Action	Possible offsets
finish	(0,0)
left	(-1,0), (-1,-1), (-1,1)
right	(1,0), (1,-1), (1,1)
up	(0,1), (-1,1), (1,1)
down	(0,-1), (1,-1), (-1,-1)
left-up	(-1,1), (-1,0), (0,1)
left-down	(-1,-1), (0,-1), (-1,0)
right-up	(1,1), (0,1), (1,0)
right-down	(1,-1), (1,0), (0,-1)