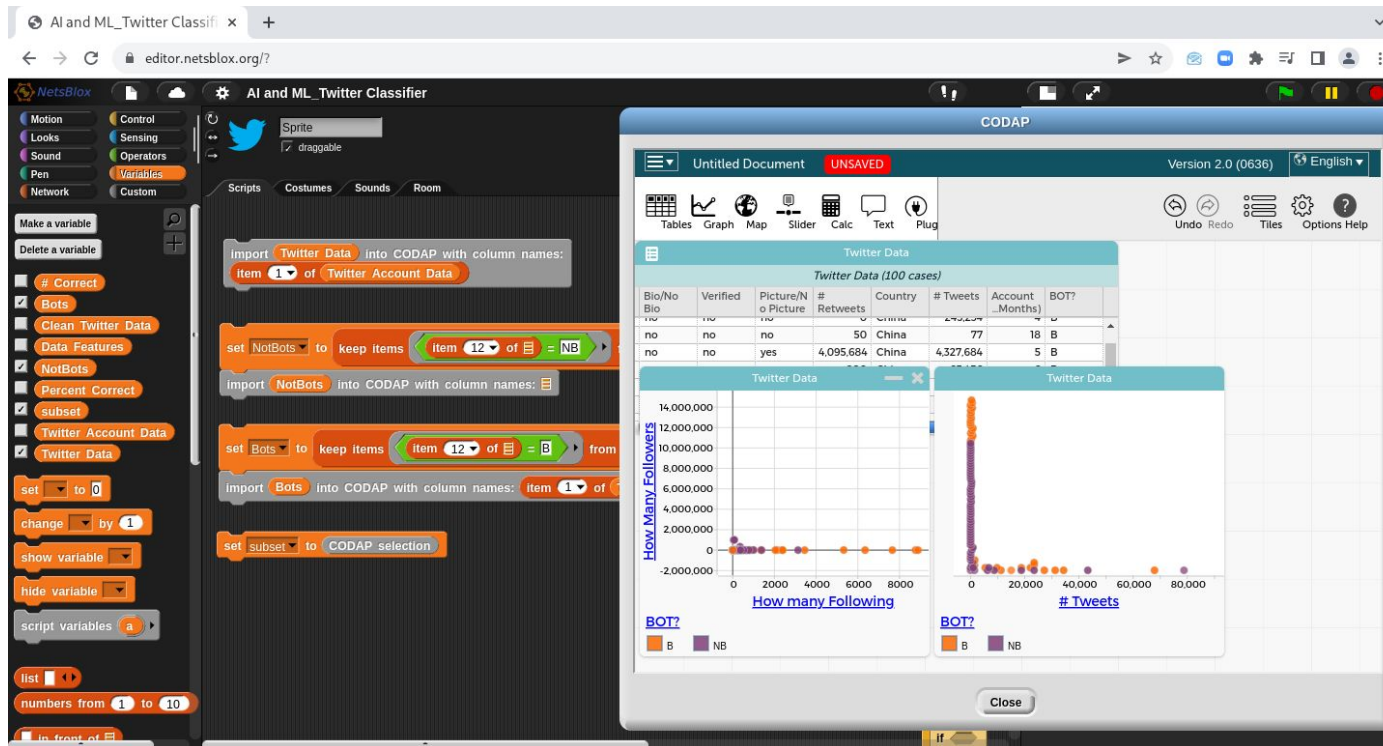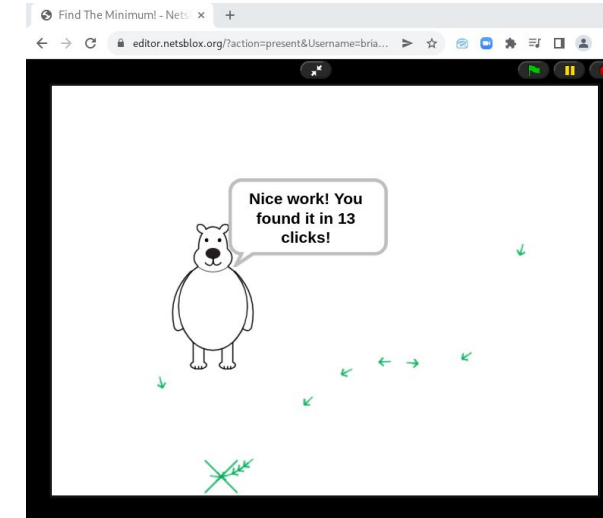# Beyond Black-Boxing: Building Intuitions of Complex Machine Learning Ideas Through Interactives and Levels of Abstraction
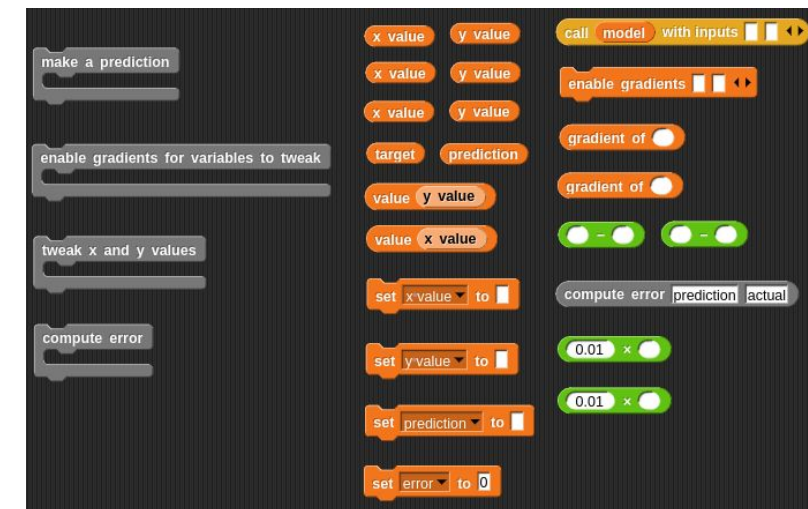
Can complex ML concepts be made more accessible through interactive tools, pre-programmed games, and carefully scaffolded activities?

Pre-programmed games to introduce fundamental ML topics in interactive ways - such as embodying the optimization algorithm

Interactive data exploration within the programming environment

Programming at multiple levels of abstraction