates how to create a drag and drop action.

```

1 stop();
2 var text3:Text3 = new Text3();
3 text3.x = 520;
4 text3.y = 420;
5 MovieClip(parent).myClip.addChild(text3);
6
7 wine.addEventListener(MouseEvent.MOUSE_DOWN, dragWine);
8 wine.addEventListener(MouseEvent.MOUSE_UP, placeWine);
9
10 function dragWine(event:MouseEvent):void {
11     text3.gotoAndStop(2);
12     wine.startDrag();
13 }
14
15 function placeWine(event:MouseEvent):void {
16     if (wine.hitTestObject(targetfish_mc)) {
17         wine.x = 600,
18         wine.y = 100;
19         wine.stopDrag();
20         wine.gotoAndPlay(2);
21         gotoAndPlay(63);
22         wine.removeEventListener(MouseEvent.MOUSE_DOWN, dragWine);
23         wine.removeEventListener(MouseEvent.MOUSE_UP, placeWine);
24     }

```

### 3.2-5. Fishing game

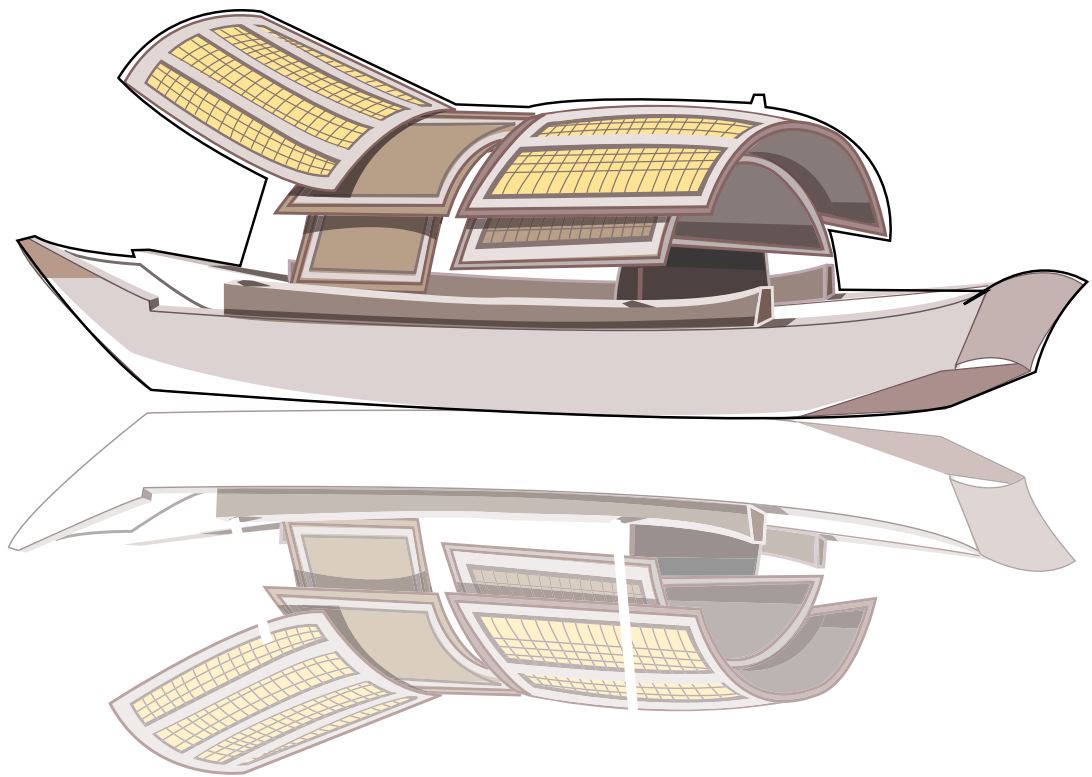
This part was the final project in the 2008 Fall Advanced Computer Graphics class ( Jackson & Hague, 2008). The users can play a fun fishing game by harpooning different kinds of freshwater fish. Harpooning is a traditional Chinese method to catch fish. In the game, users need to use the keyboard to control the character's movement and to finish the action of harpoon shooting.

.....

#### Art work

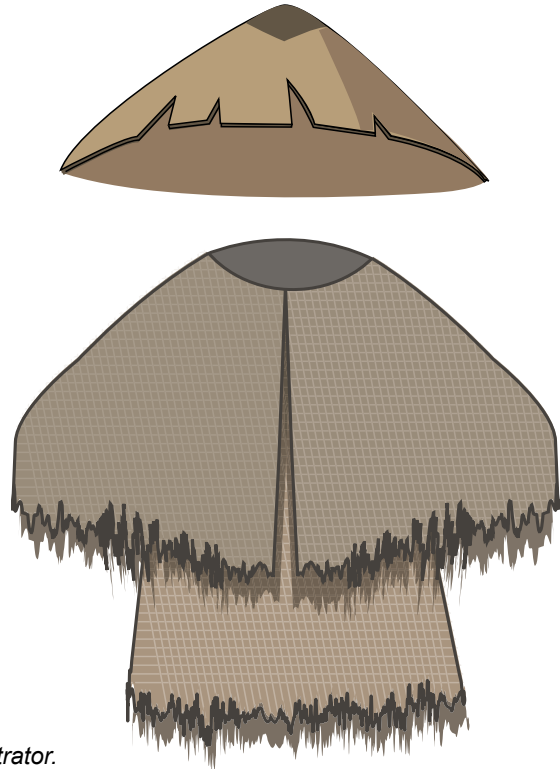
*The vector boat image was done by Adobe Illustrator.*

*Designed by Xiaoqiu Shan*



## SuoYi

The image on the right hand side is a bamboo hat and straw rain cape coat. People living in the southeastern part of China like to wear bamboo hats and straw rain cape coats when they go fishing or do farm work. Suo Yi is used as a rain shelter.



*The vector images were done by Adobe Illustrator.*

*Designed by Xiaoqiu Shan*

---

## Harpoon

A harpoon is a long spear-like instrument used in fishing. This is the traditional and a convenient way to catch the freshwater fish in the river.



*The vector images were done by Adobe Illustrator.*

*Designed by Xiaoqiu Shan*

### Four different kinds of Fish



Crucian



Herring



Grass Carp



Chub


*The vector images were done by Adobe Illustrator.*

*Designed by Xiaoqiu Shan*

## ActionScript

When users play the game, they can see fish swimming underwater and the cute character standing on the side of the boat. Actually, all the visual elements were in the Library except the background and all the actions were done by individual files instead of using the Timeline. There were four AS code files used. The programming in this section was the hardest part of the whole website.

The following code demonstrates how to setup the game code and keyboard functionality.

 Fishing.as

```

1 package {
2   import flash.display.*;
3   import flash.events.*;
4   import flash.utils.Timer;
5   import flash.text.TextField;
6
7   public class Fishing extends MovieClip {
8     private var fishman:Fishman;
9     private var fishes:Array;
10    private var harpoons:Array;
11    public var leftArrow, rightArrow:Boolean;
12    private var nextFish:Timer;
13    private var shotsLeft:int;
14    private var shotsHit:int;
15
16    public function startFishing() {
17      shotsLeft = 20;
18      shotsHit = 0;
19      showGameScore();
20      fishman = new Fishman();
21      addChild(fishman);
22      setChildIndex(fishman,5)
23      fishes = new Array();
24      stage.addEventListener(KeyboardEvent.KEY_DOWN,keyDownFunction);
25      stage.addEventListener(KeyboardEvent.KEY_UP,keyUpFunction);
26      addEventListener(Event.ENTER_FRAME,checkForHits);
27      setNextFish();
28    }

```

```

69    // key pressed
70    public function keyDownFunction(event:KeyboardEvent) {
71      if (event.keyCode == 37) {
72        leftArrow = true;
73
74      } else if (event.keyCode == 39) {
75        rightArrow = true;
76      }
77      else if (event.keyCode == 32) {


```

```

78     fireHarpoon();
79     }
80     }
81     // key lifted
82     public function keyUpFunction(event:KeyboardEvent) {
83         if (event.keyCode == 37) {
84             leftArrow = false;
85         } else if (event.keyCode == 39) {
86             rightArrow = false;
87         }
88     }

```

The following code demonstrates how to move the character on the screen by keyboard

 Fishman.as


```

1  package {
2      import flash.display.*;
3      import flash.events.*;
4      import flash.utils.getTimer;
5
6      public class Fishman extends MovieClip {
7          public function Fishman() {
8              this.x = 600;
9              this.y = 168;
10
11             addEventListener(Event.ENTER_FRAME,moveFishman);
12         }
13
14         public function moveFishman(event:Event) {
15             var newX = this.x;
16             if (MovieClip(parent).leftArrow) {
17                 newX -= 5;
18                 this.scaleX = 1;
19             }
20             if (MovieClip(parent).rightArrow) {
21                 newX += 5;
22                 this.scaleX = -1;
23
24             }
25             if (newX < 320) newX = 320;
26             if (newX > 700) newX = 700;
27
28             this.x = newX;
29         }
30
31         public function deleteFishman() {
32             parent.removeChild(this);
33             removeEventListener(Event.ENTER_FRAME,moveFishman);
34         }
35     }
36 }

```




The following code demonstrates how to shoot the harpoon by using the space bar on the keyboard.

 Harpoon.as

```

1 package {
2   import flash.display.*;
3   import flash.events.*;
4   import flash.utils.getTimer;
5
6   public class Harpoon extends MovieClip {
7     private var dx,dy:Number; // speed
8     private var lastTime:int;
9     public function Harpoon(x,y:Number, speed: Number) {
10      //set start position
11      var initialMove:Number = 35.0;
12      this.x = x - .5/*initialMove*Math.cos(2*Math.PI*rot/360);*/
13      this.y = y - .5/*initialMove*Math.sin(2*Math.PI*rot/360);*/
14      lastTime = getTimer();
15      addEventListener(Event.ENTER_FRAME,moveHarpoon);
16    } //
17    public function moveHarpoon(event:Event) {
18      var timePassed:int = getTimer()-lastTime;
19      lastTime += timePassed;
20
21      if (MovieClip(parent).leftArrow) {
22        this.gotoAndStop(1);
23      }
24      if (MovieClip(parent).rightArrow) {
25        this.gotoAndStop(2);
26      }
27      this.y += 18;
28      if (this.y > 450) {
29        deleteHarpoon();
30      }
31
32    }
33    public function deleteHarpoon() {
34      MovieClip(parent).removeHarpoon(this);
35      parent.removeChild(this);
36      removeEventListener(Event.ENTER_FRAME,moveHarpoon);
37    }
38
39  }

```

 Fishing.as

```

91   public function fireHarpoon() {
92     fishman.gotoAndPlay(2);
93     if (shotsLeft <= 0) return;
94     var h:Harpoon = new Harpoon(fishman.x,fishman.y,50);
95     addChild(h);


```

```

96     if(fishman.scaleX == 1){
97         h.x = fishman.x;
98     }
99     if(fishman.scaleX == -1){
100        h.x = fishman.x + 80;
101    }
102    harpoons.push(h);
103    shotsLeft--;
104    showGameScore();
105    }
106    public function showGameScore() {
107        showScore.text = String(shotsHit);
108        showShots.text = String(shotsLeft);
109    }
110    // take a plane from the array
111    public function removeFish(fish:Fish) {
112        for(var i in fishes) {
113            if (fishes[i] == fish) {
114                fishes.splice(i,1);
115                break;
116            }
117        }
118    }

```

The following code demonstrates how the four different kinds of fish is generated randomly.

 Fish.as

```


1  package {
2  import flash.display.*;
3  import flash.events.*;
4  import flash.utils.getTimer;
5  public class Fish extends MovieClip {
6  private var dx:Number; // speed and direction
7  private var lastTime:int; // animation time
8  public function Fish(side:String, speed:Number, altitude:Number) {
9  if (side == "left") {
10     this.x = 140; // start to the left
11     dx = speed; // fly left to right
12     this.scaleX = -1; // reverse
13 } else if (side == "right") {
14     this.x = 900; // start to the right
15     dx = -speed; // fly right to left
16     this.scaleX = 1; // not reverse
17 }
18     this.y = altitude; // vertical position
19     this.gotoAndStop(Math.floor(Math.random()*4+1));
20     addEventListener(Event.ENTER_FRAME,moveFish);
21     lastTime = getTimer();
22 }

```

```

23 public function moveFish(event:Event) {
24     var timePassed:int = getTimer()-lastTime;
25     lastTime += timePassed;
26     this.x += dx*timePassed/1000;
27     if ((dx < 0) && (x < 140)) {
28         deleteFish();
29     } else if ((dx > 0) && (x > 900)) {
30         deleteFish();
31     }
32 }
33 public function fishHit() {
34     removeEventListener(Event.ENTER_FRAME,moveFish);
35     MovieClip(parent).removeFish(this);
36     gotoAndPlay("explode");
37 }
38 public function deleteFish() {
39     removeEventListener(Event.ENTER_FRAME,moveFish);
40     MovieClip(parent).removeFish(this);
41     parent.removeChild(this);
42 }

```


 Fishing.as

```

29 | public function setNextFish() {
30     nextFish = new Timer(1000+Math.random()*1000,1);
31     nextFish .addEventListener(TimerEvent.TIMER_COMPLETE,newFish );
32     nextFish .start();
33 }
34 public function newFish(event:TimerEvent) {
35     if (Math.random() > .5) {
36         var side:String = "left";
37     } else {
38         side = "right";
39     }
40     var altitude:Number = Math.random()*50+400;
41     var speed:Number = Math.random()*150+150;
42     var p:Fish = new Fish (side,speed,altitude);
43     addChild(p);
44     fishes.push(p);
45     setNextFish();
46 }

```

The following code demonstrates how to check if the user wins or loses.

 Fishing.as

```

47 public function checkForHits(event:Event) {
48     for(var harpoonNum:int=harpoons.length-1;harpoonNum>=0;harpoonNum--){
49         for (var fishNum:int=fishes.length-1;fishNum>=0;fishNum-- ) {
50             if (harpoons[harpoonNum].hitTestObject(fishes[fishNum])) {
51                 fishes[fishNum].fishHit();
52                 harpoons[harpoonNum].deleteHarpoon();

```

```

53         shotsHit++;
54         showGameScore();
55         basket_mc.nextFrame();
56         break;
57     }
58 }
59 }
60 if ((shotsLeft == 0) && (harpoons.length == 0)) {
61     endGame();
62     gotoAndStop("lost");
63 }
64 if (shotsHit == 10) {
65     endGame();
66     gotoAndStop("win");

```

```

120     public function removeHarpoon(harpoon:Harpoon) {
121         for(var i in harpoons) {
122             if (harpoons[i] == harpoon) {
123                 harpoons.splice(i,1);
124                 break;
125             }
126         }
127     }
128     // game is over, clear movie clips
129     public function endGame() {
130         // remove planes
131         for(var i:int=fishes.length-1;i>=0;i--) {
132             fishes[i].deleteFish();
133         }
134         fishes = null;
135
136         fishman.deleteFishman();
137         fishman = null;
138         stage.removeEventListener(KeyboardEvent.KEY_DOWN,keyDownFunction);
139         stage.removeEventListener(KeyboardEvent.KEY_UP,keyUpFunction);
140         removeEventListener(Event.ENTER_FRAME,checkForHits);
141         nextFish.stop();
142         nextFish = null;
143     }
144 }
145 }
146 }
147 }

```

(<http://www.adobe.com/support/documentation/en/flash>)

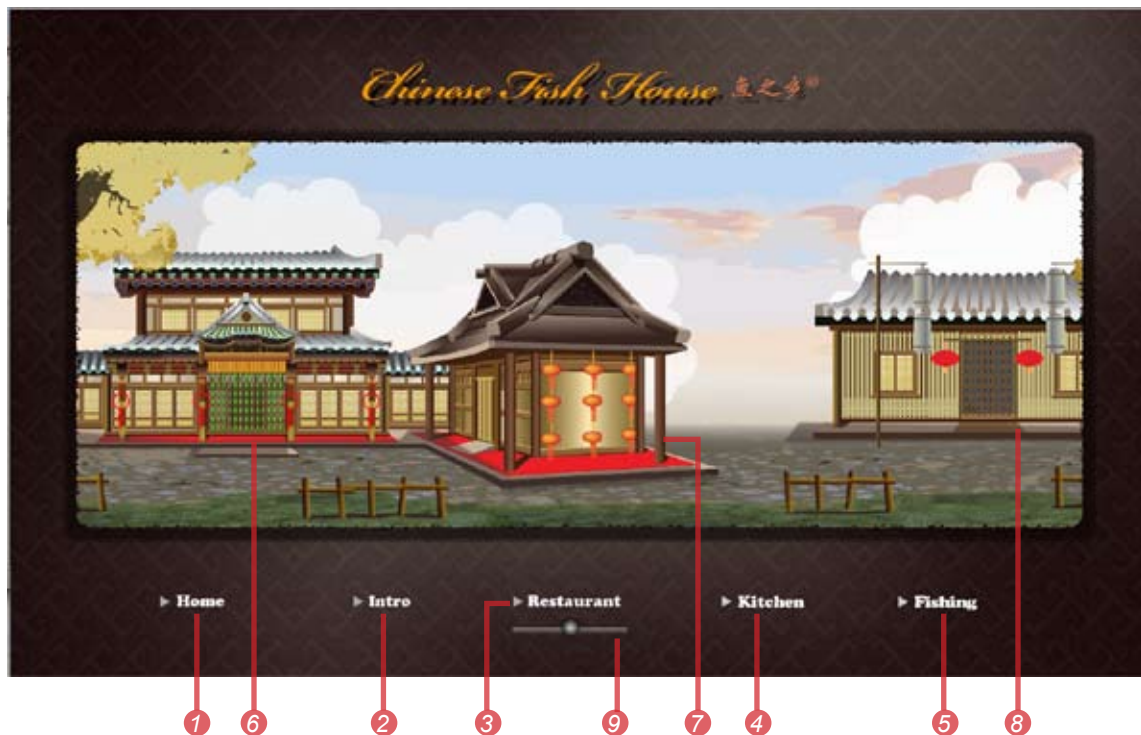
(<http://www.actionscript.org>)

(<http://www.flashandmath.com>)

## 4. Summary

### 4.1 Project Review

#### 4.1-1. Home page



The Home page is created based on the theme of the “Chinese Garden”. Blue sky, moving clouds, yellow tree, green grasses and colorful buildings constitute this visual environment. From left to right, there are three buildings: Restaurant building; Kitchen building and Fishing building. Beside the navigation bar which is on the bottom of the screen, each building is also a hidden button. Users can enter each building by double clicking the building image. When users roll-over the building image with their mouse cursor, the building will automatically move to the center of the stage and a text will pop-up to show the building’s name.

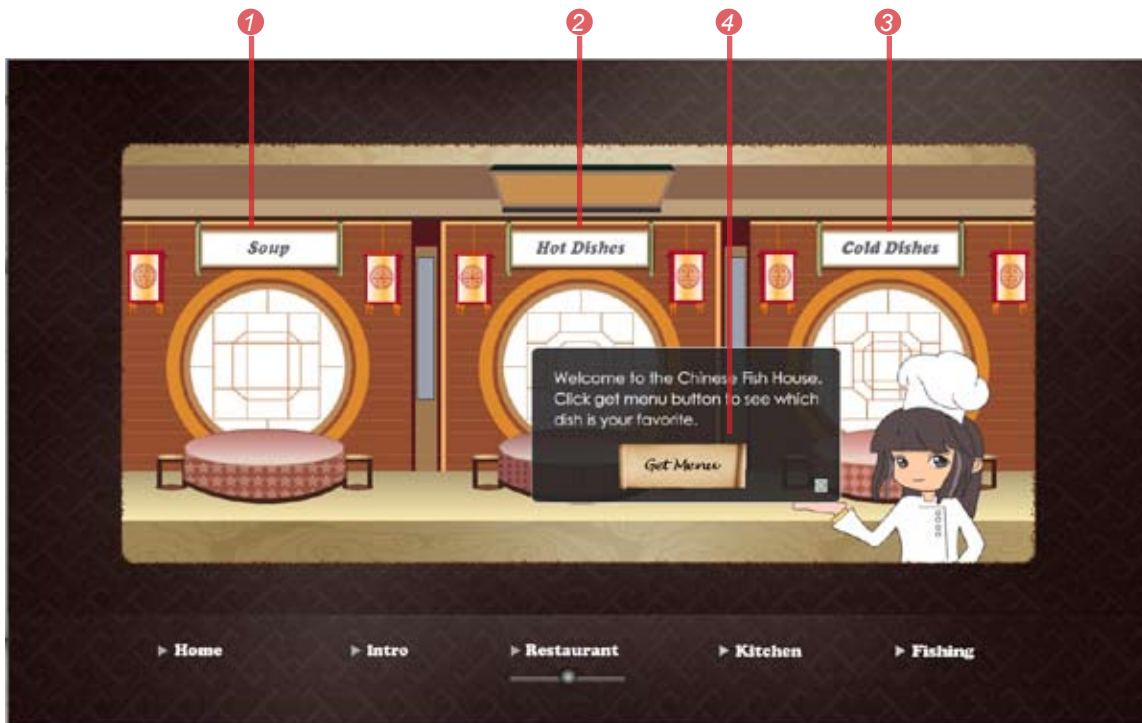
Press ① to go back to home page; press ② to go to introduction; press ③ ⑥ to go to restaurant page; press ④ ⑦ to go to kitchen page; press ⑤ ⑧ to go to game page; press ⑨ to control the background music volume.

## 4.1-2. Introduction



When users open this page, they will see an open reel animation first. This idea came from the 2008 Beijing Summer Olympic opening ceremony. Users can drag the small fish scroll bar <sup>1</sup> up and down on the right side to see all the information on the website.

### 4.2-3. Restaurant



Users can see some traditional elements on the restaurant page: round dinner tables, red lanterns, round windows with different patterns and the plaque hanging on the wall. Also, users can press ① to go to soup single page; press ② to go to hot dishes single page; press ③ to go to cold dishes single page and press ④ to go to all fish dishes multi-up page.



#### 4.1-4. Kitchen



The theme of this section is to simulate a kitchen. When users roll over the cooking tools with their mouse cursor, the tool's name will display on the side of the selected tool. The navigation bar is on the right side.

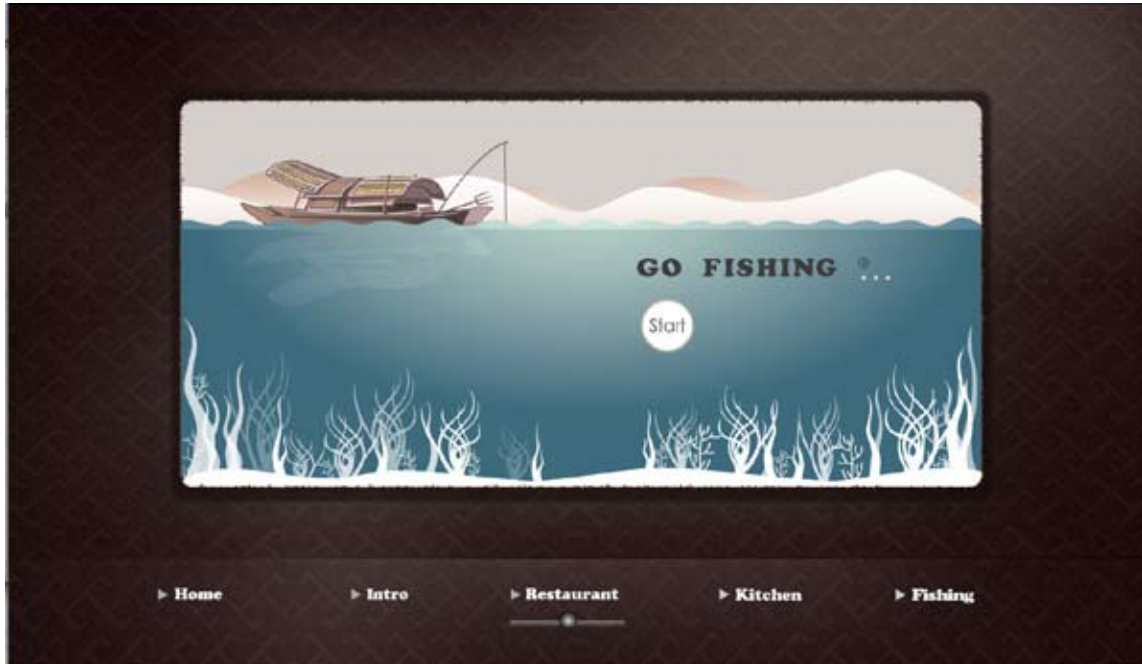






This e-learning course is the most important part of the whole website. Users can learn how to cook Chinese fish in this section. When users open this page, a pop-up instructional text ① will display on the certain object ②, users need to target this object with the mouse click and put the object on the right place ③ by following the notes.

#### 4.1-5. Fishing Game



This page demonstrates one online Flash game: Fishing game. This game is intended to show some Chinese geographical knowledge and traditional culture behind the Chinese cuisine cultures and help users understand Chinese food better.

Pressing ①, go to play the game.

Pressing ②, users can see what fishermen wear when they go fishing.

Pressing ③, the page displays where fishermen do the fishing.

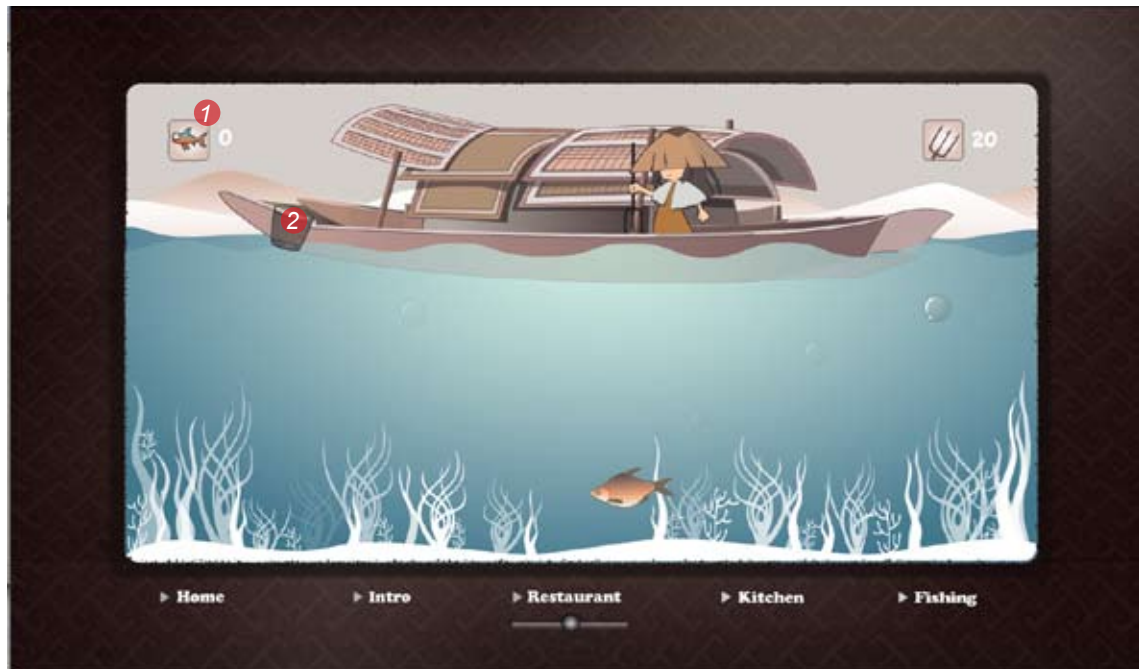
Pressing ④, users can know what kind of fish people usually eat and where these fish are from.





The Long River is the longest river in China and Asia, and the third longest in the world. A lot of Chinese freshwater fish is from Long River. The river is about 6,380 kilometer long and flows from its source in Qinghai Province, eastwards into the East China Sea at Shanghai. It is historically, culturally, and economically important to China.





## Game

Users can shoot the harpoon by pressing the space bar and adjust the location of the fish man by pressing the right arrow and left arrow on keyboard. If the harpoon hits the fish, user can get one point shown on the left top corner ①. A fish will be automatically added into the basket on the side of the boat ② at the same time. If users get ten points, they will win the game. If users shoot twenty harpoons without getting ten points, they will lose the game.

## 5. Conclusion

This is the biggest project I have ever done so far and there were many challenges I have never met before in only one project. I am satisfied with the final completion of this project after nearly six months preparation and creation work.

The first challenge is to pick the right topic for my master's thesis. I was hesitant about which subject can be selected as the topic. I met Marla who is one of my thesis committee members in the lab one day, she asked me if I had some ideas about my thesis, I said I had no idea. She asked me what my favorite thing is which can be my thesis topic; I said I love Chinese food. That was how basically my thesis topic came out. Then I decided to select Chinese food as my thesis topic after I did some research about Chinese restaurants in the United States.

The second challenge is to narrow the topic's scope. I tried to build a website on introduction about all Chinese eight great dishes systems. On my thesis proposal defense, my thesis committee members all thought that my topic was too large to complete. They suggested that I should pay attention to only one system or one dish. After my trip to China, I decided to focus on the fish dish which is a typical dish system in Su cuisine.

The third challenge is the programming of the website. ActionScript 3.0 was new to me. I took several classes to learn how to do flash programming. The advanced Computer Graphics class; Instructional Multimedia class and Programming for Designer class were all very helpful for my thesis, especially the Instructional Multimedia class, almost all the functionality I used for my thesis were from this class.

During the working process, I got many help from my thesis committee, my classmates, my friends and my family. I appreciate all of their support and assistance to enable me to have a successful completion of my project.

## 6. Bibliography

Books:

### **Food**

Lan, P.J. (Eds.). (2007). *Learn To Cook Chinese Dishes - Family Banquet*. Beijing: Foreign Languages Press.

This book introduces the traditional Chinese dishes and the cooking methods.

### **Interaction Design**

Wiedemann, J. (2008). *Web Design: Interactive & Games*. Italy.

A good collection of the most popular interactive games from websites.

Noble, J. J., Braunstein, R. & Wright, M. H. (1st Eds). (2008). *Actionscript™ 3.0 Bible*. Indianapolis, IN: Wiley Publishing, Inc.

A textbook describing basic programming language for building a web application.

Jackson, C. & Hague, J. V. (2006). *Flash 3d (animation, interactivity, and games)*. USA: Focal Press.

This book represents how to use simulated 3D technology in Flash animations and interactive games.

Internet Resource:

**History of Chinese cuisine, history and culture**

[http://en.wikipedia.org/wiki/History\\_of\\_Chinese\\_cuisine](http://en.wikipedia.org/wiki/History_of_Chinese_cuisine)

A explanation of the history about Chinese cuisine.

[http://en.wikipedia.org/wiki/Chinese\\_cuisine](http://en.wikipedia.org/wiki/Chinese_cuisine)

A research of Chinese cuisine.

**Chinese food cooking**

<http://chinesefood.about.com>

A website introduces American Chinese food.

**Chinese architectural elements**

[http://en.wikipedia.org/wiki/Ancient\\_Chinese\\_wooden\\_architecture](http://en.wikipedia.org/wiki/Ancient_Chinese_wooden_architecture)

The information about ancient Chinese wooden architecture.

**ActionScript3.0**

<http://www.adobe.com/support/documentation/en/flash>

Adobe Flash website providing typical features and functions of Flash CS3.

<http://www.actionscript.org>

A website releasing some open source codes of ActionScript3.0.

<http://www.flashandmath.com>

The ActionScript3.0 tutorial webiste for designers and developers.



## 7. Appendix

### 7.1 Thesis Proposal

#### **7.11 Problem Statement:**

Information design for the web and interactive multimedia integrates content with visual indicator. Legibility and clear communication of information and direction are important to the success of graphical user interface design. My thesis is a systematic introduction about Chinese food information in a website. The objective of the thesis is to increase the efficiency of transmitting information to users, making it more easily understandable and less time-consuming to be comprehended. Users can find classic Chinese food information conveniently from my website. Information on Chinese food is vast, there are hundreds of thousands of food and many different cooking methods depending on the different regions in China. Chinese food includes eight dished systems. I will only focus on introducing fish dishes including the ingredients and the cooking methods to help users obtain the finest information about Chinese fish dishes as well.

The website will include five parts:

#### **1. Home page:**

I will create Chinese restaurant images on the home page. There will be two waiters standing beside the entrance. When users open the menu, they will see a navigation system on the menu.

#### **2. Introduction:**

The introduction page will demonstrate what this website is about.

#### **3. Restaurant:**

In the restaurant section, users can learn about various Chinese dishes.

#### ***4. E-learning:***

In this section, users can learn how to cook Chinese food by following the notes.

#### ***5. Flash Game:***

Users can play a Flash game.

I will finish my thesis by two steps. The first step is collecting information about Chinese food; the second step is working on the computer to create the website. There are so many kinds of Chinese food in China, so I need to collect useful information from books and websites and classify the information by different groups. Maybe there are several methods to categorize these messages, so I need to carefully consider the relationships among each message and find out the best way to organize them. The website will be performed primarily through the form of animations, photography and typography. I will create this website by application of the software: Adobe Photoshop, Adobe Flash and Adobe Illustrator. Also, I will focus on using Adobe Flash to create some animations and build interactive functionality; using Adobe Illustrator to create vector images and web pages and using Adobe Photoshop to edit photos which can display Chinese food better than vector paintings.

### **7.12 Background**

Many Americans enjoy eating Chinese food. Although there are lots of Chinese restaurants in the United States, most of them do not supply 'real' Chinese food. It is American Chinese food. I know many Americans are interested in Chinese food, the cooking methods and Chinese culture. I feel that it is very necessary to introduce some classic Chinese food to American people.

The following is the general background of Chinese food.

Kinds of food: Vegetable: Chinese cabbage, tomato, cucumber, etc.

Meat: pork, beef, fish, shrimp, etc.

Fruit: apple, orange, pear

Flavor: salt, sour, sweet, spicy, etc.

Systems: eastern, western, northern, middle, etc.

Ways of cooking: bake, boil, stew, roast, etc.

Name of food: Stew Tofu, bacon, shrimp, etc.

Special food: rabbit, snake, bird, snail, grasshopper, etc.

### **7.13 Scope**

This thesis will explore the possible implementation of the information design promoting and flash technology which is used in the website design.

### **7.14 Literature Survey**

I will search the information about Chinese food from websites like Google search, Yahoo, or Baidu (the largest Chinese search website in the world). Also I will watch many professional design websites to open my mind. At the same time I will get enough information from the books. The information includes Chinese food history; how to cook Chinese food and the nutrition of every kind of food. I also need the books which educate people how to create the website, including introduction of HTML and CSS, and introduction of how to use the Adobe Flash. I will find them in the RIT library or take classes.

### **7.15 Methodology**

1. **Design** - I will combine the information design method and computer technology (Adobe Flash, Adobe Photoshop, Adobe Illustration, etc.) to build my website.
2. **Subjects or participants** - Americans who like Chinese food are my target audience including children or adults.
3. **Instruments** - The Mac and I need to ask people which website version they will prefer.
4. **Procedure** - I will demonstrate my website on the computer. The audience can browse the website online. The play time is determined by the audience who go through the website.

### **7.16 Limitations**

Adobe Flash ActionScript 3.0 is very important in order to build the website. My limitation is that I need to learn how to use Adobe Flash ActionScript 3.0 rather than ActionScript 2.0 to build a Flash game and a website. Because ActionScript3.0 is a new Flash programming.

Secondly, translating Chinese food names into English names is also a challenge to me. Maybe I could go to Chinese restaurants in Rochester to get the English names for Chinese food.

### **7.17 Implications of the Research:**

User interface:

Hundreds of millions of people get information from Internet, it is the most important platform for communication today. My thesis represents information design for the web and the interactive multimedia. It integrates content with visual indicators.

Interactive design:

It will include an e-learning application and a Flash game to help users understand easily the process of cooking fish and fishing by Chinese traditional methods. If I have enough time, I will design a feedback system on my website, so I can collect information from users in time and improve the function of the system to make it more effective.

2D animation:

I will add some 2D animations on my website to make it more attractive.

Also, my research is focused on both the information design and website design. Information design belongs to graphic design; and website design is computer graphic design. I try to build connections between these two professional fields and try to find out the common points between graphic design and computer graphic design.

### **7.18 Peer Review:**

I can upload my website on Internet, so people who are interested can go to the website and get information about Chinese food. Because of my correct method classification, people can get to know classic Chinese food easily.

I am proud that I can do some small contribution to promoting communication between China and the United States, I hope if users have a chance to travel around China, my website can help them to enjoy the most delicious food in China. If users have more interest, my website can help them cook Chinese food at home.

I can put my website on Internet. I need to get some suggestions from Chinese professional chefs and website designers.

There are some awards I can apply for.

Adobe - Education: 2009 Adobe Design Achievement Awards

The WWW Awards

The FWA: Favorite Website Awards

The International Web Page Awards

### **7.19 Target Audience**

*Male / Female:* Both male and female.

*Age:* Both children and adults.

*Educational Level:* They might have achieved a higher education because they need to know how to use the website.

*Motivational Level:* They have interests in Chinese food and Chinese culture.

*Experience with Thesis Subject Matter:* They have experiences on using the websites and enjoy eating Chinese food.

#### **2 Types of Persons (Describe a typical user):**

**Jason**, male, 40 years old. He is a businessman who works for a large company. He has opportunities to go to China for business trip. He likes Chinese culture very much especially Chinese food. So the website needs to display some Chinese traditional cultures and include some Chinese traditional elements, for example, Chinese red. It also must contain enough information about Chinese food, so he can get what he wants.

**Sarah**, female, 19 years old. She is a college student. As other teenagers, she likes going through website and watching Japanese cartoons. Also she likes cooking food, she cooks Chinese food sometimes. So the website can include some small Flash animations which make the website not too boring and attracts more young people. This website needs to have some entertainment elements.

### **7.20 Software and Hardware Requirements**

- Mac and PC computer
- Windows XP Professional
- 1GB free disk space and 526 MB main memory