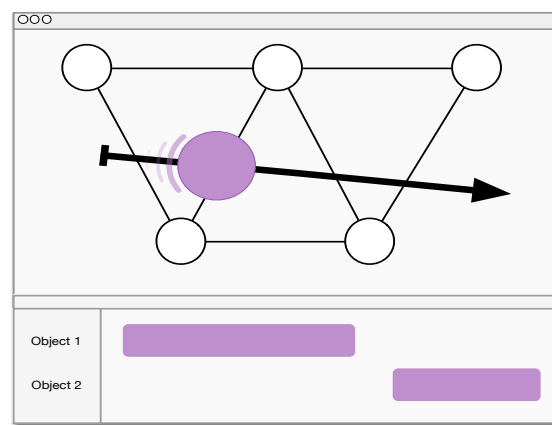
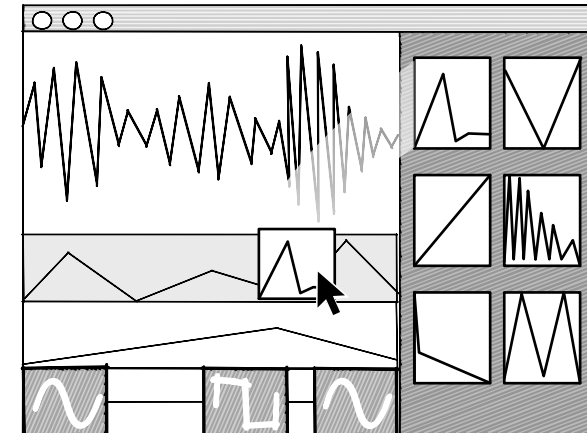


**Improvise:** Haptic Instrument



**Manipulate:** Tactile Animation



**Combine:** Design Gallery

<b>Who</b>	Haptic Designer-Proxies <i>(researchers with some haptics experience)</i>	Animators <i>(visual designers who would be haptic designers)</i>	End-users <i>(people with and without basic media editor experience)</i>
<b>What</b>	Dual Haptuators	Spatial Vibrotactile Pad	Phone-mounted Haptuator
<b>How</b>	Real-time, collaborative parameter control	Direct space/time manipulation of animation object	Example-based interaction techniques, morphing
<b>Discovery</b>	Good for ad-hoc exploration, collaboration; bad for refinement	Real-time manipulation valuable; animators drew from examples	Hypothesis: <i>Designers rely heavily on examples early on, make final adjustments directly</i>
<b>Platform</b>	Mobile (Android)	Desktop (Python)	Web (JavaScript)