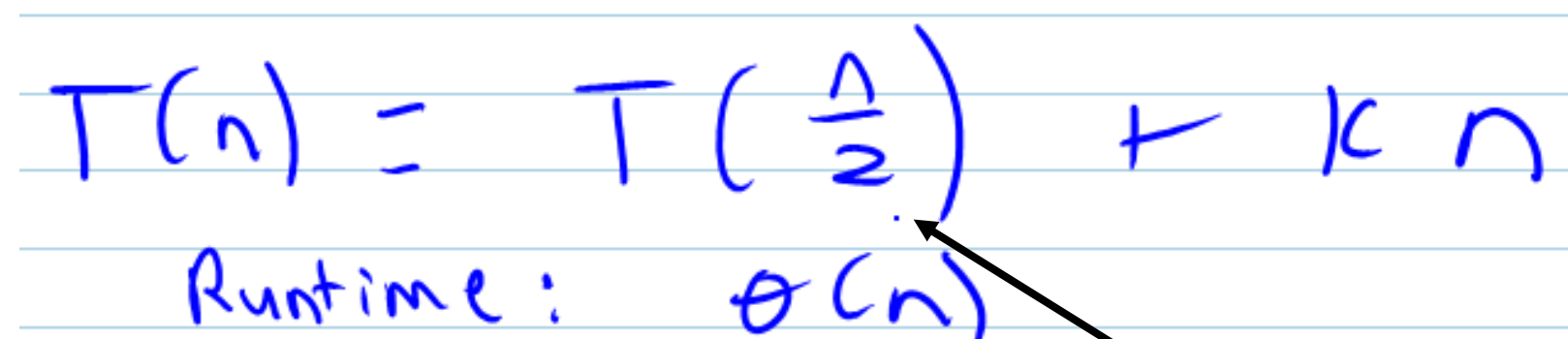


# PenAttention: Highlight Your Pen Cursor for In-Class Presentations

## Overview

Scenario: Instructor using a Tablet PC connected to a projector to deliver a classroom lecture.

Problem: The instructor may want to “point” at different objects on the screen with the pen. But can students see what the instructor is pointing at?



$T(n) = T\left(\frac{n}{2}\right) + kn$   
Runtime:  $O(n)$

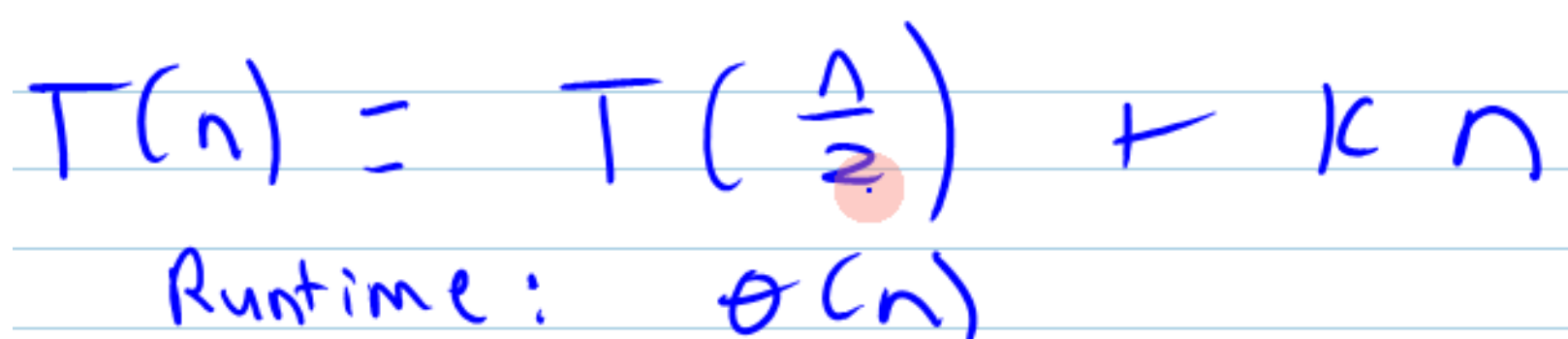
Inconvenient solutions:

- Use eraser to point
- Separate laser pointer
- Right-click for ring
- Large pen point size

Most programs turn the cursor into a teeny tiny dot that students can't see

### Our free solution: PenAttention

Automatically highlights the pen's location with a semi-transparent circle.



$T(n) = T\left(\frac{n}{2}\right) + kn$   
Runtime:  $O(n)$

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## Technical Details

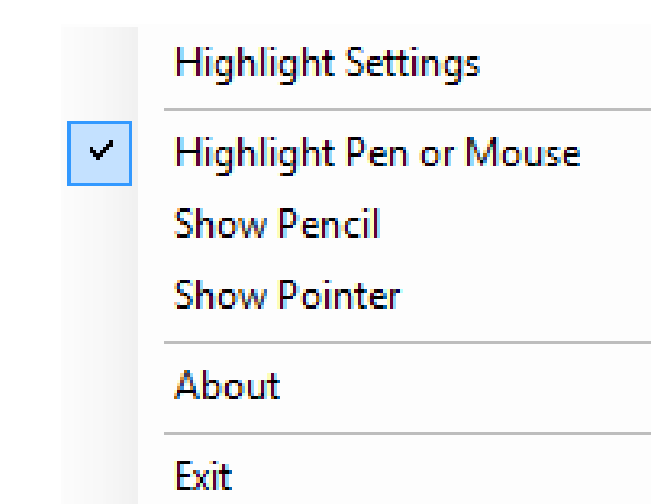
Don't care about implementation details? Just download and run the installer.

- Main application written in C#, requires the .NET framework 2.0 or higher.
- C++ Mouse Hook intercepts mouse location
- Tablet PC API used to detect presence or absence of the pen
  - ◊ No pen: Regular mouse pointer
  - ◊ Pen: Highlight settings applied
- Highlighting the mouse
  - ◊ Window with a solid circle drawn at the mouse pointer's location
  - ◊ Per pixel alpha blending performed with the window and background to allow for semi-transparency
- Free and open source

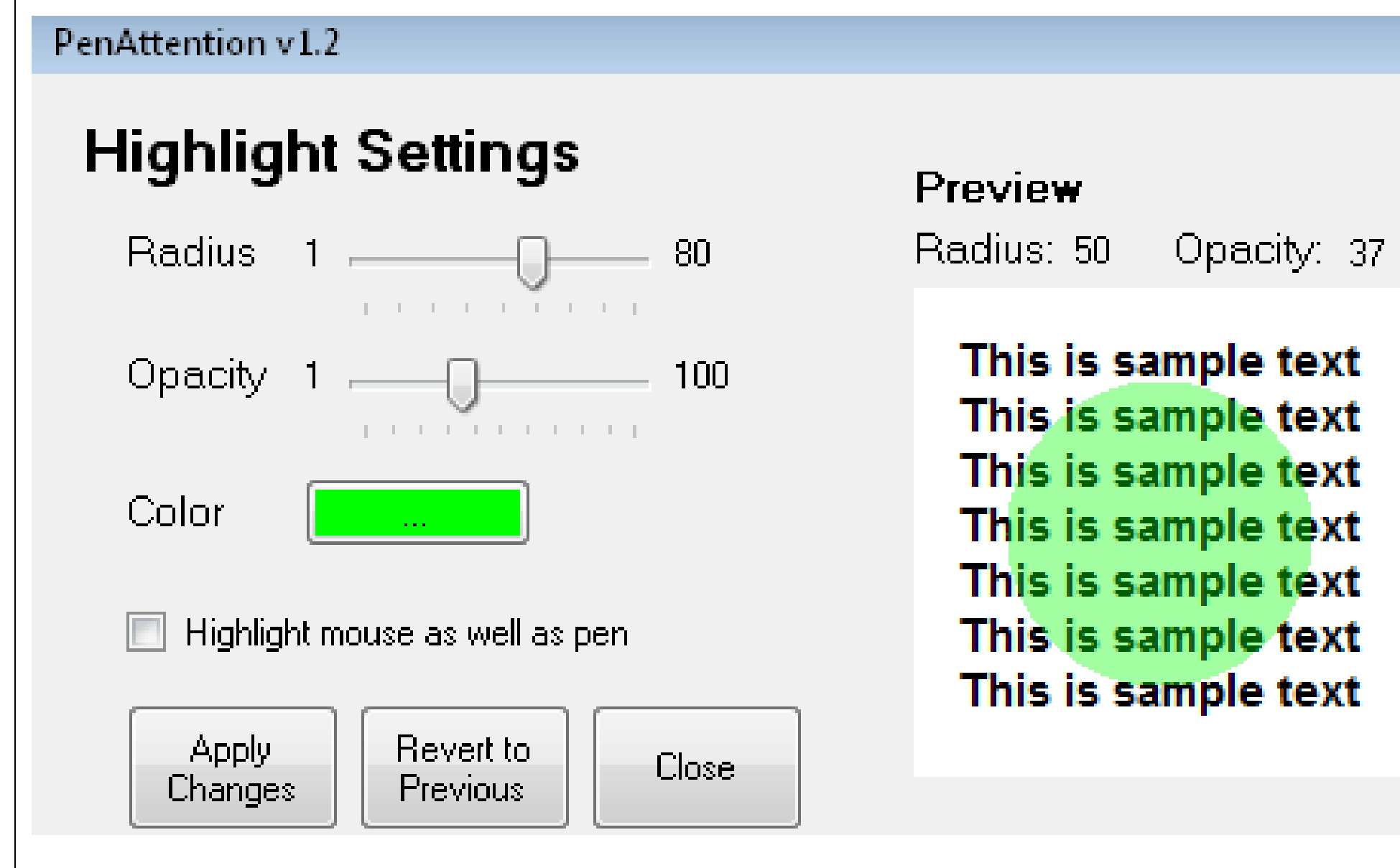
## Features / Use

Compatibility: Windows XP Tablet PC edition, Vista, or Windows 7. Separate version for Windows XP (non-Tablet PC edition).

Adds an icon to the system tray with highlight, pencil, or pointer options when clicked.



Settings allow the user to choose the size of the highlight circle, opacity, and color.



Download free at <http://www.math.uaa.alaska.edu/~afkjm/PenAttention>



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WIPTE Travel support provided UAA Information Technology Services and the College of Arts & Sciences