Java Transformations

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Table of contents

1. Transformation fractals - 2D:

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var prog1 = "clear();\n\ ff(r,a,off,x,y)=r*cos(a)*x - r*sin(a)*y + off;\n\
gg(r,a,off,x,y)=r*sin(a)*x + r*cos(a)*y + off;\n\ \n\ r1=.75;\n\ a1=.735;\n\ xOff1=0;\n\
yOff1=0.35;\n\ \n\ f1(x,y)=ff(r1,a1,0,x,y);\n\ g1(x,y)=gg(r1,a1,0,x,y);\n\ \n\ r2=.5;\n\
a2=-.95;\n\ xOff2=0.2;\n\ yOff2=0.5;\n\ \n\ f2(x,y)=ff(r2,a2,0,x,y);\n\
g2(x,y)=gg(r2,a2,0,x,y);\n\ controlVar(r1, a1,xOff1, yOff1,r2,a2,xOff2,yOff2);\n\
iterFract( \n\ f1,xOff1,\n\ g1,yOff1,\n\ f2,xOff2,\n\ g2,yOff2,\n\ \"pentagon.2d\" );\n";
var prog2 = "clear();\n\ \n\ ff(r,a,off,x,y)=r*cos(a)*x - r*sin(a)*y + off;\n\
gg(r,a,off,x,y)=r*sin(a)*x + r*cos(a)*y + off;\n\ \n\ r1=.75;\n\ a1=1.234;\n\ xOff1=0;\n\
yOff1=0.35;\n\ \n\ f1(x,y)=ff(r1,a1,0,x,y);\n\ g1(x,y)=gg(r1,a1,0,x,y);\n\ \n\ r2=.6;\n\
a2=0;\n\ xOff2=0.2;\n\ yOff2=0.5;\n\ \n\ f2(x,y)=ff(r2,a2,0,x,y);\n\
g2(x,y)=gg(r2,a2,0,x,y);\n\ controlVar(r1, a1,xOff1, yOff1,r2,a2,xOff2,yOff2);\n\
iterFract( \n\ \"zIterFractPlugInDemo1\",\n\ f1,xOff1,\n\ g1,yOff1,\n\ f2,xOff2,\n\
g2,yOff2,\n\ \"pentagon.2d\"\n\ );\n"; prog3 = "clear();\n\ ff(r,a,off,x,y)=r*cos(a)*x -
r*sin(a)*y + off; //the generic transformation\n\ gg(r,a,off,x,y)=r*sin(a)*x + r*cos(a)*y +
off;\n\ \n\ r1=.5; //the parameters I want to control for the first transform\n\ a1=0;\n\
xOff1=0;\n\ yOff1=0;\n\ \n\ f1(x,y)=ff(r1,a1,0,x,y); //the first transform\n\
g1(x,y)=gg(r1,a1,0,x,y);\n\ \n\ r2=.5; //the parameters I want to control for the first
transform\n\ a2=0;\n\ xOff2=0.2;\n\ yOff2=-0.35;\n\ \n\ f2(x,y)=ff(r2,a2,0,x,y); //the
second transform\n\ g2(x,y)=gg(r2,a2,0,x,y);\n\ \n\ r3=.5; //the parameters I want to
control for the first transform\n\ a3=0;\n\ xOff3=-0.2;\n\ yOff3=-0.35;\n\
controlVar(r1,a1,xOff1,yOff1,r2,a2,xOff2,yOff2,r3,a3,xOff3,yOff3); //variable
controller\n\ \n\ f3(x,y)=ff(r3,a3,0,x,y); //the second transform\n\
g3(x,y)=gg(r3,a3,0,x,y);\n\ \n\ iterFract( \n\ \"zIterFractPlugInDemo2\",\n\ f1,xOff1,
//first\n\ g1,yOff1,\n\ f2,xOff2, //second\n\ g2,yOff2,\n\ f3,xOff3, //third\n\ g3,yOff3,\n\
\"triangle.2d\" \n\ );\n"; prog4 = "clear();\n\ ff(r,a,off,x,y)=r*cos(a)*x - r*sin(a)*y + off;
//the generic transformation\n\ gg(r,a,off,x,y)=r*sin(a)*x + r*cos(a)*y + off;\n\ \n\
r1=.3; //the parameters I want to control for the first transform\n\ a1=0;\n\ xOff1=0;\n\
yOff1=0;\n\ \n\ f1(x,y)=ff(r1,a1,0,x,y); //the first transform\n\
g1(x,y)=gg(r1,a1,0,x,y);\n\ \n\ r2=.3; //the parameters I want to control for the first
transform\n\ a2=0;\n\ xOff2=0.25;\n\ yOff2=-.475;\n\ \n\ f2(x,y)=ff(r2,a2,0,x,y); //the
second transform\n\ g2(x,y)=gg(r2,a2,0,x,y);\n\ \n\ r3=.3; //the parameters I want to
control for the first transform\n\ a3=0;\n\ xOff3=0.25;\n\ yOff3=-0.25;\n\ \n\
f3(x,y)=ff(r3,a3,0,x,y); //the second transform\n\ g3(x,y)=gg(r3,a3,0,x,y);\n\ \n\ r4=.3;
//the parameters I want to control for the first transform\n\ a4=0;\n\ xOff4=-0.25;\n\
yOff4=-0.25;\n\ \n\ f4(x,y)=ff(r4,a4,0,x,y); //the second transform\n\
g4(x,y)=gg(r4,a4,0,x,y);\n\ \n\ r5=.3; //the parameters I want to control for the first
transform\n\ a5=0;\n\ xOff5=0.25;\n\ yOff5=0;\n\ \n\ f5(x,y)=ff(r5,a5,0,x,y); //the first
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transform\n\ g5(x,y)=gg(r5,a5,0,x,y);\n\ \n\ r6=.3; //the parameters I want to control
for the first transform\n\ a6=0;\n\ xOff6=0;\n\ yOff6=-0.475;\n\ \n\
f6(x,y)=ff(r6,a6,0,x,y); //the second transform\n\ g6(x,y)=gg(r6,a6,0,x,y);\n\ \n\ r7=.3;
//the parameters I want to control for the first transform\n\ a7=0;\n\ xOff7=-0.25;\n\
yOff7=-0.475;\n\ \n\ f7(x,y)=ff(r7,a7,0,x,y); //the second transform\n\
g7(x,y)=gg(r7,a7,0,x,y);\n\ \n\ r8=.3; //the parameters I want to control for the first
transform\n\ a8=0;\n\ xOff8=-0.25;\n\ yOff8=0;\n\ \n\ f8(x,y)=ff(r8,a8,0,x,y); //the
second transform\n\ g8(x,y)=gg(r8,a8,0,x,y);\n\ \n\
controlVar(r1,a1,xOff1,yOff1,r2,a2,xOff2,yOff2,r3,a3,xOff3,yOff3,r4,a4,xOff4,yOff4);
//variable controller\n\ controlVar(r5,a5,r6,a6,r7,a7,r8,a8); //variable controller\n\ \n\
iterFract( \n\ \"zIterFractPlugInDemo4\",\n\ f1,xOff1, //first\n\ g1,yOff1,\n\ f2,xOff2,
//second\n\ g2,yOff2,\n\ f3,xOff3, //third\n\ g3,yOff3,\n\ f4,xOff4, //third\n\ g4,yOff4,\n\
f5,xOff5,\n\ g5,yOff5,\n\ f6,xOff6,\n\ g6,yOff6,\n\ f7,xOff7,\n\ g7,yOff7,\n\ f8,xOff8,\n\
g8,yOff8,\n\ \"triangle.2d\" \n\ );\n"; prog5 = "clear();\n\ ff(r,a,off,x,y)=r*cos(a)*x -
r*sin(a)*y + off; //the generic transformation\n\ gg(r,a,off,x,y)=r*sin(a)*x + r*cos(a)*y +
off;\n\ \n\ r1=.8; //the parameters I want to control for the first transform\n\ a1=0.1;\n\
xOff1=0;\n\ yOff1=0.95;\n\ \n\ f1(x,y)=ff(r1,a1,0,x,y); //the first transform\n\
g1(x,y)=gg(r1,a1,0,x,y);\n\ \n\ r2=.75; //the parameters I want to control for the first
transform\n\ a2=0.4;\n\ xOff2=0;\n\ yOff2=0.2;\n\ \n\ f2(x,y)=ff(r2,a2,0,x,y); //the
second transform\n\ g2(x,y)=gg(r2,a2,0,x,y);\n\ \n\ r3=.6; //the parameters I want to
control for the first transform\n\ a3=-.750;\n\ xOff3=0;\n\ yOff3=0.65;\n\
controlVar(r1,a1,xOff1,yOff1,r2,a2,xOff2,yOff2,r3,a3,xOff3,yOff3); //variable
controller\n\ \n\ f3(x,y)=ff(r3,a3,0,x,y); //the second transform\n\
g3(x,y)=gg(r3,a3,0,x,y);\n\ \n\ \n\ iterFract( \n\ \"zIterFractPlugInDemo3\",\n\ f1,xOff1,
//first\n\ g1,yOff1,\n\ f2,xOff2, //second\n\ g2,yOff2,\n\ f3,xOff3, //third\n\ g3,yOff3,\n\
\"line.2d\" \n\ );\n"; function execute(program) {
document.fraidApplet.execute(program); } function getProg1(){ return prog1; }
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