

## 7月10日の授業中に作成したサンプルプログラム

情報メディア学科佐藤尚

```
//その1
float xPos;
float yPos;

void setup() {
  size(400, 400);
  xPos = width/2;
  yPos = height/2;
}

void draw() {
  background(255);
  fill(255, 10, 10);
  stroke(0);
  line(xPos, yPos, mouseX, mouseY);
  float t = 0.9;
  xPos = (1-t)*mouseX + t * xPos;
  yPos = (1-t)*mouseY + t * yPos;
  ellipse(xPos, yPos, 20, 20);
}

//その2
float xPos;
float yPos;

void setup(){
  size(400,400);
  xPos = 0;
  yPos = 0;
}

void draw(){
  background(255);
  stroke(0);
  line(0,0,width,height);
  float t = (frameCount % 120)/120.0;
  float x = (1-t)*0 + t * width;
  float y = (1-t)*0 + t * height;
  fill(255,10,10);
  ellipse(x,y,20,20);
}

//その3
```

```
float xPos;
float yPos;

void setup(){
  size(400,400);
  xPos = 0;
  yPos = 0;
}

void draw(){
  background(255);
  stroke(0);
  line(0,0,width,height);
  float t = 0.5*(1+cos(radians(2*frameCount)));
  float x = (1-t)*0 + t * width;
  float y = (1-t)*0 + t * height;
  fill(255,10,10);
  ellipse(x,y,20,20);
}
```

//その4

```
float xPos;
float yPos;
```

```
void setup(){
  size(200,400);
  xPos = width/2;
  yPos = 0;
}
```

```
void draw(){
  background(255);
  yPos += 1;
  xPos = 0.4*width*sin(radians(3*frameCount))+width/2;
  ellipse(xPos,yPos,20,20);
}
```

//その5

```
void setup(){
  size(400,400);
}
```

```
void draw(){
  background(255);
  stroke(0);
  noFill();
}
```

```
    ellipse(width/2,height/2,0.8*width,0.8*height);
    fill(255,10,10);
    float theta = radians(frameCount);
    float xPos = 0.4*width*cos(theta) + width/2;
    float yPos = 0.4*height*sin(theta) + height/2;
    ellipse(xPos,yPos,20,20);
}
```

```
//その6
void setup(){
    size(400,400);
}
```

```
void draw(){
    background(255);
    stroke(0);
    line(0,height/2,width,height/2);
    line(width/2,0,width/2,height);
    noFill();
    ellipse(width/2,height/2,0.8*width,0.8*height);
    fill(255,10,10);
    float theta = radians(frameCount);
    float xPos = 0.4*width*cos(theta) + width/2;
    float yPos = 0.4*height*sin(theta) + height/2;
    line(width/2,height/2,xPos,yPos);
    ellipse(xPos,yPos,20,20);
}
```

```
//その7
float xPos;
float yPos;
float speed;
```

```
void setup(){
    size(400,400);
    xPos = 2*width/3;
    yPos = height/2;
    speed = 2;
}
```

```
void draw(){
    background(255);
    float angle = atan2(yPos-height/2,xPos-width/2);
    float vx = -speed*sin(angle);
    float vy = speed*cos(angle);
```

```
xPos += vx;
yPos += vy;
fill(255,10,10);
ellipse(xPos,yPos,20,20);
}
```

```
//その8
float xPos;
float yPos;
float vx;
float vy;
```

```
void setup(){
  size(400,400);
  xPos = width/2;
  yPos = height/2;
  vx = vy = 0;
}
```

```
void draw(){
  background(255);
  xPos += vx;
  yPos += vy;
  fill(255,10,10);
  ellipse(xPos,yPos,20,20);
}
```

```
void mouseClicked(){
  float angle = atan2(mouseY-yPos,mouseX-xPos);
  float speed = 2;
  vx = 2 * cos(angle);
  vy = 2 * sin(angle);
}
```

```
//その9
float[] xPos;
float[] yPos;
float[] vx;
float[] vy;
```

```
final int maxOfBullets = 100000;
int numberOfBullets = 0;
```

```
boolean isFiring = false;
```

```
void setup() {
```

```

size(600, 600);
xPos = new float[maxOfBullets];
yPos = new float[maxOfBullets];
vx = new float[maxOfBullets];
vy = new float[maxOfBullets];
numberOfBullets = 0;
}

void draw() {
  background(255);
  fill(10, 10, 255);
  if (frameCount % 10 == 0) {
    xPos[numberOfBullets] = mouseX;
    yPos[numberOfBullets] = mouseY;
    float angle = radians(30*(numberOfBullets%12));
    vx[numberOfBullets] = 2*cos(angle);
    vy[numberOfBullets] = 2*sin(angle);
    numberOfBullets++;
  }
  for (int i=0; i<numberOfBullets; i++) {
    ellipse(xPos[i], yPos[i], 20, 20);
    xPos[i] += vx[i];
    yPos[i] += vy[i];
  }
}

```

```

//その 10
float[] xPos;
float[] yPos;
float[] vx;
float[] vy;

```

```

final int maxOfBullets = 100000;
int numberOfBullets = 0;
boolean isFiring = false;

```

```

void setup() {
  size(600, 600);
  xPos = new float[maxOfBullets];
  yPos = new float[maxOfBullets];
  vx = new float[maxOfBullets];
  vy = new float[maxOfBullets];
  numberOfBullets = 0;
}

```

```

void draw() {

```

```

background(255);
fill(10, 10, 255);
if (frameCount % 30 == 0) {
  for(int i=0;i<12;i++){
    xPos[numberOfBullets] = mouseX;
    yPos[numberOfBullets] = mouseY;
    float angle = radians(30*i);
    vx[numberOfBullets] = 2*cos(angle);
    vy[numberOfBullets] = 2*sin(angle);
    numberOfBullets++;
  }
}
for (int i=0; i<numberOfBullets; i++) {
  ellipse(xPos[i], yPos[i], 20, 20);
  xPos[i] += vx[i];
  yPos[i] += vy[i];
}
}

```

```

//その 11
float xPos;
float yPos;
float vx;
float vy;
float ax;
float ay;

```

```

void setup(){
  size(200,600);
  xPos = width/2;
  yPos = 0;
  ax = 0;
  ay = 0.1;
  vx = 0;
  vy = 0;
}

```

```

void draw(){
  background(255);
  vx += ax;
  vy += ay;
  xPos += vx;
  yPos += vy;
  fill(255,10,10);
  ellipse(xPos,yPos,10,10);
}

```