Linux实验报告

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**项目**

**Javascript实现疯狂坦克大战网页版游戏**

**项目描述**

**主坦克用方向键移动，空格发射。 右坦克用IJKL键移动，F键发射。每辆坦克一次可发射2颗炮弹**

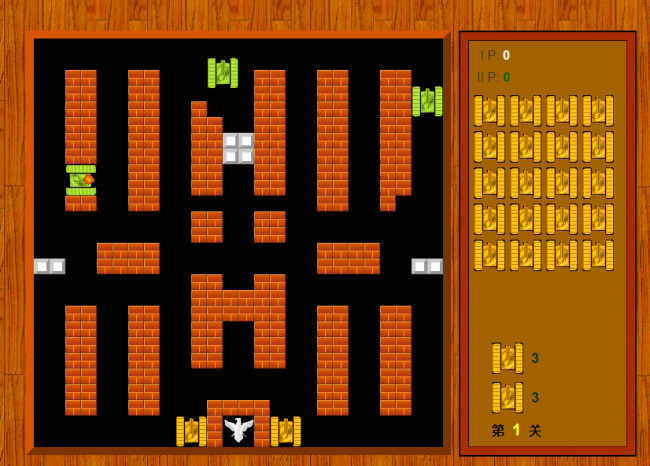
**运行环境**

**浏览器**

**项目技术**

**Javascript html css**

**运行截图**



**源码**

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">

<html xmlns="http://www.w3.org/1999/xhtml">

<head>

<title> 坦克游戏 - 主坦克用方向键移动，空格发射。 右坦克用IJKL键移动，F键发射。每辆坦克一次可发射2颗炮弹</title>

<style>

html,body{background:#16242C url(img1.gif);cursor:default;height:100%;overflow:hidden;margin:0;color:#eee;text-align:center;}

#popTxt{padding:10px;font-size:100px;font-family:Arial;position:relative; top:36%; color:#eee;}

#popTxt span{position:absolute;top:10px;left:-1px;color:#990000;}

#iMap{position:absolute;left:0;top:0;z-index:999}

#iMap span{width:20px;height:20px;overflow:hidden;font-size:10px;display:block; float:left;}

#iMap span.steel{background:url(imga.gif) no-repeat;}

#iMap span.tod{background:url(imgf.gif) no-repeat;}

#iMap span.wall{background:url(imgb.gif) no-repeat;}

#iMap span.sea{background:url(imgd.gif) no-repeat;}

#iMap span.podium1{background:url(imgi.gif) no-repeat;}

#iMap span.podium2{background:url(imgi.gif) no-repeat -20px 0;}

#iMap span.podium3{background:url(imgi.gif) no-repeat 0 -20px;}

#iMap span.podium4{background:url(imgi.gif) no-repeat -20px -20px;}

#gameMap{

position:absolute;background:black;

border:10px outset #C65D05;

width:520px;height:520px;

top:50%;margin-top:-270px;

left:50%;margin-left:-270px;

}

#gameInfo{

position:absolute;background:#993300;

border:2px outset #000;

top:50%;margin-top:-270px;

left:50%;margin-left:280px;

}

.shell{

margin:10px;

width:200px; height:516px;

background:#996600;

border:1px inset #6C120D;

text-align:left;

color:#333; font-family:Arial;

}

.shell div{margin:10px; }

h3{

color:#FFCC00;

text-align:center;

margin:3px;

background:#990000; padding:5px;

border:1px outset #900;font-family:Arial;

font-size:16px;

}

#tanks{

margin:3px;

}

.etank,.tank{

width:40px;height:40px;background:url(imgc.gif) no-repeat;

position:absolute;top:480px;left:180px;z-index:99;

}

.etank{

background:url(imgh.gif) no-repeat;

}

.ball{

width:40px;height:40px;overflow:hidden;font-size:4px;background:url(imgg.gif) no-repeat;

position:absolute;z-index:1000;

}

#win{z-index:0}

#goal1{color:#eee;}

#goal2{color:#006600}

#tanks{overflow:hidden; }

#tanks span{

width:40px;height:40px;background:url(imgc.gif) no-repeat; display:block; float:left; margin:3px;

}

#myTanks{

position:absolute; bottom:0;left:20px;color:#000;font-weight:bold;

}

#myCount1,#myCount2{

height:40px;line-height:40px; background:url(imgc.gif) no-repeat; text-indent:50px;

font-size:18px;font-weight:bold;color:#003333;

}

#stageIndex{font-size:20px;color:#FFFF00;padding:10px; }

</style>

</head>

<body>

<div id="gameBox">

<div id="gameMap">

<div id="win"></div>

</div>

<div id="gameInfo"><div class="shell">

<div>&nbsp;I P: <strong id="goal1">0</strong> </div>

<div>II P: <strong id="goal2">0</strong></div>

<div id="tanks"></div>

<div id="myTanks">

<div id="myCount1">3</div>

<div id="myCount2">3</div>

<div>第<strong id="stageIndex">1</strong>关</div>

</div>

</div></div>

</div>

</body>

<script>

/\*

游戏配置

\*/

Game={

stage:1,/\* 关数 \*/

end:false,

win:false,

sendMax:2,/\* 坦克默认每次可发射弹量 \*/

enemy:20,/\* 敌机数 \*/

full:20,

kill:0,

play1:3,

play2:3,

val1:0,

val2:0

};

/\*

地址栏控制关数

\*/

autoStage=location.href.split('?')[1];

if(!isNaN(autoStage))Game.stage=autoStage;

Game.begin=function($){/\* --------------------- Tank1998 Begin-------------------------------------------------------- \*/

/\*

map Data

\*/

tankMap=[

/\*NO.1\*/'0,0,001100110011001100110011,001100110011001100110011,001100110011001100110011,001100110011001100110011,001100110011221100110011,001100110011221100110011,001100110011001100110011,001100110011001100110011,001100110000000000110011,0000000000110011,0000000000110011,11001111000000000011110011,22001111000000000011110022,0000000000110011,0000000000111111,001100110011111100110011,001100110011001100110011,001100110011001100110011,001100110011001100110011,001100110000000000110011,001100110000000000110011,001100110001111000110011,000000000001561,000000000001781'

/\*NO.2\*/,'0000002200000022,0000002200000022,001100220000001100110011,001100220000001100110011,001100000000111100112211,001100000000111100112211,00000011000000000022,00000011000000000022,33000011000022000011331122,33000011000022000011331122,3333000000110000220033,3333000000110000220033,001111113333332200003311,001111113333332200003311,000000223311001100110011,000000223311001100110011,221100220011001100000011,221100220011001100000011,001100110011111100112211,001100110011111100112211,0011001100111111,0011001100111111,001100000000000000110011,001100000001111000110011,001100110001561000111111,001100110001781000111111'

/\*NO.3\*/,'000000001100000011,000000001100000011,0033333311,00333333110000000000222222,00333333,11333333,00333333000000110011111110,00333333000000110011111110,333333331111111100110001,333333331111110000110001,333333330000110000000001,333333330000110000000001,003300000000222222000033,003300000000222222000033,00000000000000000033333333,00110011000000000033333333,11100111100111111133333333,11100111100100000033333333,00000000001100000033333333,00000000001100111133333333,110000200000001111333333,110000200000000000333333,111100200000000000333333,111100200001111000333333,22111100000156100011,22111100000178100011'

/\*NO.4\*/,'003333000000000000000033,003333000000000000000033,33330000001100000000000033,33330000111111111100000033,33000001111111111111000022,3300000111111111111111,22000011111111111111111,00000011111111111111111,00000111000000111111001,00000100000000001111001,0000010020002000111,0000010020002000111,44001100000000001110004444,44001100111100001110004444,00001111111111111111,00001111111111111111,000111111111111111111,001111111111111111111,001111111111111111111,00000001111111111,00111100111111110011110033,00111111001111001111110033,33000000000000001111003333,33000000000111100000003333,22330000000156100000333322,22330000000178100000333322'

/\*NO.5\*/,'000000001111,000000001111,0000000011000000222222,2200110011000000000022,22001100000011,22001100000011,11001111110011110044440044,11001111110011110044440044,11000000110000000044,00000000000000000044,00000000444400444444,00001100444400444444,11110000441100111000001111,11110000441100111000001111,0000000044000000000022,0000000044000000000022,444444004400220011002,444444004400220011002,00000000000000000000201111,00000011110000000000201111,000000001111111111,00000000110000001111,1111110000000000001111,1111000000011110000011,110000000001561,000000000001781'

];

var battleField=[];/\* 战场网格 \*/

var mainKey=false;/\* 独占的主键 \*/

var subKey=false;/\* 独占的子键 \*/

var autoMove=function(){};

/\*

crate gameMap

\*/

var reload=function(w,h,shell){

var stage=Math.max(1,this.stage)||1;

if(stage>tankMap.length)stage=1;/\* 关卡设置与检测 \*/

$.getElementById("stageIndex").innerHTML=Game.stage;

var map=tankMap[stage-1].split(',');

shell.innerHTML='';

var View=Jc('DIV','iMap',false,shell);

for (var i=0, html=[];i<h;i++ ){/\* 游戏场景视图生成 \*/

var line=Jc('DIV',0,0,View);

battleField[i]=[];/\* save cells info \*/

for (var j=0,tmp=[];j<w;j++ ){

var v=map[i]&&map[i].charAt(j)||0;/\* 逐字符读取贴图数据 \*/

var css=['empty','wall','steel','tod','sea','podium1','podium2','podium3','podium4'][v];

var cell=Jc('SPAN',0,css,line);

battleField[i][j]={'cell':cell,type:v,tank:false,ball:false};/\* 使用type记录撞击特性,tank记录是否有停放坦克 \*/

}

};

var tanksHTML=[];

for (var i=0;i<Game.enemy;i++ ) {

tanksHTML.push('<span></span>');

};

$.getElementById("tanks").innerHTML=tanksHTML.join('');

function Jc(type,id,className,parentNode){/\* 生成UI的快捷函数 \*/

var J=document.createElement(type);

if(id)J.id=id;

if(className)J.className=className;

return parentNode.appendChild(J);

};

if(window.ActiveXObject)/\* IE6 下禁止重载背景 \*/

$.execCommand("BackgroundImageCache", false, true);

};

reload.call(this,26,26,$.getElementById('win'));

/\*

Mover Class

\*/

Mover=function(){}

Mover.prototype={

move:function(dir){

if(this.lock||!this.use){return;};/\* 停用或者尚在步进中,操作无效 \*/

if(this.army=='enemy'&&Math.random()\*100>96)/\* 敌机有4%的机率会中途变换方向 \*/

return this.dir=Math.max(0,Math.min(3,parseInt(Math.random()\*5)-1));

if(isNaN(dir))dir=this.dir;

var J=/[02]/.test(dir)?'top':'left',view=this.UI.style,This=this,i=0,INI=this.type=='ball'?[5,2]:[4,3];/\* speed ini \*/

view.backgroundPosition='0 -'+dir\*40+'px';/\* change direction 移动对象转向 \*/

this.dir=dir;

if(this.hit())return this.onhit();/\* hit test----------------- \*/

/\* ----------------\*/

this.lock=true;/\* 加锁 \*/

var subMove=setInterval(function (){/\* 阶段移动 20px \*/

view[J]=parseInt(view[J])+INI[0]\*(/[21]/.test(dir)?1:-1)+'px';/\* 移动 \*/

if(i++>INI[1]){

clearInterval(subMove);

This.lock=false;/\* 解锁,允许再次步进 \*/

This.freeGrid();/\* 放弃原先占位 \*/

This.x=Math.round(This.UI.offsetLeft/20);/\* 保存网格坐标 \*/

This.y=Math.round(This.UI.offsetTop/20);

This.useGrid();/\* 登记当前占位 \*/

if(This.type=='ball'&&This.use)This.move(dir);/\* 使用中的炮弹自动连续步进 \*/

}

},This.speed);

}

,hit:function(){

if(this.dir==0&&this.y==0||

this.dir==1&&this.x==24||

this.dir==2&&this.y==24||

this.dir==3&&this.x==0

)return true;/\* 场景越界 \*/

var x=this.x,y=this.y,a,b;

switch(this.dir){/\* test cells \*/

case 0:/\* up 探测 \*/

a=battleField[y-1][x];

b=battleField[y-1][x+1];

break;

case 1:/\* right 探测 \*/

a=battleField[y][x+2];

b=battleField[y+1][x+2];

break;

case 2:/\* down 探测 \*/

a=battleField[y+2][x];

b=battleField[y+2][x+1];

break;

case 3:/\* left 探测 \*/

a=battleField[y][x-1];

b=battleField[y+1][x-1];

break;

};

if(a.tank||b.tank){/\* 先测试是否停有其它坦克 \*/

if(this.type=='ball'){/\* 击中坦克 \*/

if((a.tank&&a.tank.army!=this.owner.army)){ this.update(a);return true};/\* 子弹受阻即爆 \*/

if((b.tank&&b.tank.army!=this.owner.army)){this.update(b);;return true};/\* 子弹受阻即爆 \*/

}else{

return true;/\* 坦克相撞 \*/

}

};

if(a.ball&&b.ball){/\* 先测试是否掠过其它炮弹(用&&表示全对齐,不包含部分交叉) \*/

if(this.type=='ball'){/\* 炮弹对撞 \*/

if(a.ball.owner.army!=this.owner.army){a.ball.onhit();return true};/\* 两颗子弹同时爆炸 \*/

if(b.ball.owner.army!=this.owner.army){b.ball.onhit();return true};/\* 两颗子弹同时爆炸 \*/

}

};

if(a.type==0&&b.type==0)return;/\* 空地不撞击 \*/

if(/[1245678]/.test(a.type)||/[1245678]/.test(b.type)){/\* 前方非空非迷彩 \*/

if(this.type=='ball'){/\* 撞击者为子弹, 砖块标记为空 \*/

this.free(a);

this.free(b);

};

if(this.type=='ball'&&(a.type==4||b.type==4))return false;/\* 击中大海无效 \*/

return true;/\* 确定有阻挡 \*/

};

}

,onhit:function(){}

,free:function(net){/\* 使用偏移方式来防止渲染效率恶化 \*/

if(/[5678]/.test(net.type))Game.end=true;/\* 击中指挥部结束 \*/

if(net.type!=1)return;/\* 不是砖块不变化 \*/

net.cell.style.backgroundPosition='-10000px 0';

net.type=0;

}

,useGrid:function(isUse){/\* 占据网格 \*/

var X=this.type;/\* 坦克与炮弹即时停放记录 \*/

if(!this.use)return;

if(isUse===undefined)isUse=this;/\* 无参数时记录自已 \*/

var x=this.x,y=this.y;

battleField[y][x][X]=isUse;

battleField[y+1][x+1][X]=isUse;

battleField[y][x+1][X]=isUse;

battleField[y+1][x][X]=isUse;

}

,freeGrid:function (){/\* 释放网格 \*/

this.useGrid(false);

}

,update:function (a){

if(this.owner.name=='mainTank'){

var J=$.getElementById("goal1");

Game.val1+=200;

J.innerHTML=Game.val1;

};

if(this.owner.name=='subTank'){

var J=$.getElementById("goal2");

Game.val2+=200;

J.innerHTML=Game.val2;

};

if(a.tank.name=='mainTank'){

var J=$.getElementById("myCount1");

Game.play1-=1;

J.innerHTML=Game.play1;

};

if(a.tank.name=='subTank'){

var J=$.getElementById("myCount2");

Game.play2-=1;

J.innerHTML=Game.play2;

};

if(Game.play1==0&&Game.play2==0)Game.end=true;

a.tank.reLoad();

}

}

/\*

Tank Class

\*/

var Tank=function (x,y,speed,ballSpeed,dir,army){

var UI=document.createElement('DIV');

UI.className="tank";

this.type='tank';

this.firstPos={'x':x,'y':y,'dir':dir||0};/\* 坦克出口位置, 击中后重载坦克用 \*/

this.x=x;

this.y=y;

this.army=army||'our';

if(army=='enemy'){

UI.className="etank";

this.onhit=function (){/\* 敌机受阻后暂停0.5秒随机转向 \*/

var This=this;

setTimeout(function (){

This.dir=Math.max(0,Math.min(3,parseInt(Math.random()\*5)-1));

},500);

};

Tank.autoClip.push(this);/\* 加入群机驱动 \*/

};

var J=battleField[y][x].cell;/\* 占用地图标识 \*/

UI.style.top=J.offsetTop+'px';

UI.style.left=J.offsetLeft+'px';

this.speed=speed||20;/\* 坦克移动速度 \*/

this.ballSpeed=ballSpeed||10;/\* 子弹速度 \*/

this.UI=$.getElementById('gameMap').appendChild(UI);

this.dir=dir||0;/\* 坦克移动方向 \*/

UI.style.backgroundPosition='0 -'+this.dir\*40+'px';/\* 对象初始朝向 \*/

this.max=Game.sendMax||1;/\* 单次可发射子弹限量 \*/

this.sendCount=0;/\* 单次已发射子弹计数 \*/

this.lock=false;

this.use=true;/\* 声明投放使用 \*/

this.useGrid();/\* 声明占位 \*/

};

Tank.autoClip=[];/\* 敌机列表 \*/

Tank.auto=function(){/\* 敌机的自动运行 \*/

for (var i=0;i<this.autoClip.length;i++ ) {

var J=this.autoClip[i];

if(J.use){/\* 如果坦克使用中 \*/

J.move();/\* 移动 \*/

if(Math.random()\*100<10)

ballClip.shot(J);/\* 0.5%的机率射击 \*/

}

}

}

Tank.prototype=new Mover;/\* 继承自Mover类, 以拥有移动与撞击自检功能 \*/

Tank.prototype.reLoad=function(){/\* 击中后重新加载 \*/

this.freeGrid();/\* 清扫战场 \*/

this.UI.style.left='-1000px';

this.use=false;/\* 标记闲置 \*/

var This=this;

if(this.army=='enemy'){

Game.kill++;

$.getElementById("tanks").removeChild($.getElementById("tanks").firstChild);

if(Game.enemy==Game.kill)return Game.win=true ;

if(Game.kill>Game.enemy-3)return;/\* 已经用尽存储的生命,无法再复活 \*/

}

if(this.name=='subTank'&&Game.play2==0)return;

if(this.name=='mainTank'&&Game.play1==0)return;

/\* 1秒后复活击中过的坦克 \*/

setTimeout(function (){This.relive()},1000);

};

Tank.prototype.relive=function (){

this.x=this.firstPos.x;/\* 复位网格坐标 \*/

this.y=this.firstPos.y;

this.dir=this.firstPos.dir;

this.useGrid();/\* 网格占用声明 \*/

this.UI.style.left=this.firstPos.x\*20+'px';/\* 复位物理坐标 \*/

this.UI.style.top=this.firstPos.y\*20+'px';

this.UI.style.backgroundPosition='0 -'+this.dir\*40+'px';/\* 对象初始朝向 \*/

this.use=true;/\* 标记为可用 \*/

}

/\*

爆炸特效类

\*/

Fx=function(file,step){

var UI=document.createElement('DIV');

UI.style.cssText='position:absolute;width:60px;height:60px;overflow:hidden;background:url('+file+') no-repeat 0 0;z-index:1009;';

this.UI=UI;

this.speed=50;

this.step=step||1;

this.moveTo=function(x,y){

this.UI.style.top=y+'px';

this.UI.style.left=x+'px';

return this;

}

var This=this;

this.play=function (){

var i=0;

var FxTimer=setInterval(function (){

This.UI.style.backgroundPosition='0 -'+i++\*60+'px';

if(i==This.step){

clearInterval(FxTimer);

This.moveTo(-1000,0);

}

},This.speed)

}

this.moveTo(-1000,0);

$.getElementById('gameMap').appendChild(UI);

};

var iFx=new Fx('imgk.gif',8);

/\*

Ball Class 炮弹类

\*/

var Ball=function(owner/\* Tank class \*/){

var UI=document.createElement('DIV');

UI.className="ball";

UI.style.top='0';

UI.style.left='-1000px';/\* hidden to srceen left \*/

this.UI=$.getElementById('gameMap').appendChild(UI);

this.type='ball';

this.use=false;/\* 是否使用中, 不在弹夹内 \*/

this.lock=false;

}

Ball.prototype=new Mover;/\* 继承自Mover类, 以拥有移动与撞击自检功能 \*/

/\*

Magazine clip 弹夹类

\*/

MagazineClip=function(count){

this.clip=[];

var This=this;

for (var i=0;i<count;i++ ) {/\* 生成count个炮弹 \*/

var ball=new Ball;

ball.onhit=function (){/\* 实现撞击事件接口 \*/

var x=y=0;

switch (this.dir){/\* 效果位置调整 \*/

case 0:x=-.5;y=-2;break;

case 1:x=1;y=-0.5;break;

case 2:x=-.5;y=1;break;

case 3:x=-2;y=-.5;

}

iFx.moveTo((this.x+x)\*20,(this.y+y)\*20).play();/\* 爆炸效果回放 \*/

this.freeGrid();

this.UI.style.left='-1000px';/\* 炮弹回收, 存放到屏幕外 \*/

this.use=false;/\* 状态切换到非使用中 \*/

this.owner.sendCount--;/\* 刷新已发射量 \*/

This.clip.push(this);/\* 再次装入夹中循环利用 \*/

}

this.clip.push(ball);

}

this.shot=function(owner){/\* 将炮弹装入坦克 \*/

if(!owner.use)return;

if(owner.sendCount==owner.max)return;/\* 如果发射量满,放弃操作 \*/

var ball=this.clip.pop();/\* 从弹夹中弹出一个炮弹 \*/

if(ball==undefined)return;/\* 用光了则填弹失败 \*/

owner.sendCount++;/\* 计数 \*/

ball.owner=owner;

ball.x=owner.x;/\* 虚拟网格位置 \*/

ball.y=owner.y;

ball.dir=owner.dir;

ball.UI.style.backgroundPosition='0 -'+ball.dir\*40+'px';/\* 炮弹方向视图 \*/

var J=battleField[ball.y][ball.x].cell,Jx=ball.UI.style;

Jx.top=J.offsetTop+'px';/\* 物理位置 \*/

Jx.left=J.offsetLeft+'px';

ball.speed=owner.ballSpeed||2;/\* 炮弹定速 \*/

ball.use=true;

ball.move(owner.dir);/\* 炮弹开始发射 \*/

}

}

/\*

创建角色 Tank(x,y,坦克速率,子弹速度(默认2),初始朝向(0-3),敌友识别番号(默认our))

\*/

var ballClip=new MagazineClip(20);/\* 弹夹(所有坦克共用) \*/

var mainTank=new Tank(9,24,30);/\* 主坦克 \*/

mainTank.name='mainTank';

var subTank=new Tank(15,24,30);/\* 子坦克 \*/

subTank.name='subTank';

/\* 敌方坦克 \*/

var enemy1=new Tank(0,0,30,10,2,'enemy');

var enemy2=new Tank(12,0,30,10,2,'enemy');

var enemy3=new Tank(24,0,30,10,2,'enemy');

/\*

按键按下

\*/

window.onkeydown=

$.body.onkeydown=function (e){

var J=(window.event||e).keyCode;

if(/^(37|38|39|40)$/.test(J))mainKey=J;/\* 记录主坦克移动键 \*/

if(/^(73|74|75|76)$/.test(J))subKey=J;/\* 记录子坦克移动键 JILK\*/

if(J==32)ballClip.shot(mainTank);/\* 主坦克发射 空格\*/

if(J==70)ballClip.shot(subTank);/\* 主坦克发射 F键\*/

};

/\*

按键弹起

\*/

window.onkeyup=

$.body.onkeyup=function (e){

var J=(window.event||e).keyCode;

if(J==mainKey)mainKey=false;/\* 主坦克当前移动键终止 \*/

if(J==subKey)subKey=false;/\* 子坦克当前移动键终止 \*/

};

/\*

长定时器监听控制键

\*/

var keyLister=setInterval(function(){

if(Game.end){

clearInterval(keyLister);/\* 游戏结束 \*/

document.body.innerHTML='<strong id="popTxt">GAME OVER</strong>';

};

if(Game.win){

Game.stage++;/\* 下一关 \*/

Game.end=false;

Game.win=false;

Game.enemy=Game.full;

Game.kill=0;

reload.call(Game,26,26,$.getElementById('win'));

for (var i=0;i<Tank.autoClip.length;i++ ) {

Tank.autoClip[i].relive();

};

if(Game.play1>0){

$.getElementById("myCount1").innerHTML=++Game.play1;

mainTank.relive();

}

if(Game.play2>0){

$.getElementById("myCount2").innerHTML=++Game.play2;

subTank.relive();

};

};

if(/^(37|38|39|40)$/.test(mainKey))mainTank.move([3,0,1,2][mainKey-37]);/\* 所有主移动键 \*/

if(/^(73|74|75|76)$/.test(subKey)){/\* 所有子移动键 \*/

subTank&&subTank.move({'73':0,'76':1,'75':2,'74':3}[subKey]);

}

Tank.auto();

},19);

};

Game.begin(document)/\* -------------------------Tank1998 End------------------------------------------ \*/

</script>

</html>