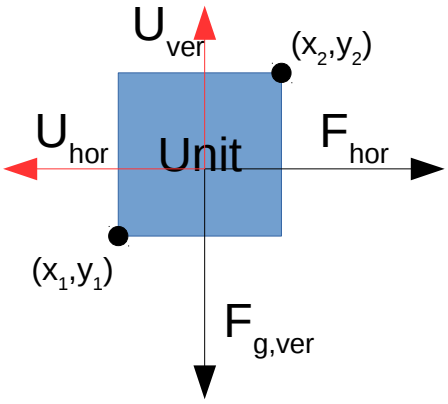


$$\vec{a} = \vec{F}$$

$$[\vec{a}] = \frac{\vec{points}}{frame^2}$$

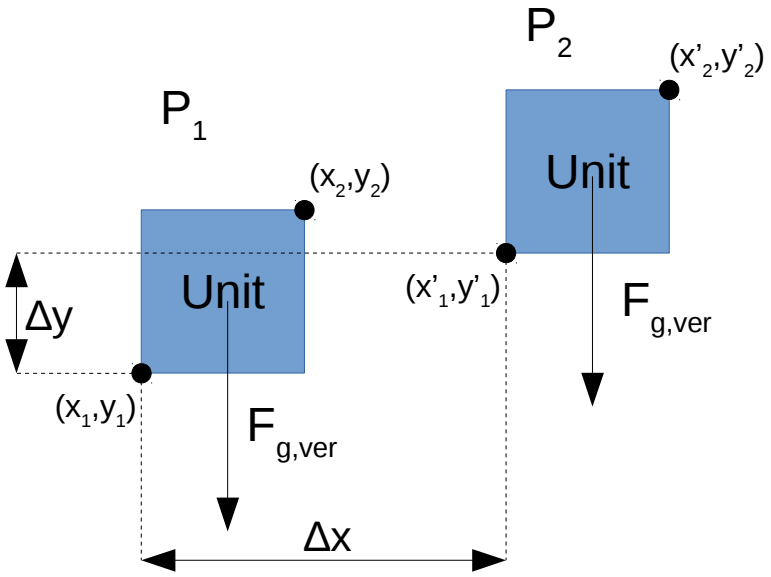
$$[\vec{u}] = \frac{\vec{points}}{frame}$$

To describe unit by itself we can define two points: (x_1,y_1) and (x_2,y_2) which describe position and size of the unit.

Each unit has vertical and horizontal vectors of forces. We can describe force with its value and direction. Direction can be described by + and -: + is right direction, - is left. It allows easy adding forces with saving right direction.

Superposition of internal and external forces of unit must cause moving of the unit. So unit should have two vectors of current speed: vertical and horizontal.

In real world a = F/m, but in our simple model we can allow it be a = F because all units have the same mass, let it equals 1. So our current speed $u = u_0 + F*t$. In our computer model time is discrete and made from frames, so let 1 frame = n seconds. Current speed changes between frames is $u = u_{pre} + F$.



To move static unit from position P1 to P2 in 1 frame we should move it by *delta x* horizontally and by *delta y* vertically. To move unit by *delta x* points it should have current horizontally speed = *delta x* points per frame. So force we should apply horizontally to unit is delta $x - x_1$.

In case of *y* we should additionally add force of gravitation to move unit up.

$$\Delta x = x_1 + F_x$$
$$\Delta y = y_1 + F_y - F_g$$

$$F_x = \Delta x - x_1$$
$$F_y = \Delta y - y_1 + F_g$$