# 贪食蛇游戏

1. **项目简介**：

1、关于游戏的介绍：

贪食蛇游戏是一条不停游动的蛇不断的捕食来达到自身的增长，但是若蛇碰到自身的身体或者碰到了任何障碍物，则游戏结束。如果吃到的食物大于三个，则自动晋级下一级。

2、系统开发环境

Win7系统 、Microsoft Visual Studio（简称VS）

3、项目实现

a、 处理的消息有：WM\_COMMAND、WM\_SIZE、WM\_PAINT、WM\_DESTROY、WM\_TIMER、WM\_KEYDOWN

b、 使用到的API函数：SelectObject、MoveToEx、LineTo、CreatePen、Beep、SetTimer、rand()

c、代码实现：

**1）绘制蛇身**

draw\_snake(hWnd, hdc);

void draw\_snake(HWND hWnd, HDC hdc)

{

HPEN hpen\_black = CreatePen(PS\_SOLID, 2, RGB(0x00, 0x00, 0x00));

HPEN hpen\_white = CreatePen(PS\_SOLID, 2, RGB(0xff, 0xff, 0xff));

HPEN hpen\_red = CreatePen(PS\_SOLID, 2, RGB(0xff, 0x00, 0x00));

int i=0;

for(i=0;i<s.length;i++)

{

// erase

/\* SelectObject(hdc, hpen\_white);

MoveToEx(hdc, s.old\_x[i]+0,s.old\_y[i]+0, NULL);

LineTo(hdc, s.old\_x[i]+0,s.old\_y[i]+20);

LineTo(hdc, s.old\_x[i]+20,s.old\_y[i]+20);

LineTo(hdc, s.old\_x[i]+20,s.old\_y[i]+0);

LineTo(hdc, s.old\_x[i]+0,s.old\_y[i]+0);\*/

// draw

if(i==0)

{

SelectObject(hdc, hpen\_red);

}

else

{

SelectObject(hdc, hpen\_black);

}

MoveToEx(hdc, s.x[i]+0,s.y[i]+0, NULL);

LineTo(hdc, s.x[i]+0,s.y[i]+20);

LineTo(hdc, s.x[i]+20,s.y[i]+20);

LineTo(hdc, s.x[i]+20,s.y[i]+0);

LineTo(hdc, s.x[i]+0,s.y[i]+0);

s.old\_x[i] = s.x[i];

s.old\_y[i] = s.y[i];

}

}

**2）绘制食物**

draw\_food(hWnd, hdc);

void draw\_food(HWND hWnd, HDC hdc)

{

int food\_x=game.food\_x;

int food\_y=game.food\_y;

HPEN hpen\_green = CreatePen(PS\_SOLID, 2, RGB( 0x00, 0xFF,0x00));

SelectObject(hdc, hpen\_green);

MoveToEx(hdc, food\_x+0,food\_y+0, NULL);

LineTo(hdc, food\_x+0,food\_y+20);

LineTo(hdc, food\_x+20,food\_y+20);

LineTo(hdc, food\_x+20,food\_y+0);

LineTo(hdc, food\_x+0,food\_y+0);

}

**3）绘制障碍物**

draw\_block(hWnd, hdc);

void draw\_block(HWND hWnd, HDC hdc)

{

HPEN hpen\_blue = CreatePen(PS\_SOLID, 2, RGB(0x00, 0x00, 0xff));

SelectObject(hdc, hpen\_blue);

for(int i=0;i<block\_length\_stage[game.stage];i++)

{

MoveToEx(hdc, block\_x\_stage[game.stage][i]+0,block\_y\_stage[game.stage][i]+0, NULL);

LineTo(hdc, block\_x\_stage[game.stage][i]+0,block\_y\_stage[game.stage][i]+20);

LineTo(hdc, block\_x\_stage[game.stage][i]+20,block\_y\_stage[game.stage][i]+20);

LineTo(hdc, block\_x\_stage[game.stage][i]+20,block\_y\_stage[game.stage][i]+0);

LineTo(hdc, block\_x\_stage[game.stage][i]+0,block\_y\_stage[game.stage][i]+0);

}

}

**4）按上下左右键控制蛇身的移动方向**

run\_snake(hWnd);

void run\_snake(HWND hWnd)

{

int step = s.step\_span;

int i=0;

switch (s.dir)

{

case left:

for(i=s.length-1;i>0;--i)

{

s.x[i] = s.x[i-1];

s.y[i] = s.y[i-1];

}

s.x[0] = s.x[0] - step;

s.y[0] = s.y[0];

break;

case right:

for(i=s.length-1;i>0;--i)

{

s.x[i] = s.x[i-1];

s.y[i] = s.y[i-1];

}

s.x[0] = s.x[0] + step;

s.y[0] = s.y[0];

break;

case up:

for(i=s.length-1;i>0;--i)

{

s.x[i] = s.x[i-1];

s.y[i] = s.y[i-1];

}

s.x[0] = s.x[0];

s.y[0] = s.y[0]-step;

break;

case down:

for(i=s.length-1;i>0;--i)

{

s.x[i] = s.x[i-1];

s.y[i] = s.y[i-1];

}

s.x[0] = s.x[0];

s.y[0] = s.y[0]+step;

break;

}

if(hit())

{

Beep(5000, 50);

Beep(2500, 50);

Beep(1000, 50);

Beep(5000, 50);

Beep(2500, 50);

Beep(1000, 50);

Beep(5000, 50);

Beep(2500, 50);

Beep(1000, 50);

exit(0);

}

if(is\_eat())

{

game.num\_eat++;

if(pass())

{

next\_stage();

}

new\_food();

Beep(1000, 50);

Beep(2000, 50);

Beep(4000, 50);

int tailend = s.length;

s.x[tailend]=s.x[tailend-1];

s.y[tailend]=s.y[tailend-1];

s.length++;

}

}

**5）显示新食物**

void new\_food()

{

int x;

int y;

int range\_max = 30;

int range\_min = 0;

x= (int)((double)rand() / (RAND\_MAX + 1) \* (range\_max - range\_min) + range\_min);

y= (int)((double)rand() / (RAND\_MAX + 1) \* (range\_max - range\_min) + range\_min);

//x=rand()%5;

//y=rand()%5;

game.food\_x = game.grid\_init\_x + x\*s.step\_span;

game.food\_y = game.grid\_init\_y + y\*s.step\_span;

}

**6）晋级更新数据**

void next\_stage()

{

Beep(500, 50);

Beep(1000, 50);

Beep(2000, 50);

Beep(4000, 50);

Beep(8000, 50);

game.num\_eat = 0;

game.stage++;

for(int i=0;i<block\_length\_stage[game.stage];i++)

{

block\_x\_stage[game.stage][i]=game.grid\_init\_x+block\_x\_stage[game.stage][i]\*s.step\_span;

block\_y\_stage[game.stage][i]=game.grid\_init\_x+block\_y\_stage[game.stage][i]\*s.step\_span;

}

s.length = 3;

}