

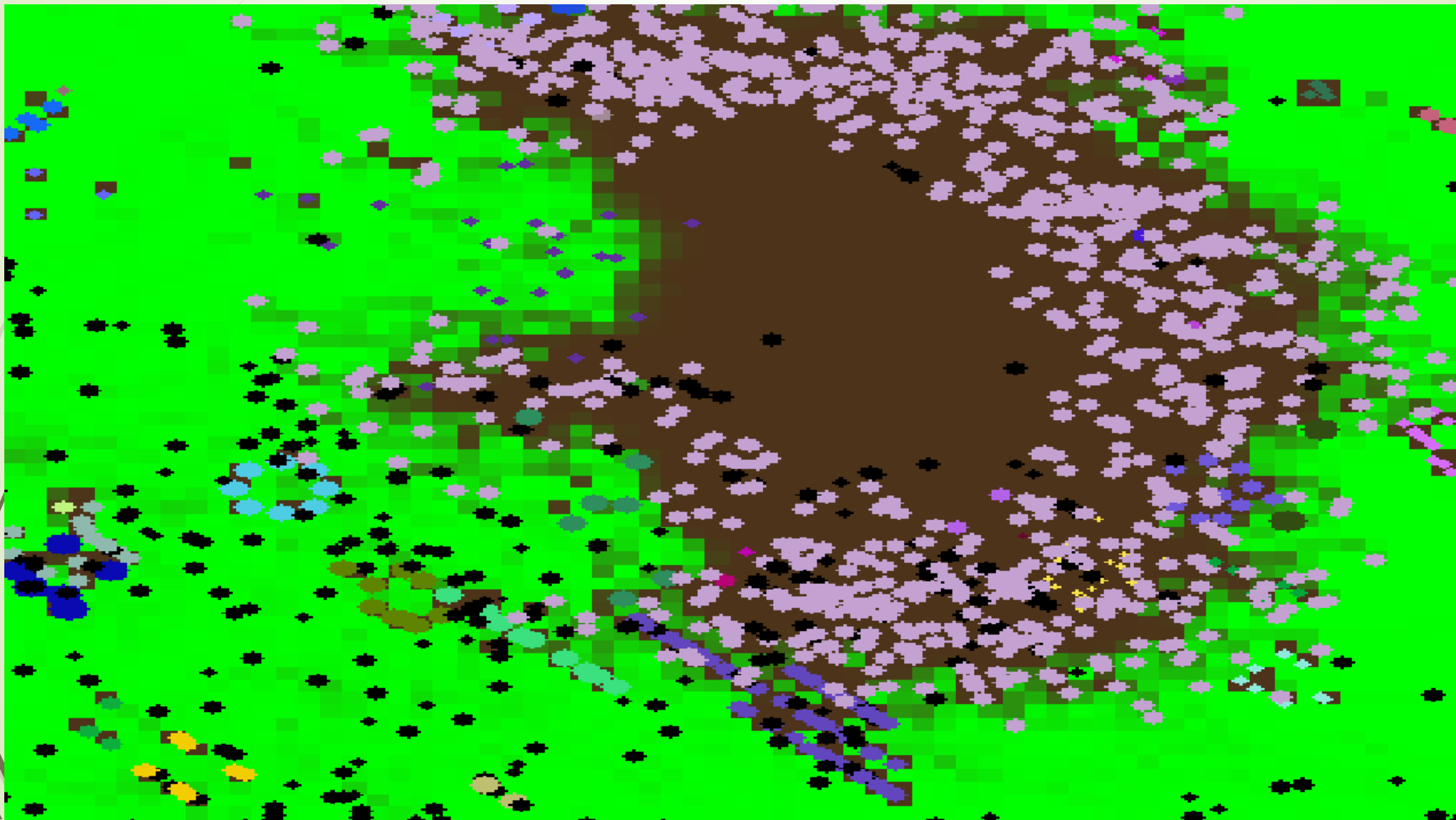


Simulacija ekosustava i evolucije

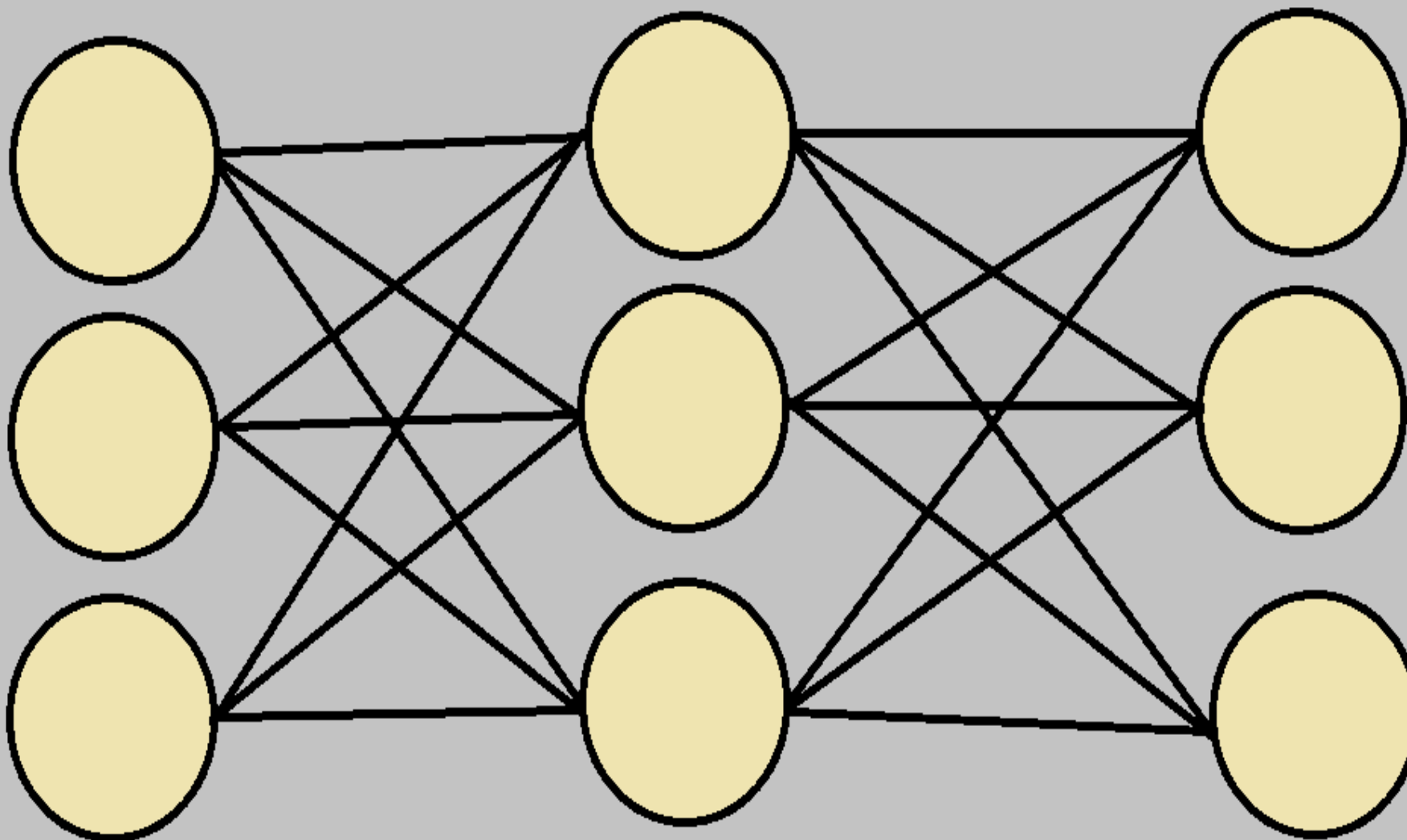
Josip Kelava

Voditelj: Marko Đurasević

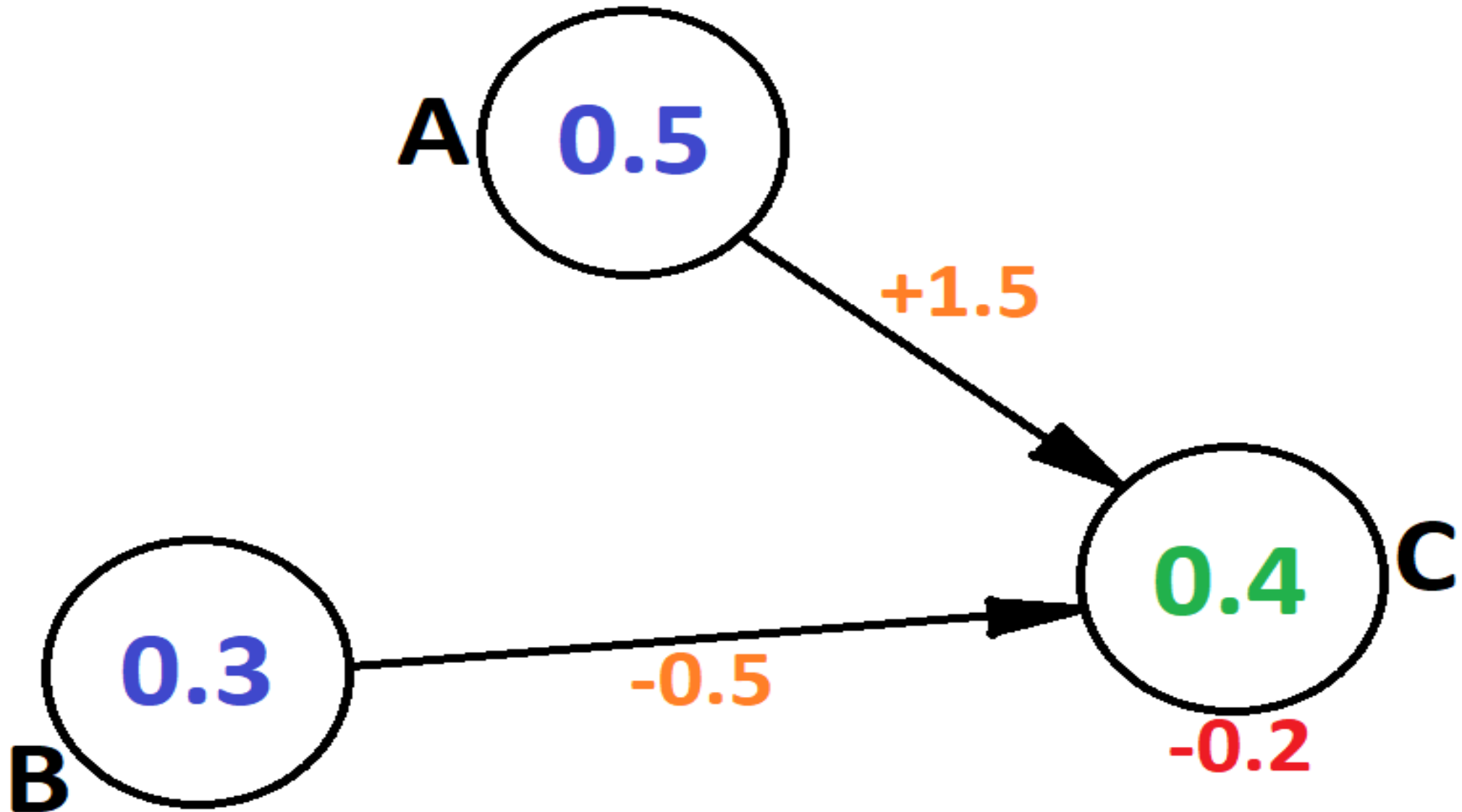
Ekosustav



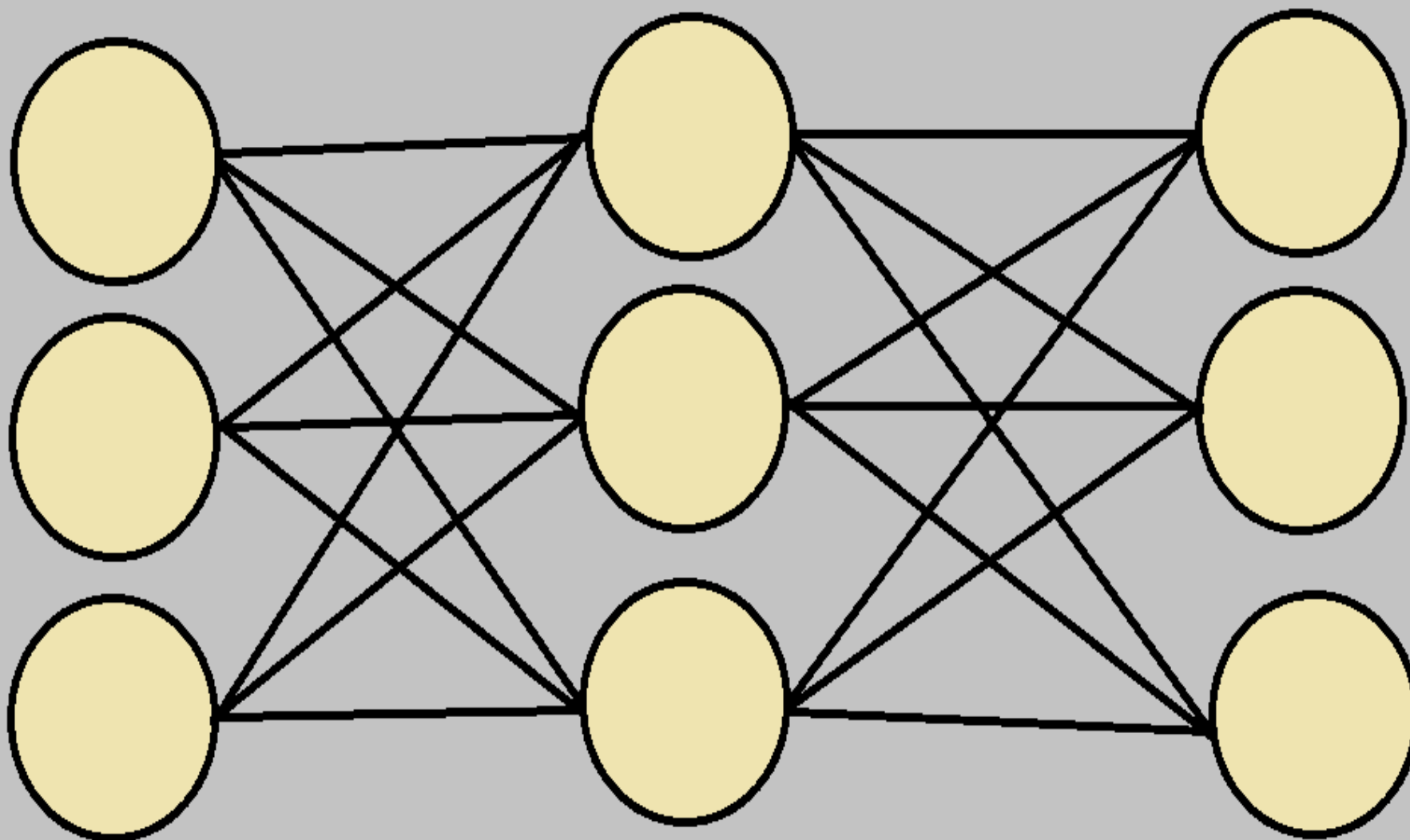
Neuronska mreža



Aktivacijska funkcija

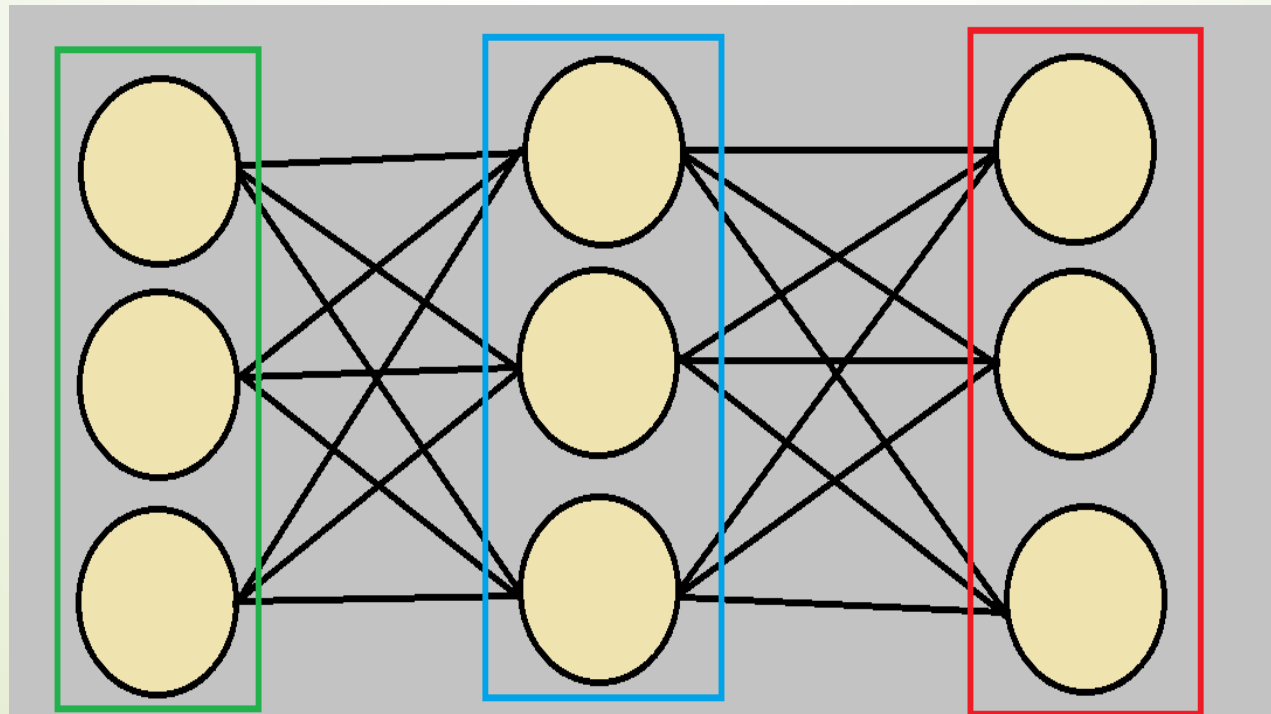


Tipična struktura neuronske mreže

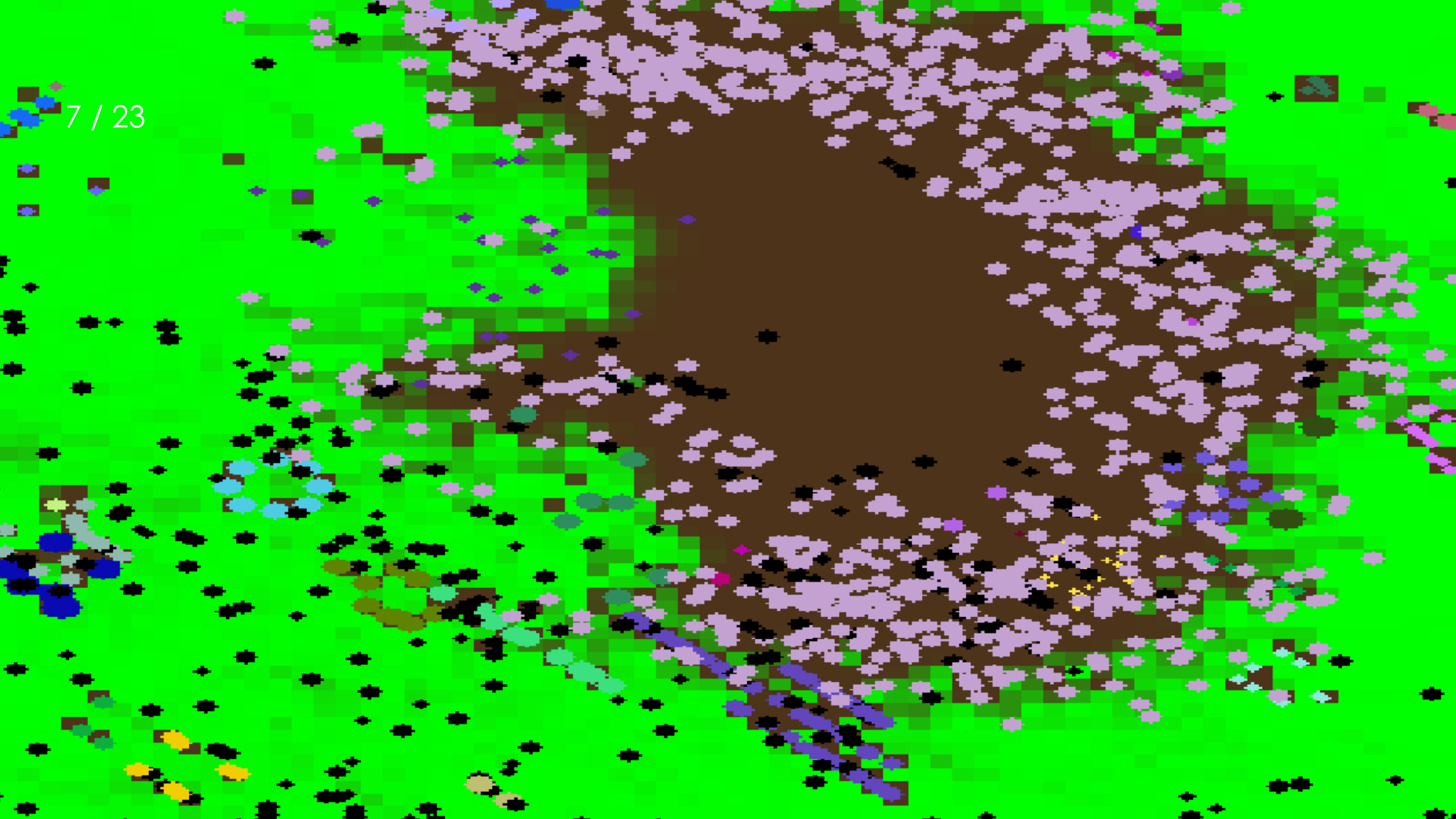


Uloge neurona

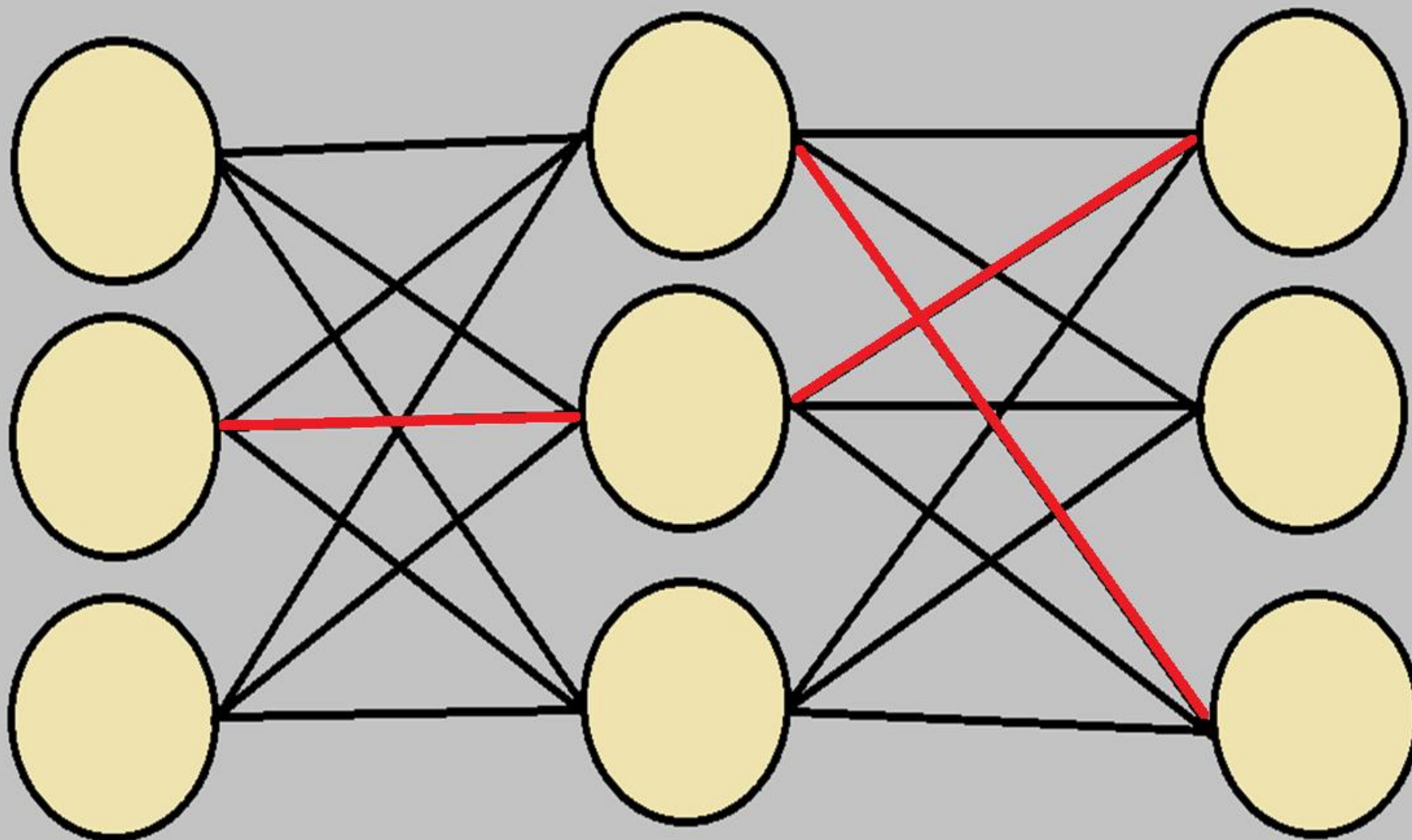
- ▶ Ulazni neuroni – energija, vid, sluh, gustoća trave
- ▶ Skriveni neuroni
- ▶ Izlazni neuroni – hodanje i skretanje, jedenje, razmnožavanje



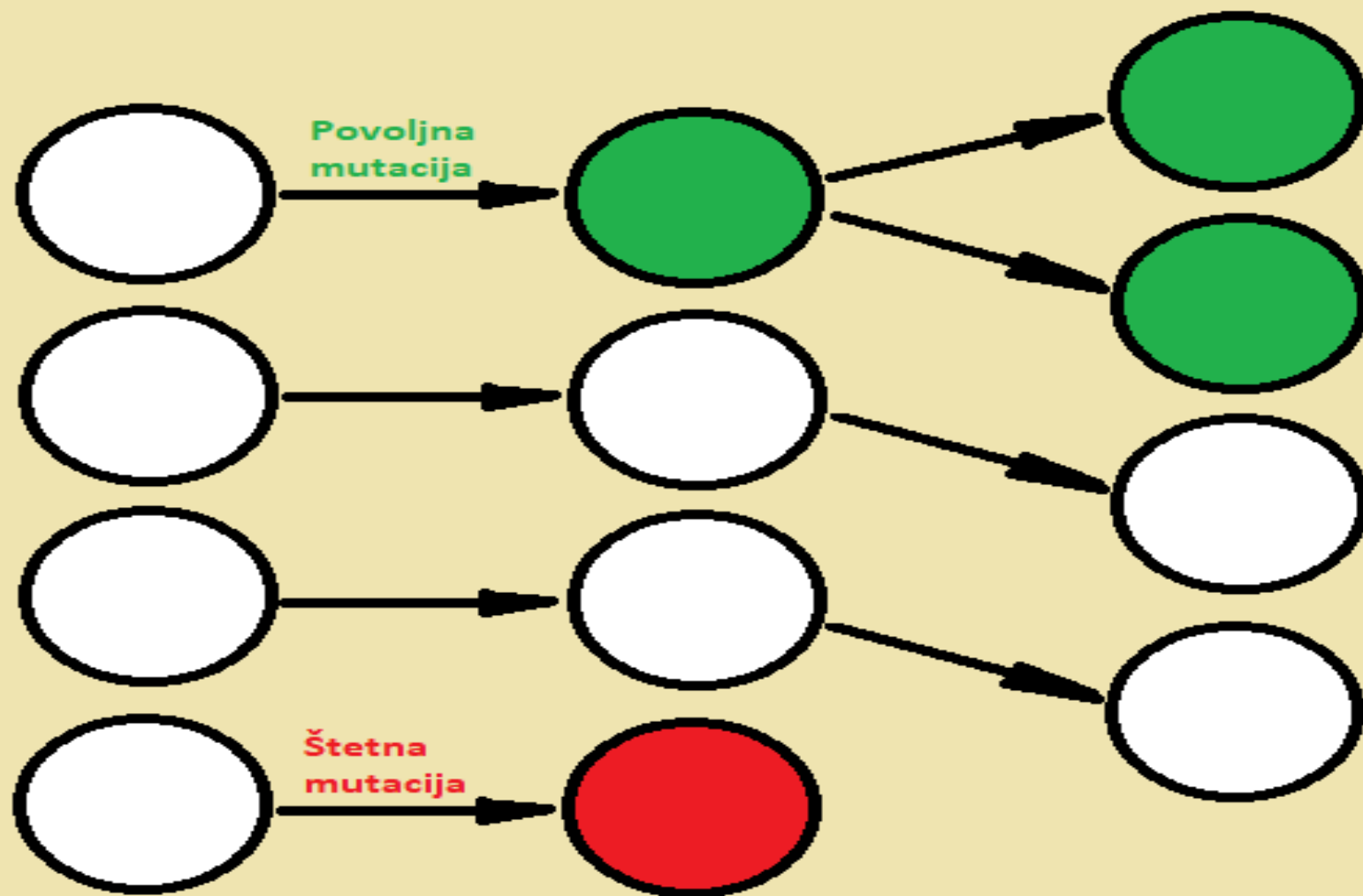
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Mutacija



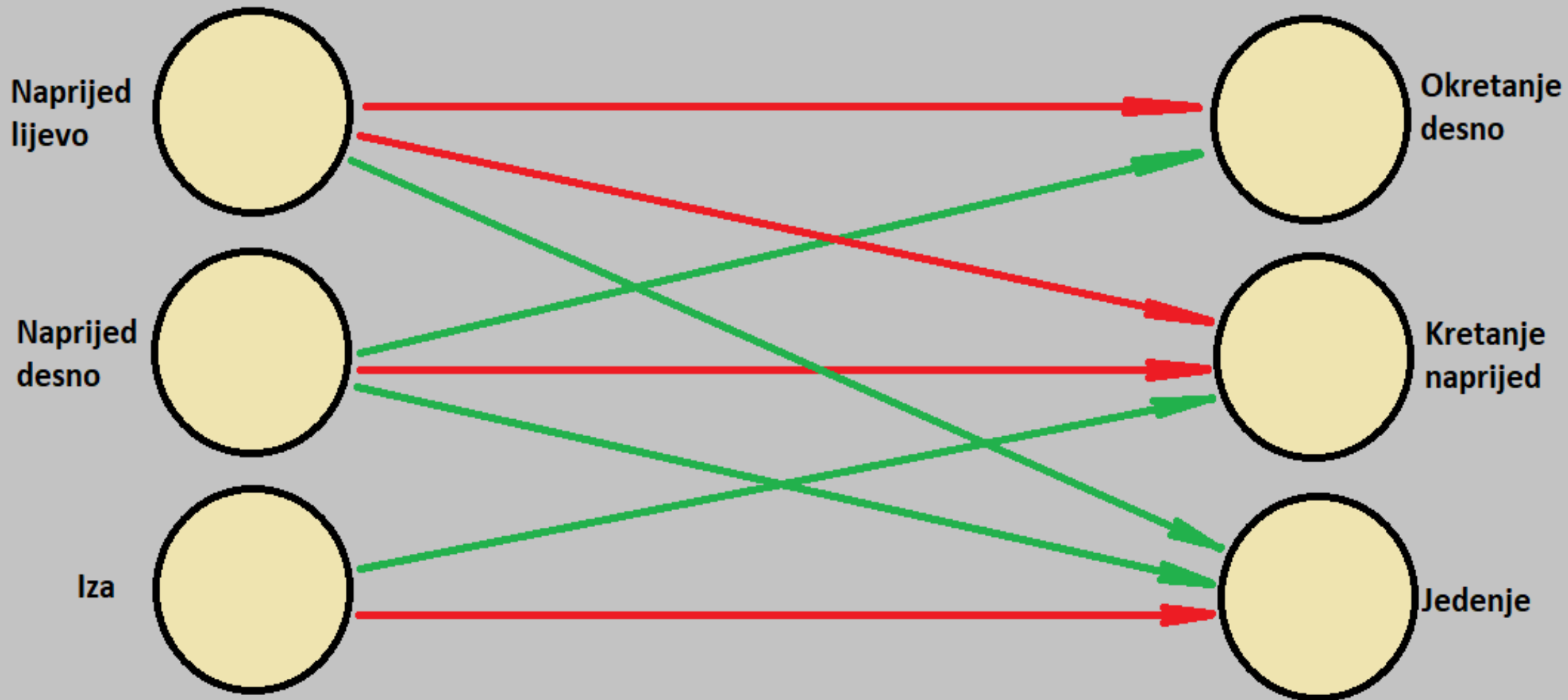
Selekcija



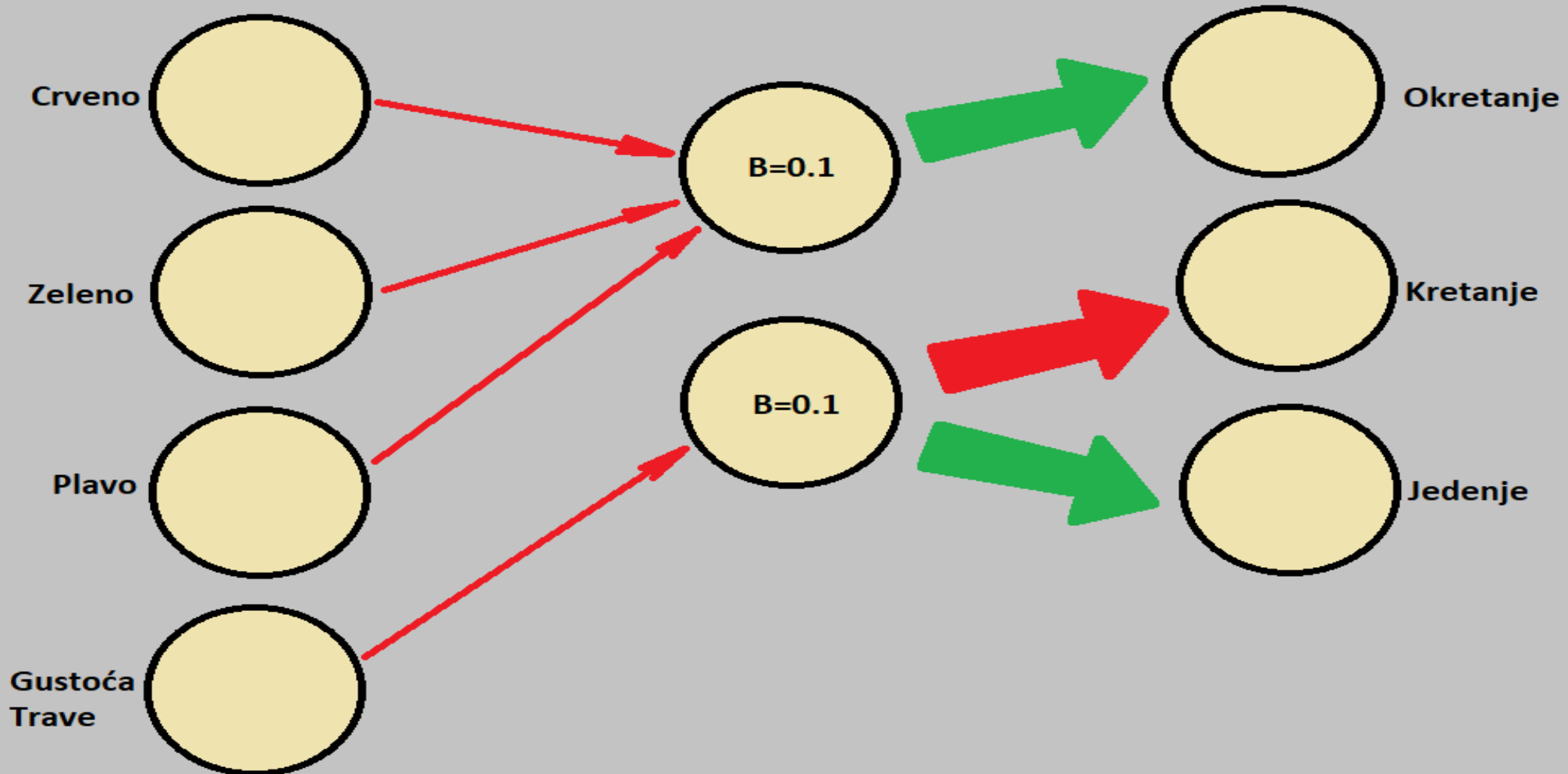
Neuravnoveženost ekosustava

- ▶ Uravnovežen ekosustav – balans između plijena i predatora
- ▶ Neravnoveženost – uzrokuje četverofazne oscilacije

Konstrukcija mreže - sluh



Konstrukcija mreže - vid



Konstrukcija mreže - energija



1 – Previše plijena



2 – Previše predatora



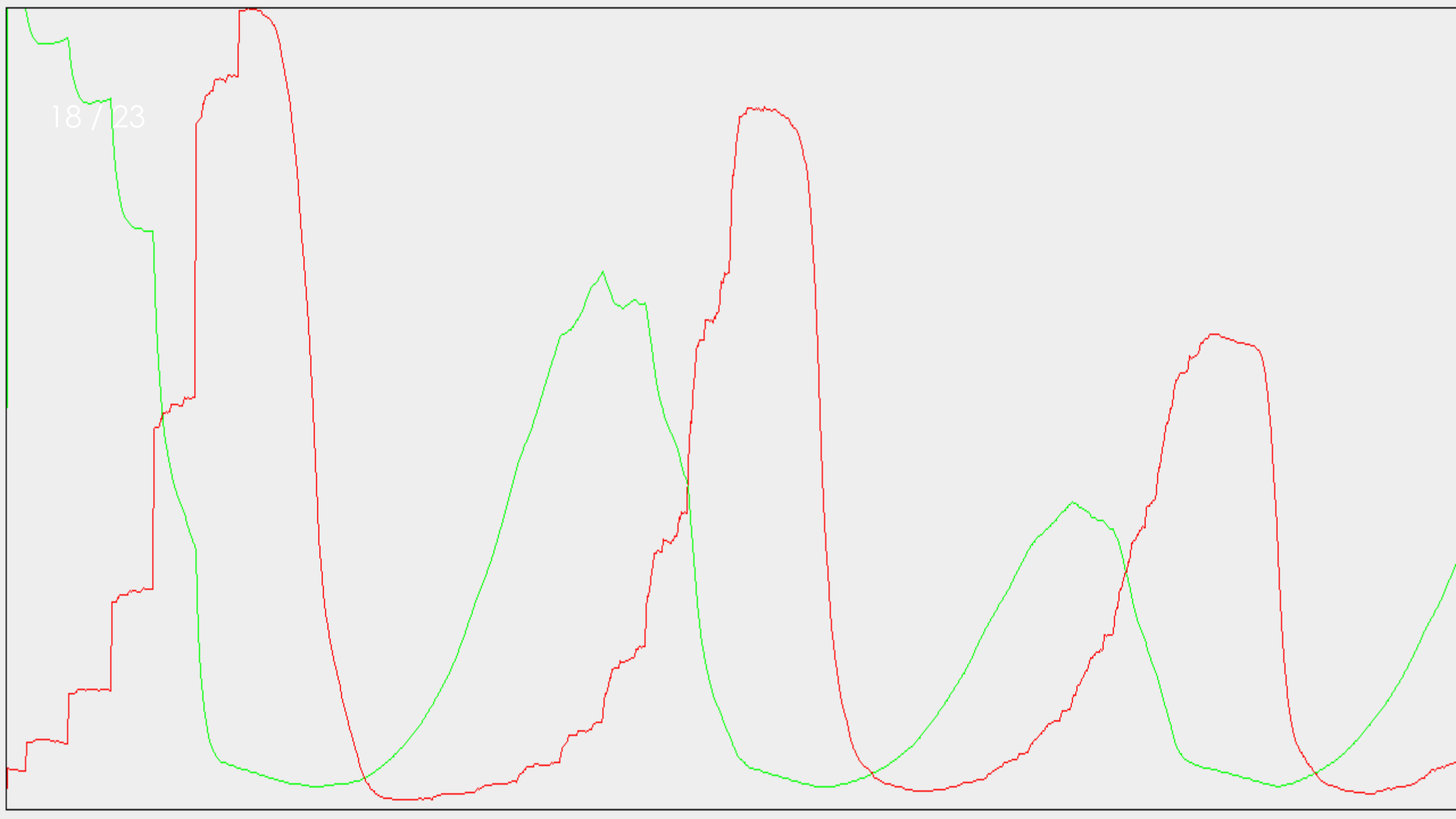
3 – Premalo plijena



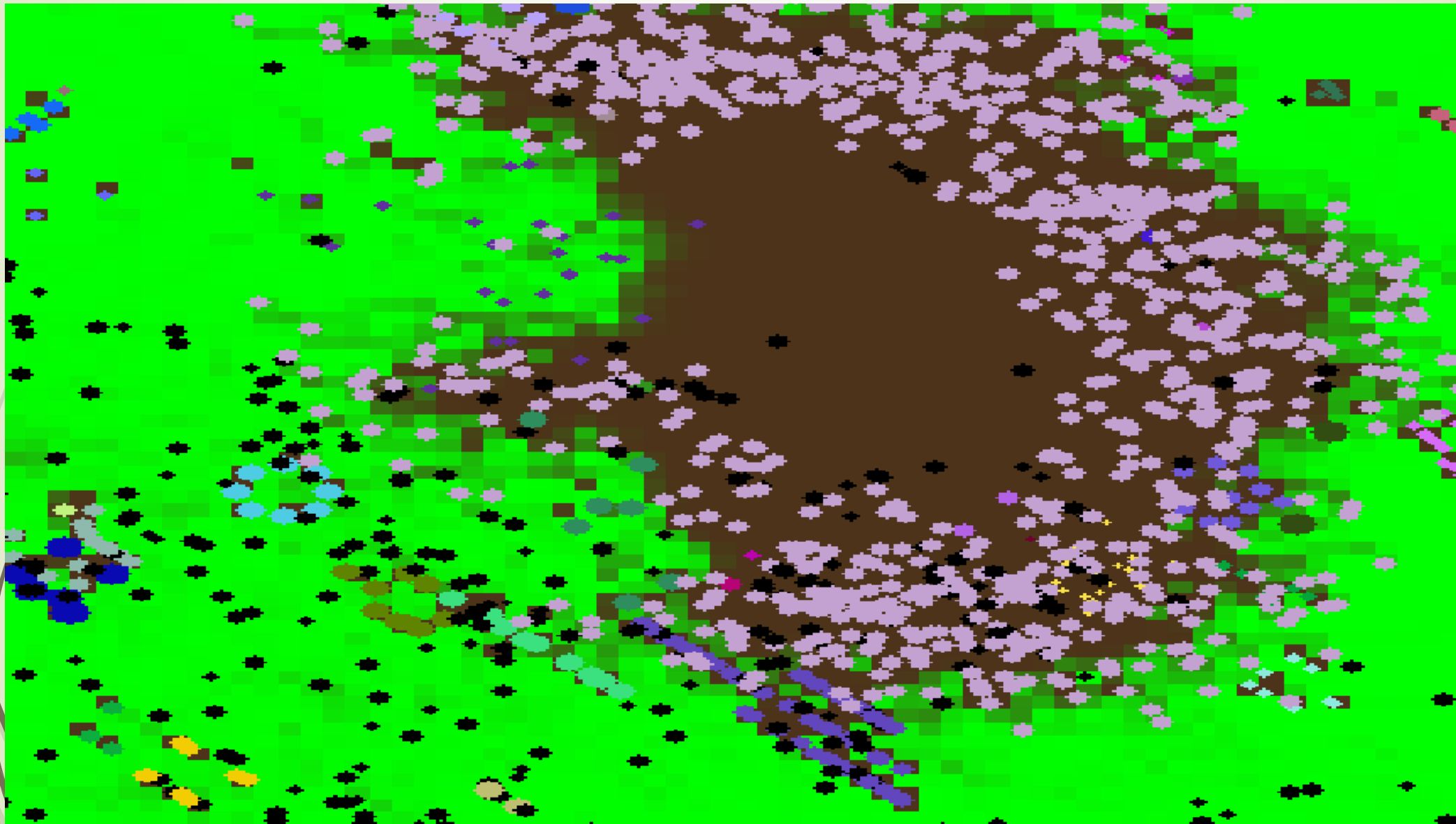
4 – Premalo predatora



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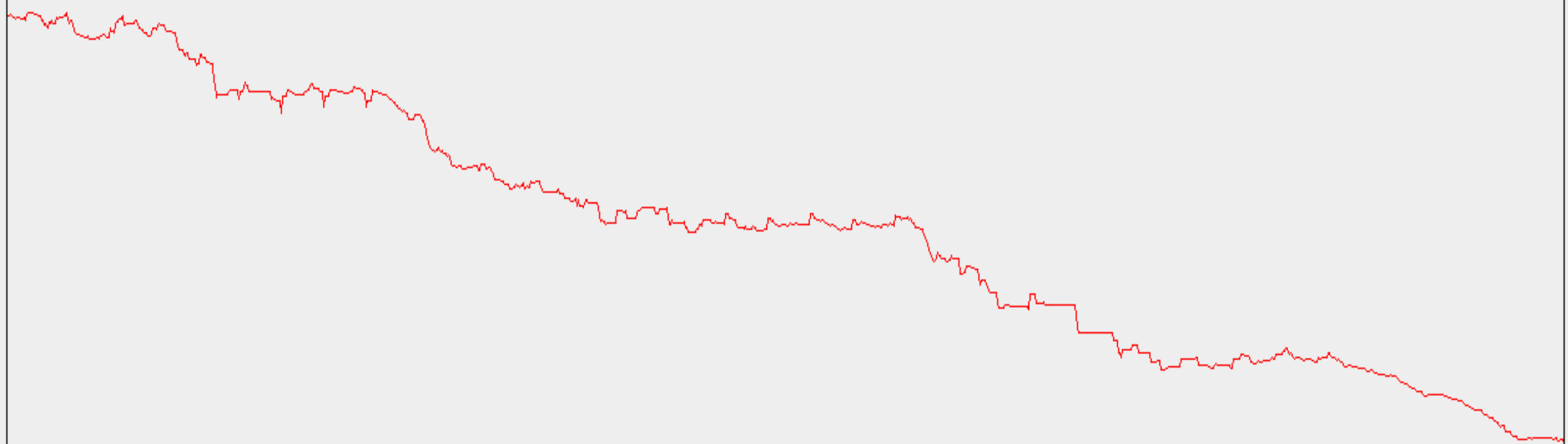


Problemi u evoluciji

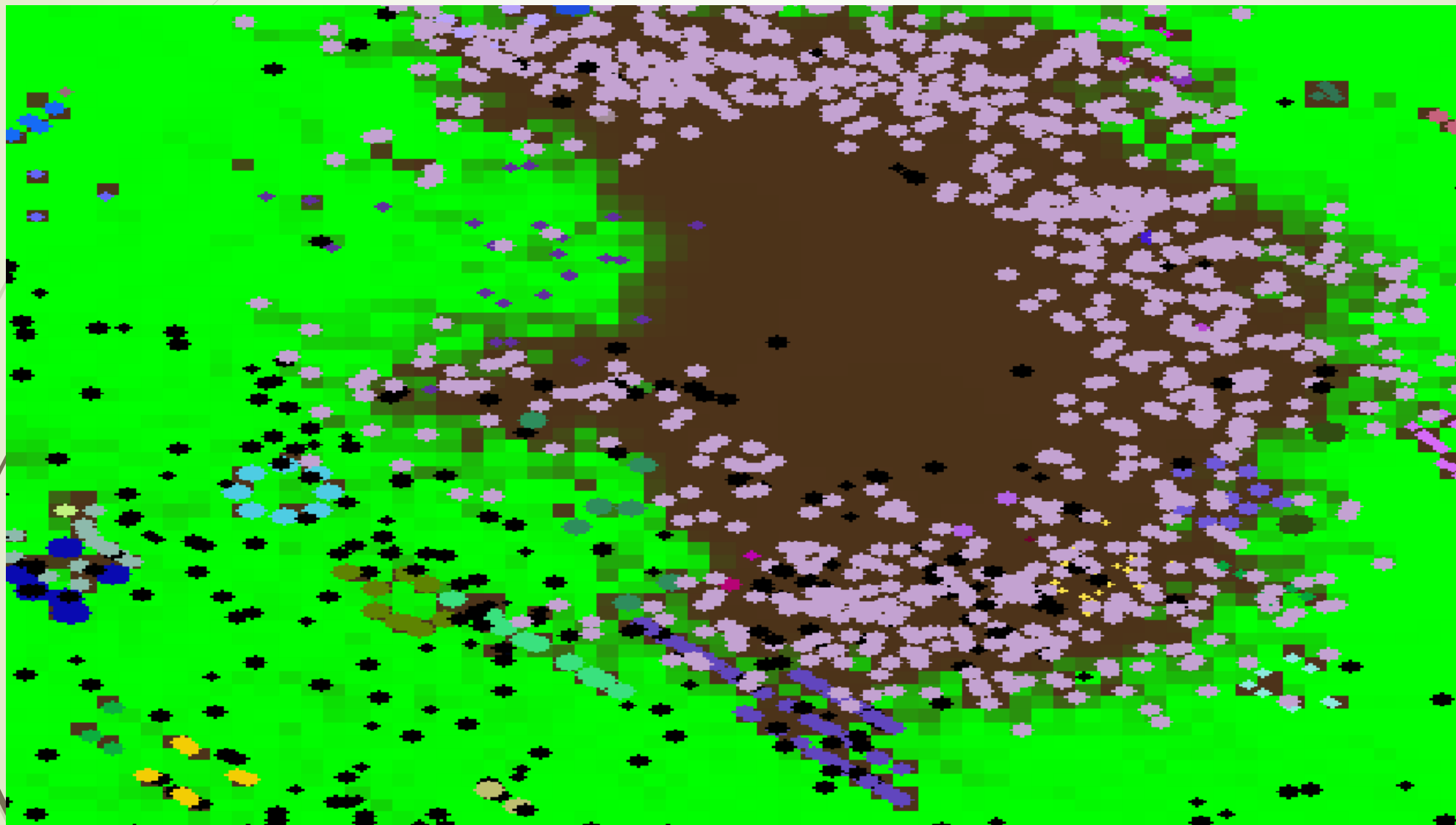


Primjer evolucije

- ▶ Otrovnost – životinja troši više energije, ali zato ubija mesojede koji ju pokušavaju pojesti
- ▶ Ekusustav bez mesojeda



Zaključak



Hvala na pažnji!

➤ Pitanja?