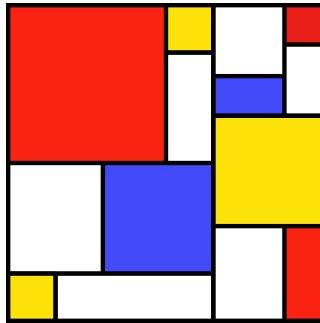


SLiM

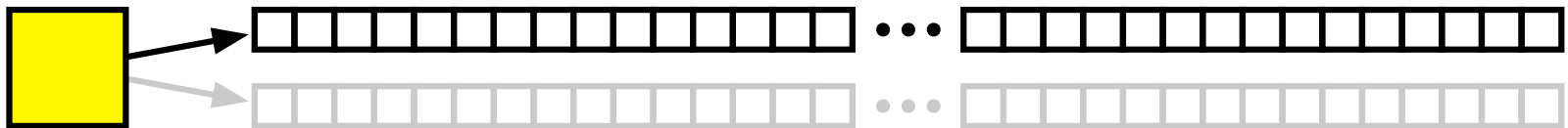
Workshop Series



#17: Modeling Haploidy

Haploid Models

- SLiM supports only diploid models
- Haploid models can be scripted easily
- Clonal reproduction
- Second genomes are kept empty:
 - new mutations in them are prevented
 - fixation occurs at frequency 0.5



Haploid WF Models

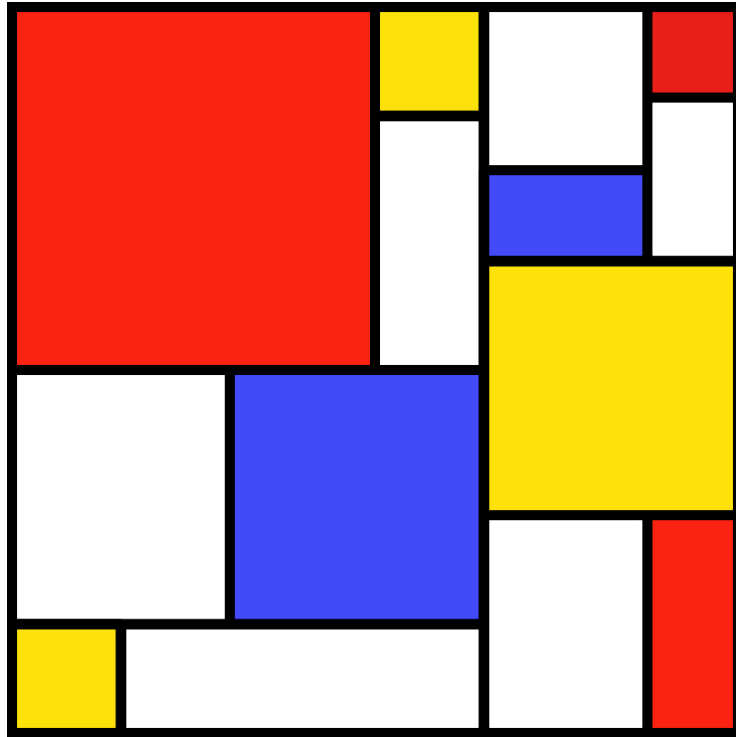
- Clonal reproduction:
 - `setCloningRate(1.0)`
- Prevent mutations in second genomes:
 - `individuals.genome2.removeMutations()`
- Fixation at frequency 0.5:
 - `freqs = sim.mutationFrequencies(NULL, muts)`
 - `genomes.removeMutations(muts[freq == 0.5], T)`

Haploid nonWF Models

- Clonal reproduction *and*
- Prevent mutations in second genomes:
 - `reproduction() {
 subpop.addRecombinant(genome1,
 NULL, NULL, NULL, NULL, NULL);
}`
- Fixation at frequency 0.5:
 - `freqs = sim.mutationFrequencies(NULL, muts)`
 - `genomes.removeMutations(muts[freq == 0.5], T)`

Ploidy Overview

- Haploid models (WF or nonWF):
 - clonal reproduction
 - prevent new mutations in genome2
 - fixation occurs at frequency 0.5
- Polyploid models:
 - difficult since SLiM only models diploidy
 - recombination and gamete generation
 - fitness calculations, fixation, ...



SLiM Workshop Exercise #17