Lissajous GIF

Dates	@March 1, 2023
Category	PPT
Notes	100%
Status	Done
Task	Assignment

```
package main

import (
  "image"
  "image/color"
  "image/gif"
  "io"
  "math"
  "math/rand"
  "os"
)

const (
  whiteIndex = 0
  blackIndex = 1
)

func main() {
  f, err := os.Create("hehe.gif")
  if err != nil {
    panic(err)
  }
  defer f.Close()
  lissajous(f)
}

func lissajous(out io.Writer) {
  palette := []color.Color{color.Black}
  const (
    cycles  = 20
```

```
    res     = 0.0005
    size    = 250
    nframes = 100
    delay   = 5
  )

  for i := 0; i < nframes; i++ {
    palette = append(palette, color.RGBA{34, 238, 239, 1})
  }

  freq := rand.Float64() * 3.0
  anim := gif.GIF{LoopCount: nframes}
  phase := 0.0
  for i := 0; i < nframes; i++ {
    rect := image.Rect(0, 0, 2*size+1, 2*size+1)
    img := image.NewPaletted(rect, palette)
    for t := 0.0; t < cycles*2*math.Pi; t += res {
      x := math.Sin(t)
      y := math.Sin(t*freq + phase)
      xcount := size + int(x*size+0.5)
      ycount := size + int(y*size+0.5)
      img.SetColorIndex(xcount, ycount, blackIndex)
    }
    phase += 0.1
    anim.Delay = append(anim.Delay, delay)
    anim.Image = append(anim.Image, img)
  }
  gif.EncodeAll(out, &anim)
}
```