

VIETNAM NATIONAL UNIVERSITY, HO CHI MINH CITY  
UNIVERSITY OF TECHNOLOGY  
FACULTY OF COMPUTER SCIENCE AND ENGINEERING



## Snake Game in Console Project

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### Report

# Thien Phuc's Snake

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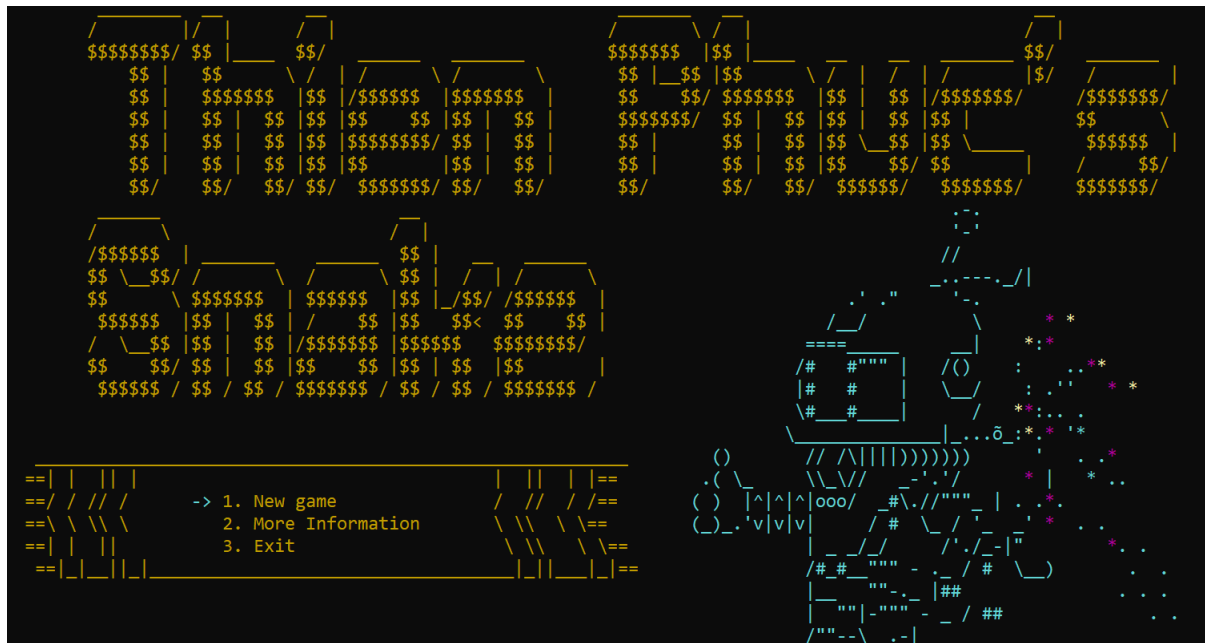
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HO CHI MINH CITY, January 2022



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## 1 Introduction

*We know that implementing Snake game project is a good way to review and revise the programming knowledge. The idea of this game is not new.*

Snake is a game with simple graphics but is the most popular in the world. It was first released in 1976 but until it was programmed to be included in Nokia mobile phones (in 1977), that Snake really became known to the masses.

I see that the idea of this game is really interesting but it is not attractive enough as before. I think there are three main reasons for that problem :

- + This game is too old for users to play. It can't negate that some mode was made to innovate this game. But I think that it is not enough to save this game.
- + The game play is boring. The mission of the snake is just eat the food and suicide by the length of itself.
- + More and more good game have been published. The users are free to choose the game that they want to play. However, if our game are charmed, the percentage of users will be increase.

To handle this problem, I will make a new game base on the idea of this old snake. I can be called "new wine in old bottles" project.

## 2 Graphic design

*The eye-catching graphics is a big plus score for any games. So we need to focus on that part.*

On the Internet, there are a lot of tools, available pictures and drawings. I will introduce some of that for you.

## 2.1 Objects

*Objects in my game are almost in <https://www.asciiart.eu>*

The caterpillar :

$$\begin{array}{c} \backslash \quad / \\ >v< \\ >0< \\ >0< \end{array}$$

### The spider :

```

      /  _  \
     \_ \(_)/_/
      _//o\\_
       /    \

```

### The ancient snake :



**The mouse :**

```
()-( ).----.  
  \"/^  _ _ _ ; _ _ _ . '  
    ^ ^      ^ ^
```

**The father bird and his son :**

```
  \\  
  (o>  
\\_//)  
\_/_)  
 _|_
```

```
  \\  
  (o>  
 _(( _  
  ||
```

**The pine :**

```
  A  
  /I\  
 //I\\  
 ///I\\\  
 ' //I\\ '  
  'I '  
 +++++++
```

**The monkey couple :**

```
    { "-   ." }  
 \_   /\   //\  
  \_| ||   || |_/
```

**The blacksmith's house :**

```
          x  
.-.  _ _ _ _ _ | _ _  
|=|/   tho ren \  
|-| _ _ _ _ _ |  
| | _ _ _ _ _ | " _ _ |  
| _ | [X] _ | _ _ _ _ |
```

**The flower :**

```
  -  
  (_  
  (_@_  
  (_
```

## 2.2 The letters and sentences

*You can go to the Internet and pick any pages that support Text to ASCII Art Generator.*

In this project, I used *<http://patorjk.com>* for my work.

You

[illegible]

This title can be made as the picture below.

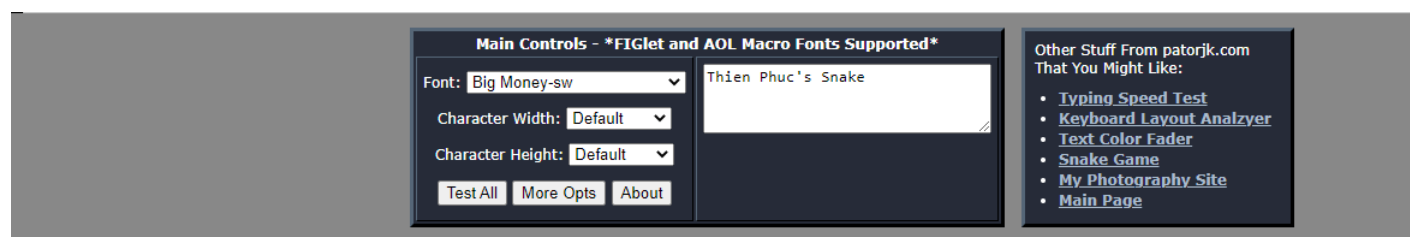
[illegible]

FIGURE 1 – Title by ASCII Art

### 3 Idea and story

Thien Phuc's Snake is a role playing game. You are a mother snake and beside you that is your son. Your son is a strong snake. His special skill is puffing fire. Your quest is make the villagers around you happy.

In the round 1, you will fight with a caterpillar and a spider. The final aim of this round is earn two gold for the blacksmith. If the blacksmith have two gold, he will give you the shield for round 2. In this project, I just mention about round 1 of this game.

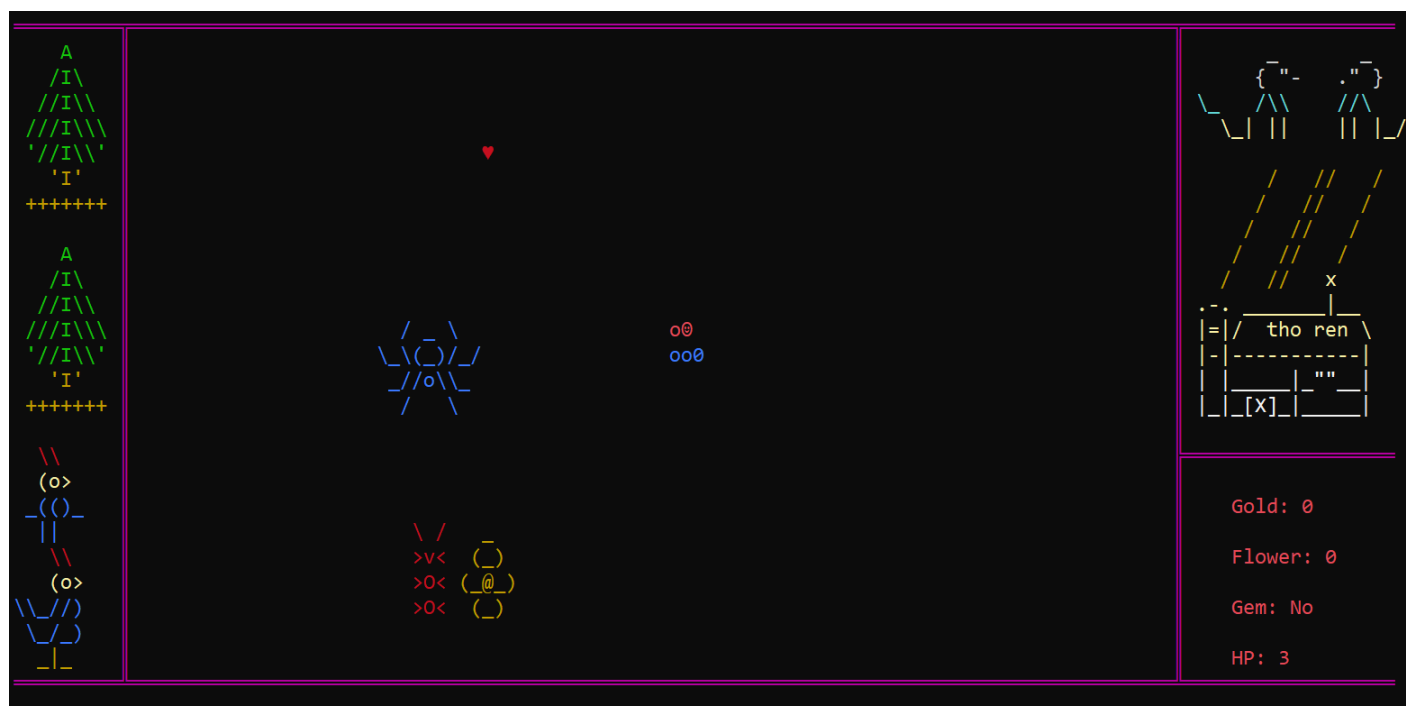


FIGURE 2 – Starting round 1

The blacksmith want to grow flower but he hates insects. The first quest for you is find **five flowers**. Immediately, the mouse - pet of the blacksmith couple - will appear in the right corner of the map.

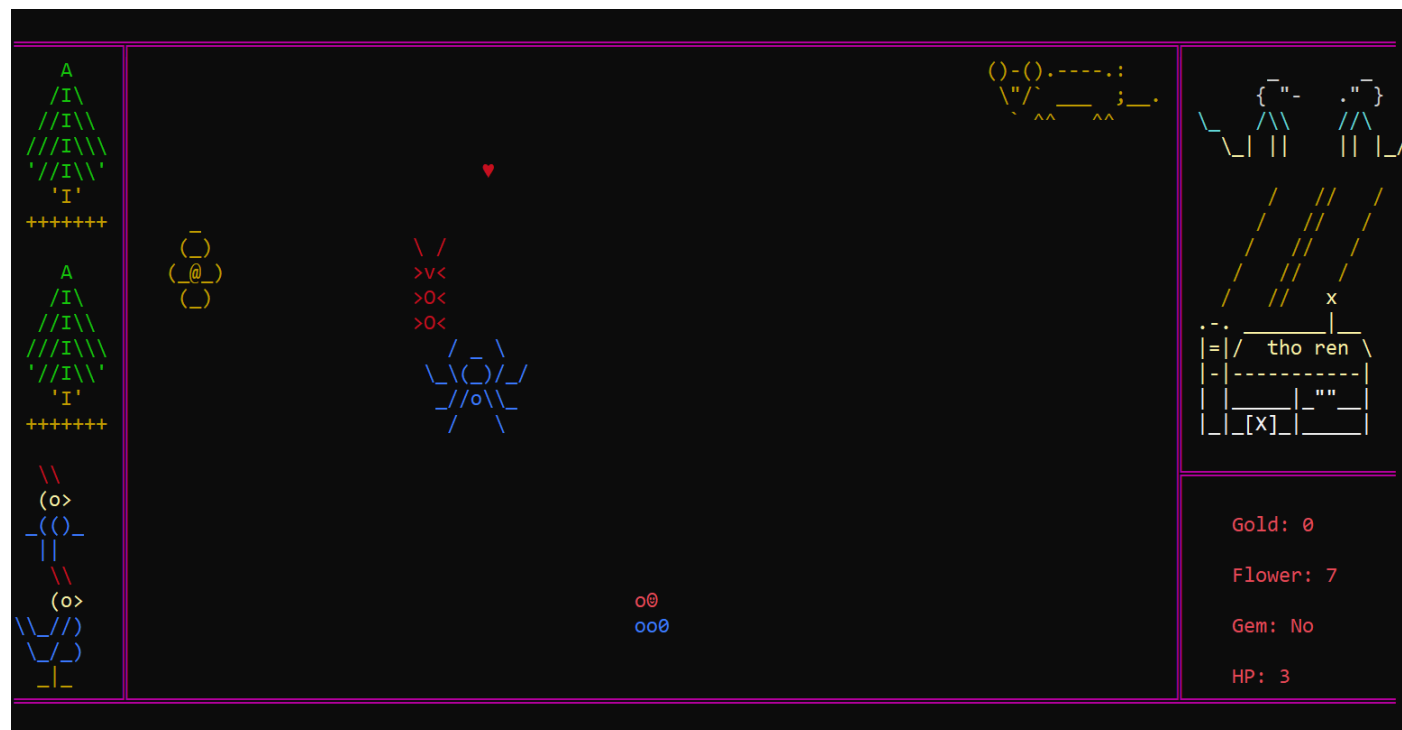


FIGURE 3 – The mouse appear in the first quest

In this case, I ate **7 flowers** but the mouse is not disappear. This mean if the flowers is  $\geq 5$ , the mouse will wait you to change the flower. You trade 5 flowers, it will give you a gem. At this time, Gem in the right bottom box will change to "Yes".

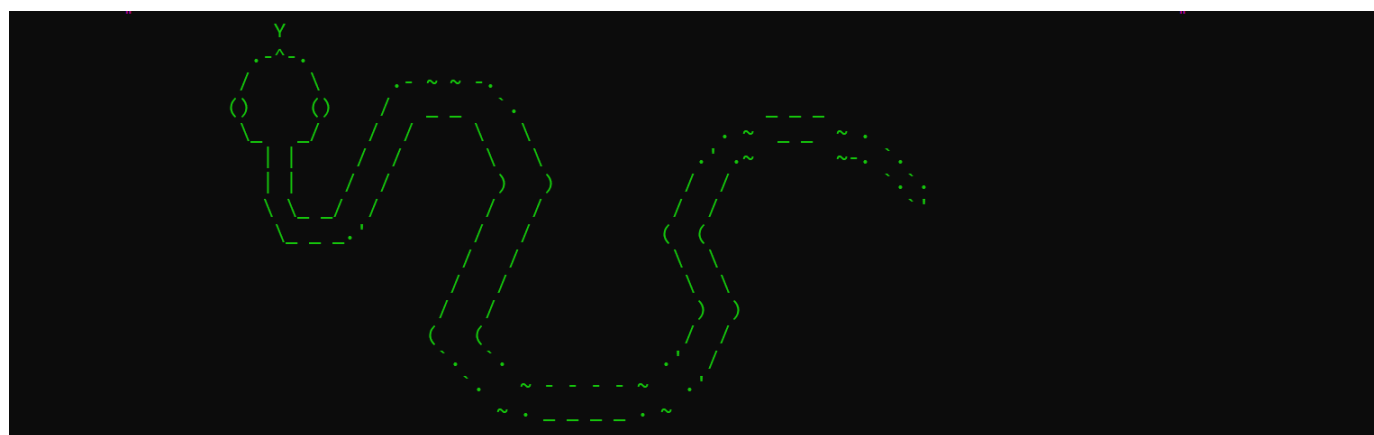


FIGURE 4 – The ancient snake the smell the gem in the air

This gem is the ancient gem of the huge snake. The blacksmith have already picked in the mine. You can go to the point at the tongue of the ancient snake to pay him. The ancient snake will repay you by teaching your son. The son snake at that time can puff fire very long.





FIGURE 5 – The small snake evolution

You can see the tail of your son be different than that in the past. Now you can kill the caterpillar and the spider easily.

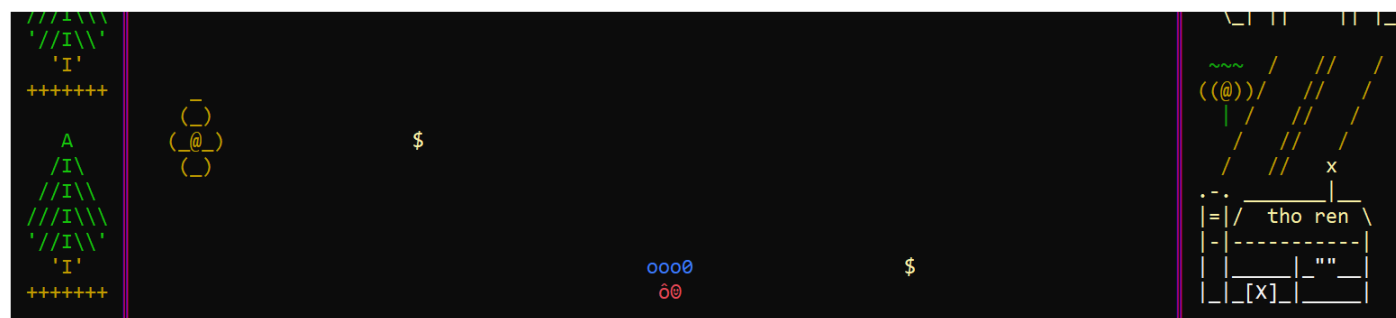


FIGURE 6 – The gold

After you kill the spider and caterpillar, at the position they died will appear gold. Collecting two gold and the blacksmith's door will open.

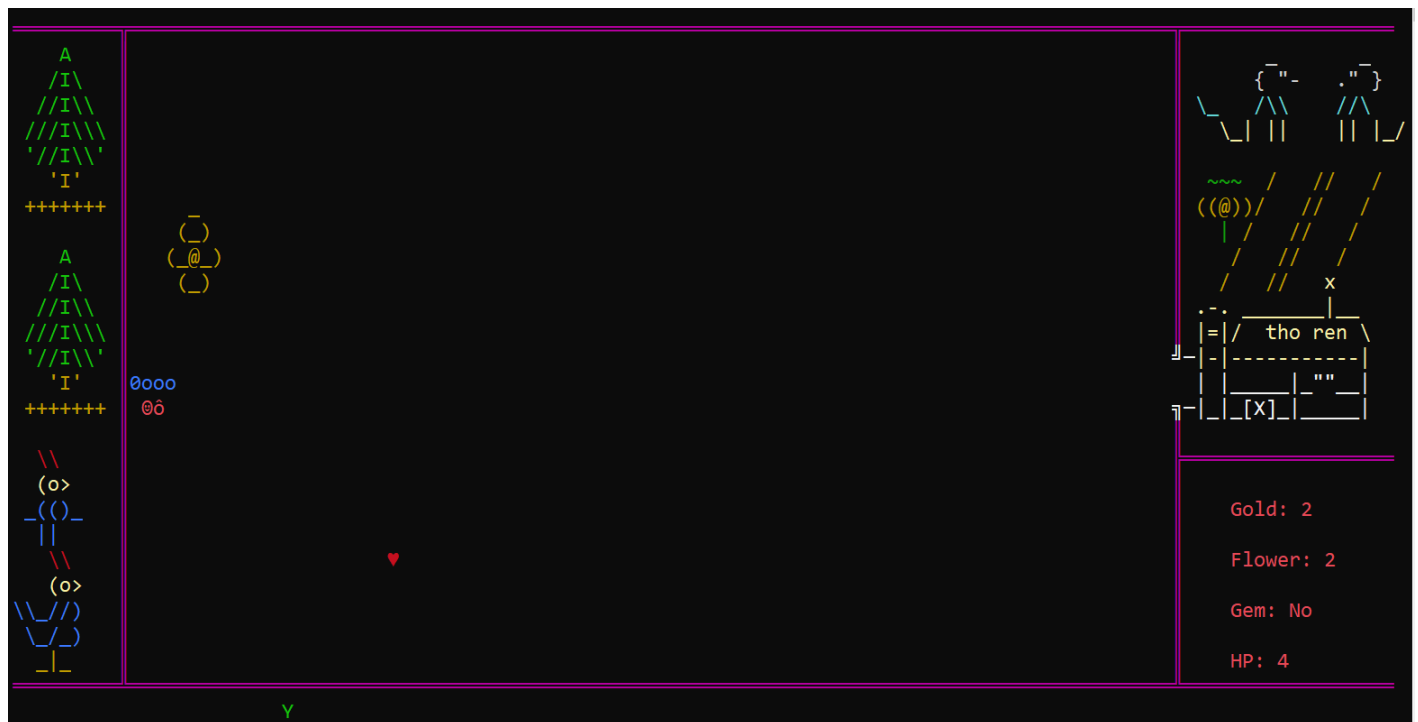


FIGURE 7 – The blacksmith's door

Go to that gate to finish the first round. You can see the detail in the link :

## 4 Explain the functions

*In this project, I used the functional programming. The more understanding the functions, the better we handle this code. I will explain for you all the functional of their functions.*

```
void ve();
```

Drawing Becodeching logo and letters.

```
void bang_thoat();
```

Drawing the picture if you choose Exit in the Menu.

```
void bang_thua();
```

Drawing the picture after you lose the game (HP <= 0)

```
void bang_menu();
```

This function is used for drawing the Menu.

```
void ve_khung_diem(int hp, int gold, int flower, bool gem);
```

Drawing the score board.

```
bool ban_trung_qua(int x, int y);
```

Checking if the small snake's fire overrides the heart or not.

```
bool ban_trung_hoa(int x, int y);
```

Checking if the small snake's fire overrides the flower or not.

```
bool ban_trung_vang(int x, int y);
```

Checking if the small snake's fire overrides the gold or not.

```
void ve_tuong();
```

Drawing the rectangle frame around the game.

```
void ve_chuot();
```

Drawing the mouse.

```
void xoa_chuot_them_hoa();
```

Describing what happen when the snake trade with the mouse.

```
void tao_ran_me();
```

Creating the array of the mother snake.

```
void ve_ran_me();
```

Drawing the mother snake.

```
void me_di_chuyen(int x, int y);
```

Moving of the mother snake.

```
void tao_ran_con();  
Creating the little snake.  
  
void ve_ran_con(bool tien_hoa);  
Drawing the little snake.  
  
void ran_de_quai();  
Describing what happen when the snakes override the monsters.  
  
void ve_vang();  
Drawing the gold.  
  
void tia_lua(int choose);  
The little snake's spark.  
  
void xoa_hoa();  
Deleting the flower.  
  
void skill_ran_con();  
Describing how to use little snake's skill.  
  
void con_di_chuyen(int x, int y);  
Moving of the little snake.  
  
bool ban_trung_sau(int x, int y);  
Defining what happen with the caterpillar if it is shot by the little snake.  
  
bool sau_an_hoa();  
The caterpillar eats the flower.  
  
bool ve_sau();  
Drawing the caterpillar.  
  
void sau_di_chuyen();  
Moving of the caterpillar.  
  
void tao_qua();  
Creating the heart.  
  
bool kt_ran_de_qua();  
Checking if the heart created position overrides the snake or not.  
  
void ve_qua();  
Drawing the heart.  
  
bool kt_ran_an_qua();  
The snakes eat the heart.
```

void tao\_hoa();  
Creating the flower.

bool kt\_ran\_de\_hoa();  
Checking if the flower created position overrides the snake or not.

bool kt\_ran\_an\_vang();  
Checking the snakes eat the gold or not ?

void ve\_hoa();  
Drawing the flower.

bool kt\_ran\_an\_hoa();  
Checking the snakes eat the flower or not ?

bool ve\_nhen();  
Drawing the spider.

void nhen\_di\_chuyen();  
Moving of the spider.

bool ban\_trung\_nhen(int x, int y);  
Defining what happen with the spider if it is shot by the little snake.

void ve\_cong();  
Drawing the gate.

void play();  
The function is used for depicting the moving of the snakes and running the game.

void chay\_game();  
Multi-thread function:  
+ Snake  
+ Skill of the snake  
+ Caterpillar  
+ Spider

## **5 Some suggestions to improve this game**

### **5.1 Adding the story within the game**

You can design the conversations of the characters intermingled to this game. It make the game more attractive. It will help the player easier to understand the story of this game. More than that, it will give you a wide place to show your graphical level.

### **5.2 Design the second round for this game**

In the second round. you can renew the game by changing objects interaction. You can making a story like.....

When the snakes bring 2 gold to the blacksmith's house. The blacksmith's give their a shield. And the mission of this round is protect the new villager in the bottom. You can draw a new house in the bottom and create new monsters. The monsters can shoot and the snake will use the shield to defend or rebound the bullet.

### **5.3 Using your own creativity**

I believe that creativity make us special. You can use your creativity to make this game more interesting.