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Subject: Bézier Curve and animation Engine for U++ CoreLib

Posted by [dodobar](#) on Thu, 04 Sep 2025 06:10:09 GMT

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As per the get hub discussion:

<https://github.com/orgs/ultimatepp/discussions/274>

([https://github.com/Trilec/upp\\_AnimationEasing](https://github.com/Trilec/upp_AnimationEasing))

Quick update after a few weeks on this.

The little easing header I dropped earlier has grown into a proper animation lib.

What's working now

- Core ops: play, cancel, stop, delay, looping/yoyo, pause/resume.
- Easing: both presets and custom Beziers.
- Safe: reentrancy is handled, memory cleans up properly (no leaks or dangling refs).
- Stress tests: concurrent bursts, pause/resume loops, cancel/restart abuse... holding up well so far.
- API surface is still U++-native and clean (AnimateProperty, AnimateFade, AnimateColor, Easing::Bezier, etc.).

What's different from the old helpers

- Old Animate() was narrow and ad-hoc; this lib has one consistent core + thin wrappers.
- Wrappers (Fade, Rotate, Pulse, etc.) are now just sugar over the same engine.
- Animations finish/cancel deterministically -- no dangling timers.
- Designed with UI integration in mind rather than bolted on.

Next steps

Stress tests + examples DONE , PR-ready.

Integration concepts (small + safe):

Keep runtime self-contained (Animation.h/.cpp).

Add one light layer in Chameleon: an animated look wrapper that interpolates between normal/hot/pushed/disabled. Themes can opt-in by swapping style.look[] to this animated one.

Same helper can animate draw-time values (colors, fonts, underlines, sliding panels).

Global switch ChAnim::SetEnabled(bool) for users who want to disable animations.

This keeps it host-look-first, opt-in, and widget code stays untouched. A couple of tasteful demos (button hover fade, focus ring pulse, tab highlight slide) would prove the path.

Would love feedback on whether this direction feels right before I wire it into CtrlLib.  
examples of integration so can begin testing

UI TEST Demo :

## File Attachments

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1) [animation.jpg](#), downloaded 129 times

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