

```
import processing.core.*;

class Graph{
  float a;
  float xp,yp;
  float[] xf,yf;// previsione cordinate future

  float angle ;// Changing angle
  float speed;// Speed of growth
  float mystroke;
  float dir;
  float alf;
  float falf;
  float diameter;

  color C;

  float time;

  float factor;
  float ritmo1,ritmo2,ritmo3;

  int countGraph=0;

  float oldX, oldY, newX, newY;

  Graph(){

    angle = 0.0;// Changing angle
    speed = 0.02;// Speed of growth
    mystroke=1;
    dir=1;
    alf= 40;
    falf=30;

    xf=new float[3];
    yf=new float[3];

  }

  ////refresh the information about position and orientation of the graphic

  void updateGraph(float aoldX,float aoldY,float anewX,float anewY){
    oldX=aoldX;
    oldY=aoldY;
    newX=anewX;
    newY=anewY;

    //println(oldX + " " + oldY+ " " +newX + " " +newY);
    if (countGraph == 0){
      a =atan2(height/2-newY, width/2-newX); //calcola l'angolo di spostamento tra l'ultimo e il penultimo pallino apparsi
      countGraph++;
    }
    else{
      a =atan2(newY-oldY, newX-oldX);//calcola l'angolo di spostamento tra l'ultimo e il penultimo pallino apparsi
    }
    /// orientation the graphic in front of the user
    //// left choice coordinates
    xf[0]=cos(a-PI/3)*120+newX;
    yf[0]=sin(a-PI/3)*120+newY;
    //// middle choice coordinates
    xf[1]=cos(a)*120+newX;
    yf[1]=sin(a)*120+newY;
    //// right choice coordinates
    xf[2]=cos(a+PI/3)*120+newX;
    yf[2]=sin(a+PI/3)*120+newY;

  }

  //////////////////////////////////////
  ////
  //this void draw the base graphic
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void drawGraphB(float Factor){

    mystroke=abs(8*(Factor));
    strokeWeight (mystroke);
    float factor=Factor*60;
    float Bdiameter = Factor;
    float BdiameterB1 = factor ;
    float BdiameterB2 = 0.5*factor;
    float BdiameterB3 = 0.8*factor;

    /// tone chooses
    stroke(160*abs(Factor),70*abs(Factor),50*abs(Factor),alf);
    fill(150*abs(Factor),80*abs(Factor),25*abs(Factor),falf);
    ellipse(xf[0], yf[0], BdiameterB1, BdiameterB1);
    ellipse(xf[0], yf[0], BdiameterB2, BdiameterB2);
    ellipse(xf[0], yf[0], BdiameterB3, BdiameterB3);

    stroke(50*abs(Factor),80*abs(Factor),250*abs(Factor),alf);
    fill(10*abs(Factor),75*abs(Factor),100*abs(Factor),falf);
    ellipse(xf[1], yf[1], BdiameterB1, BdiameterB1);
    ellipse(xf[1], yf[1], BdiameterB2, BdiameterB2);
    ellipse(xf[1], yf[1], BdiameterB3, BdiameterB3);

    stroke(30*abs(Factor),140*abs(Factor),60*abs(Factor),alf);
    fill(10*abs(Factor),100*abs(Factor),50*abs(Factor),falf);
    ellipse(xf[2], yf[2], BdiameterB1, BdiameterB1);
    ellipse(xf[2], yf[2], BdiameterB2, BdiameterB2);
    ellipse(xf[2], yf[2], BdiameterB3, BdiameterB3);

    /// user position
    stroke(C,alf/2);
    fill(C,falf/2);
    ellipse(newX, newY, BdiameterB1, BdiameterB1);
    ellipse(newX, newY, BdiameterB2, BdiameterB2);
    ellipse(newX, newY, BdiameterB3, BdiameterB3);
}
//this void draw the rhythm graphic
void drawGraphS(float factor,float ritmo1,float ritmo2,float ritmo3){
    float Bdiameter = 60*factor;
    float BdiameterR1 = 10*ritmo1;
    float BdiameterR2 = 10*ritmo2;
    float BdiameterR3 = 10*ritmo3;

    mystroke=abs(5*(factor));
    strokeWeight (mystroke);

    /// rhythm chooses
    fill(15.5*abs(BdiameterR1),falf);
    stroke(15.5*abs(Bdiameter),alf);
    ellipse(xf[0], yf[0], Bdiameter,Bdiameter);
    ellipse(xf[0], yf[0], 2*BdiameterR1,2*BdiameterR1);
    ellipse(xf[0], yf[0], 3*BdiameterR1,3*BdiameterR1);

    fill(15.5*abs(BdiameterR2),falf);
    stroke(15.5*abs(Bdiameter),alf);
    ellipse(xf[1], yf[1], Bdiameter,Bdiameter);
    ellipse(xf[1], yf[1], 2*BdiameterR2,2*BdiameterR2);
    ellipse(xf[1], yf[1], 3*BdiameterR2,3*BdiameterR2);

    fill(15.5*abs(BdiameterR3),falf);
    stroke(15.5*abs(Bdiameter),alf);
    ellipse(xf[2], yf[2], Bdiameter,Bdiameter);
    ellipse(xf[2], yf[2], 2*BdiameterR3,2*BdiameterR3);
    ellipse(xf[2], yf[2], 3*BdiameterR3,3*BdiameterR3);

    /// user position
    stroke(100*abs(factor),alf);
    fill(100*abs(factor),falf);
    ellipse(newX, newY, Bdiameter, Bdiameter);
    ellipse(newX, newY, 0.5*Bdiameter, 0.5*Bdiameter);
    ellipse(newX, newY, 0.8*Bdiameter, 0.8*Bdiameter);
}
}
}

```

