

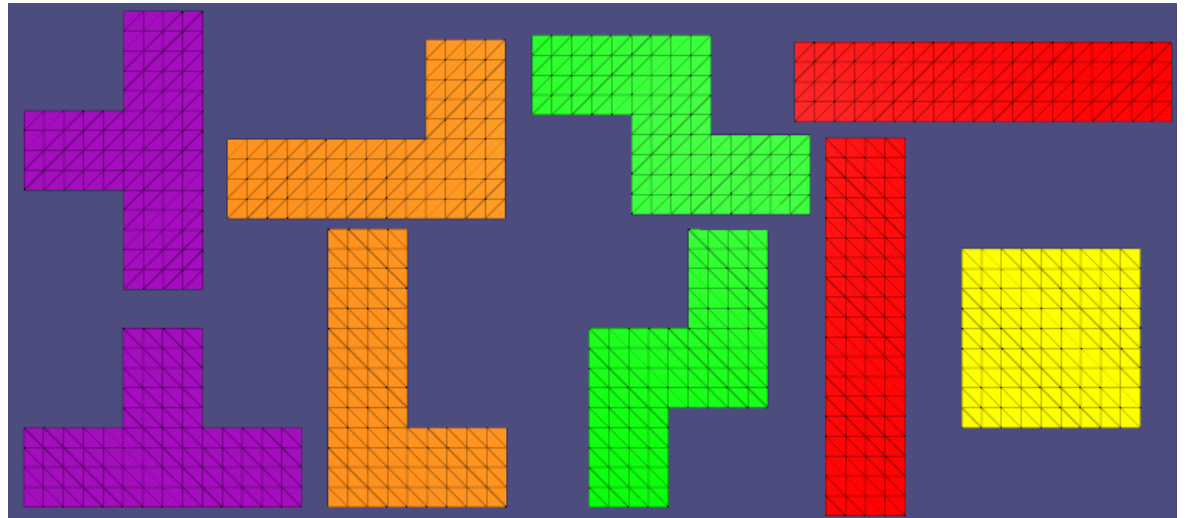
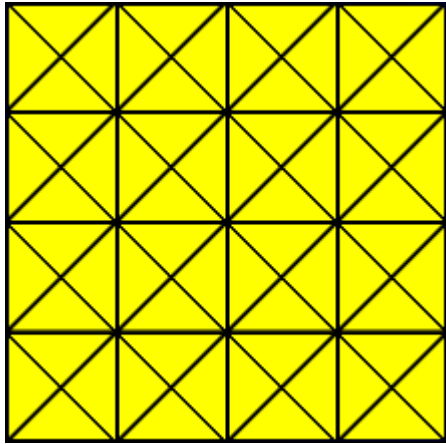
Jelly Tetris



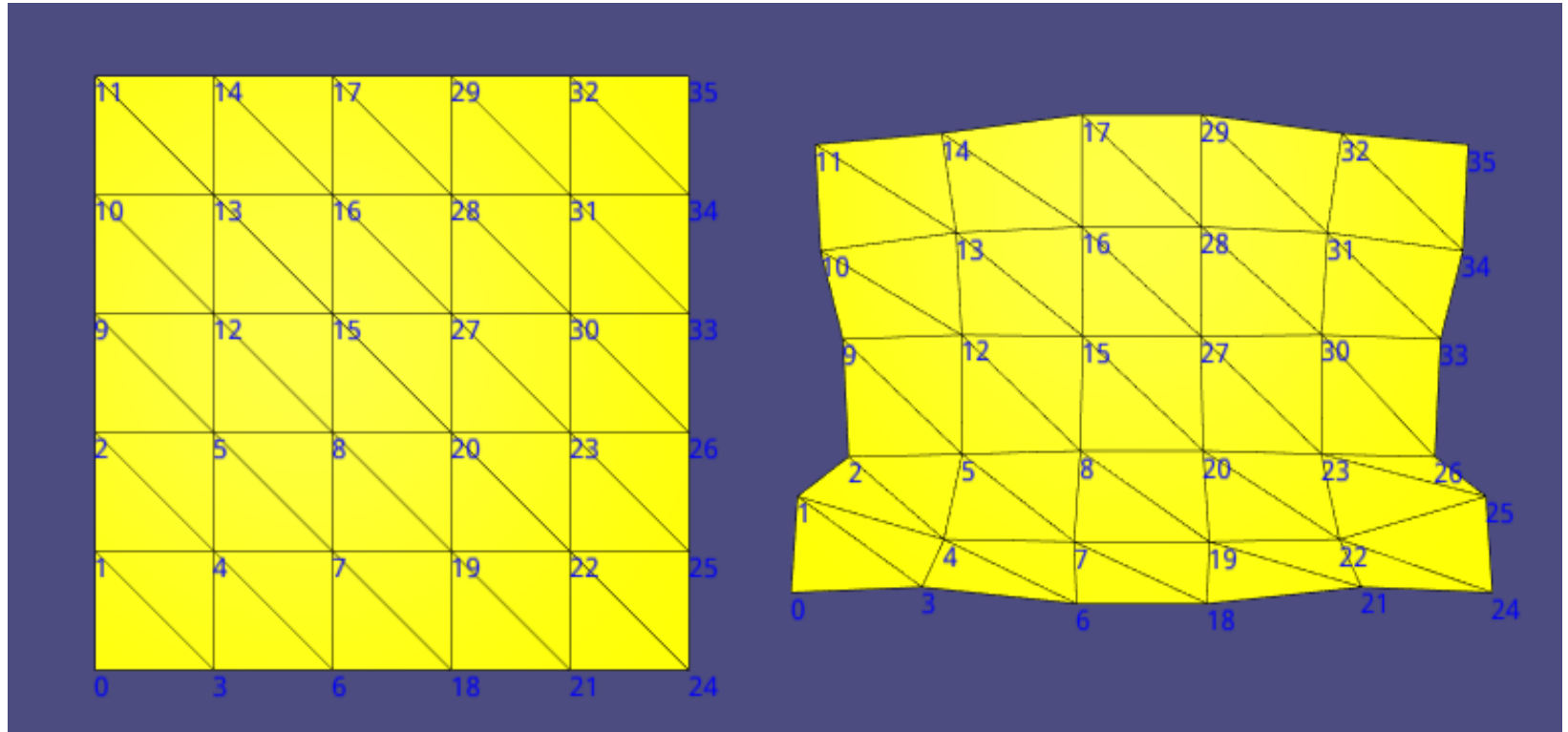
*A project by:
Amirhossein Heidari, Thomas Lang, Xiaohe Niu*

Mass spring system

- *Basic grid-mesh with diagonally connected vertices*
- *Composite blocks are connected basic blocks*
- *Relatively high stiffness + a little damping → Jelly-like behaviour*



Mass spring system

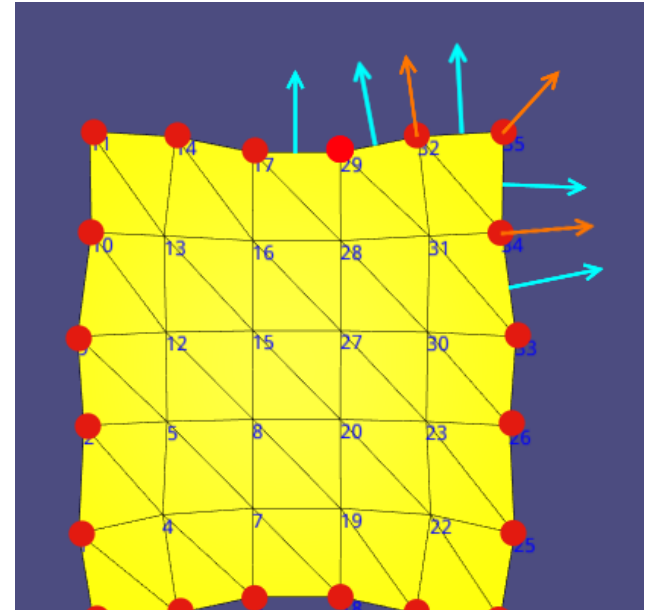


Collision detection and application

- **Broad collision between set of Blocks**
 - *AABB* → simple and fast
- **Narrow collision between particles**
 - Each particle has a radius (ca. $\frac{1}{3}$ edge rest length)
 - Only consider particles on the boundary
- **Apply elastic collision impulse**

$$v'_1 = 2 \frac{m_1 v_1 + m_2 v_2}{m_1 + m_2} - v_1$$

- **Direction** is determined via **neighbouring surface-edge normals**



Debugging - Fails

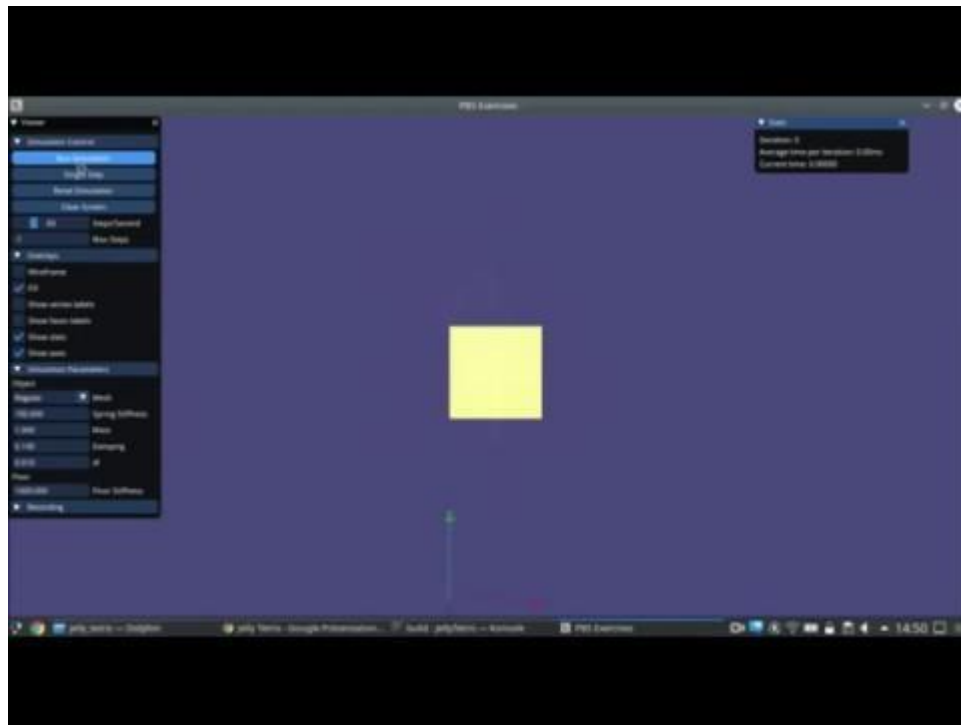
implicit euler->

..... -_-"

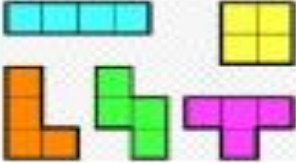

STUPID BLOCK



Y U NO WORKING???

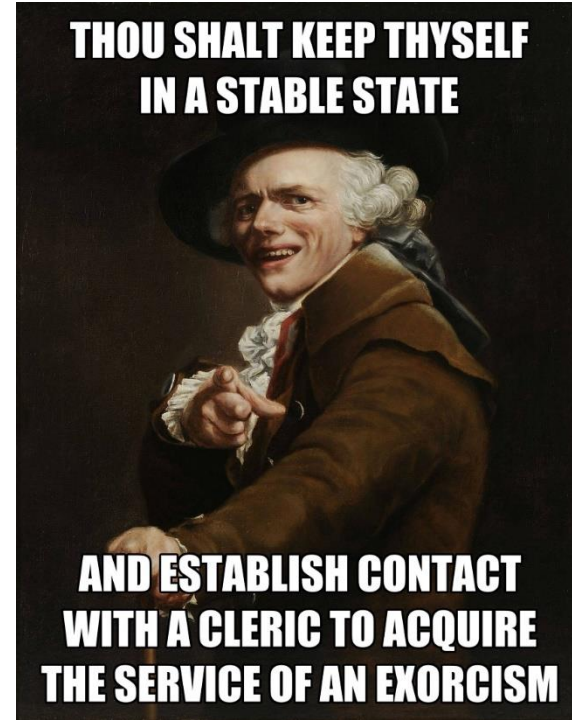
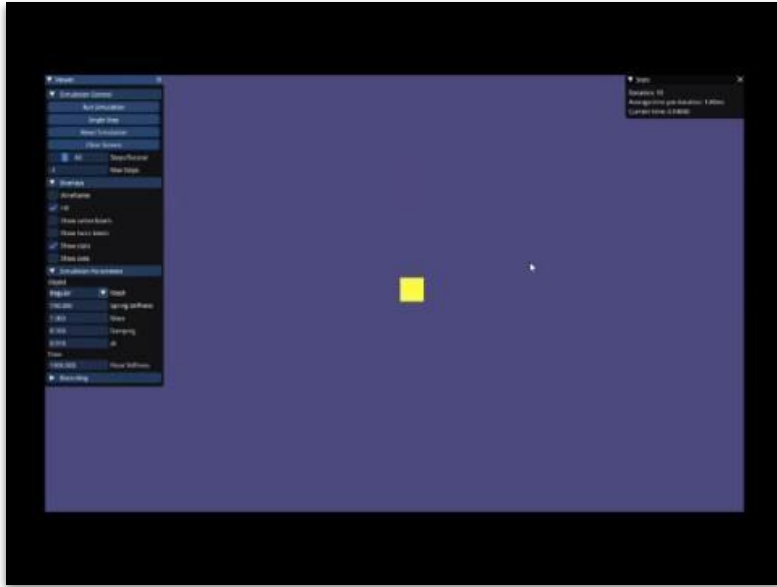


Debugging - Fails

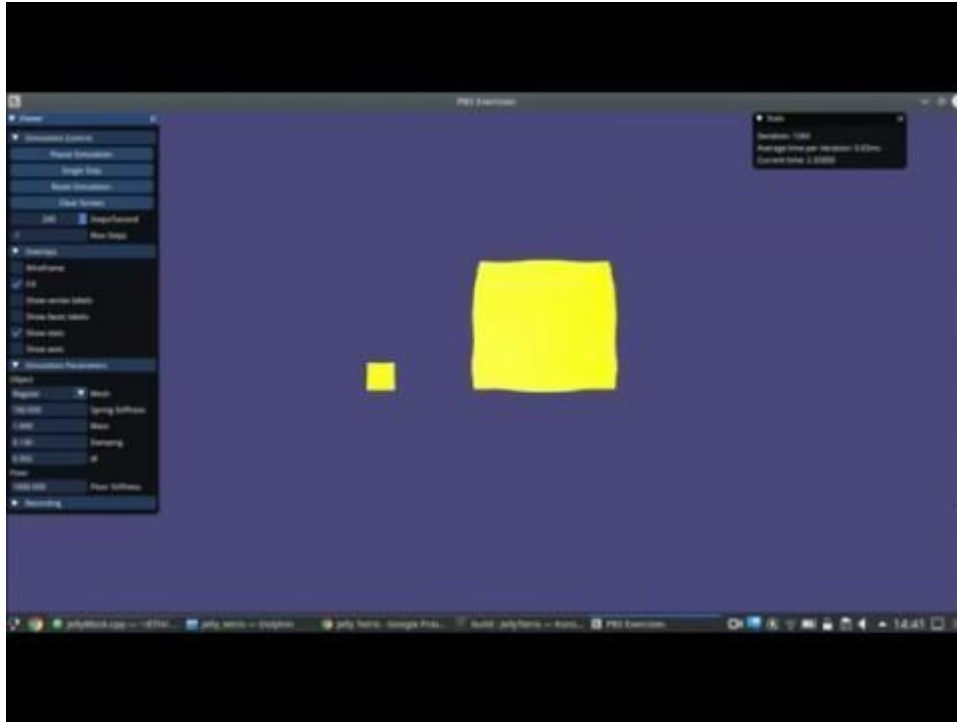
EXPECTATION...	
REALITY...	



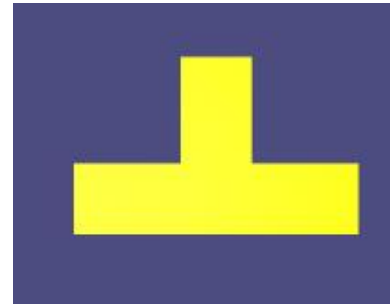
Debugging - Fails



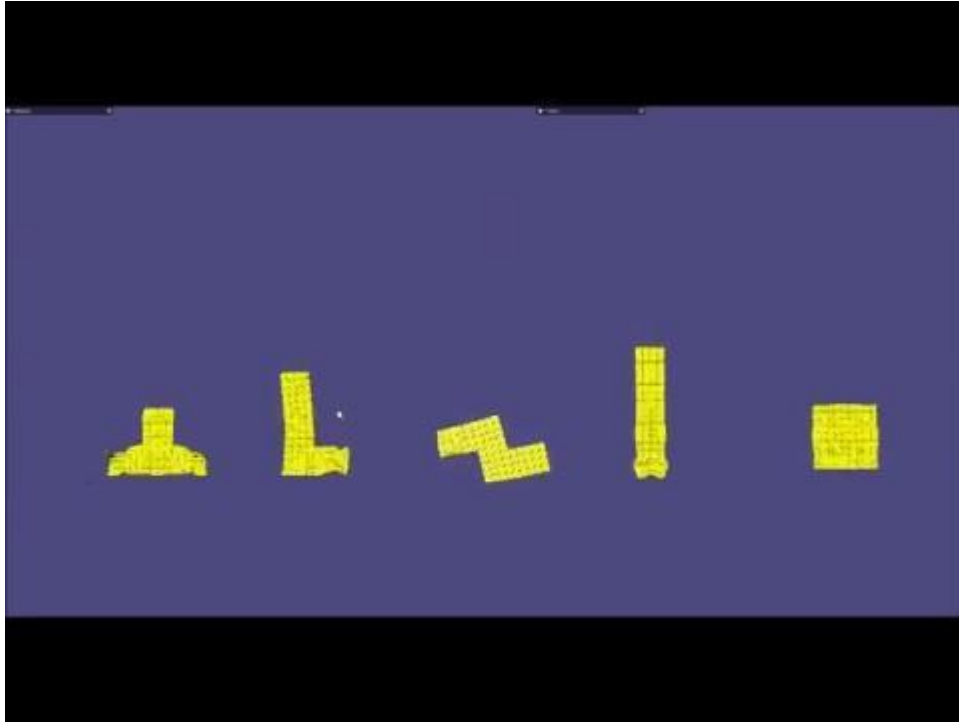
Debugging - Success?



Symplectic euler
revealed little flaws in
force calculations



Debugging - Success?



AAAAAAAAAAAAWWWWWW



FINALLY!!!

YYYYYYYEEEEEEEEAAAAAAA