Project Structure:

Every **pde** file is like a **class** file in JAVA.

UI:

Button.pde is the UI button class.
Rectangle.pde is also UI class that Re-implementing java.awt.Rectangle for Web mode.

GA:

For the program, the main entry function is in FullGA.pde

FullGA.pde:

Void setup()

This is the entry function for a program, you can setup project variables in here.

Void draw()

All the code in this function will be executed repeatedly, about every second 60 times, so I generate and store random number in advanced, or the program will repeatedly generate new image.

Void mousePress()

mousePress event. Here to find whether use press the generate next button.

Void mouseRelease()

mouseRelease event.

DNA.pde:

The main function of this class is to generate random DNA/Genotype.

We can add as many variables as we want, if our image need four random number then we can new four int arrays.

For the example, I have three sets of random number, since generate squares code have a loop for 274 times, which means have 274 squares in every image. so I can just new an array which size is large than 274. I make it 4096.

DNA():

Construction function. Generate random DNA.

DNA(float[] newgenes,int _rnd1[],int _rnd2[],int _rnd3[])

This Construction function is for get crossover child from parent which means the child have get dna from parent. So the input parameters have all the arrays.

crossover()
mutate()   I think you know these two function.

Phenotype.pde:

the main duty of phenotype is to represent the DNA by image.

```
DNA dna;                 // Get New Random DNA
float fitness;           // fitness value
float x, y;      // Position on screen since we have six images in screen.
int wh = 300;        // size of each image that  generate.
boolean rolloverOn;  // Are we rolling over this image?
```

Phenotype(DNA dna_, float x_, float y_):

Construction function, to initiate an image.
The three parameters (dna_, x_, y_) are from Population.

void display()

This function to draw image. new an image pattern instance and pass the dna to the pattern class.

ColorSquares.pde

This is the pattern class, we can replace this by another pattern.

Population.pde

population class.
This class is quite similar as your code.
And I wrote some comments in the file.

rollingover()

Whether the mouse is rolling over the image.

Text me if you have any question~