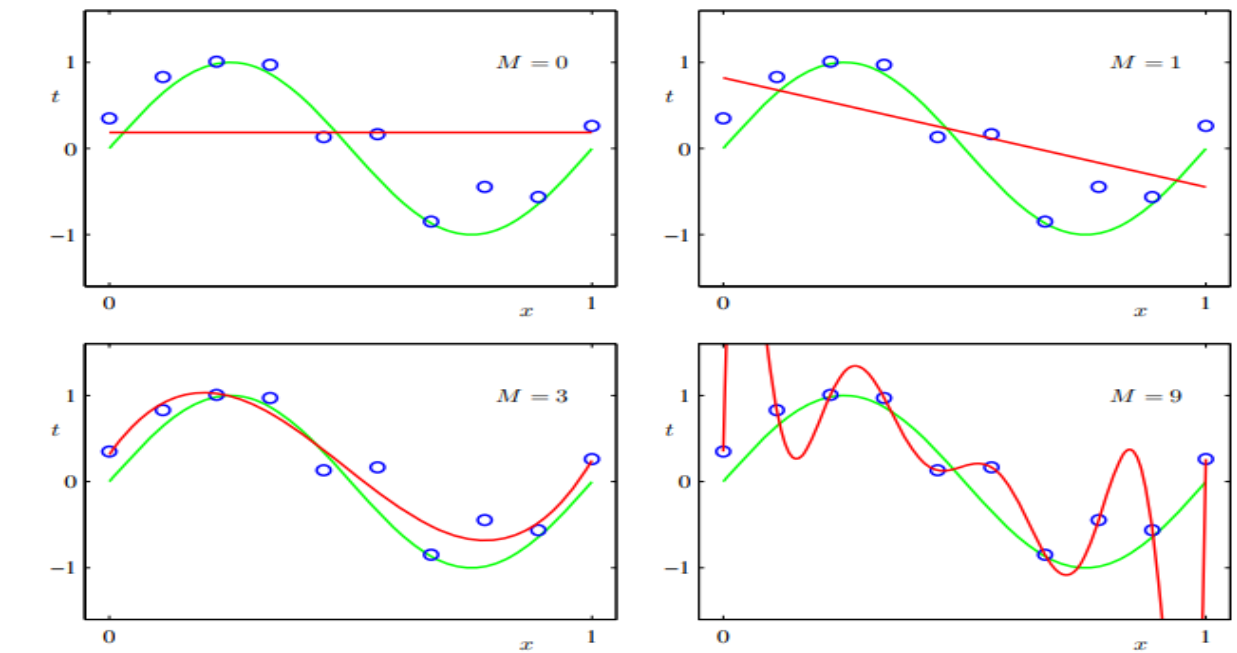
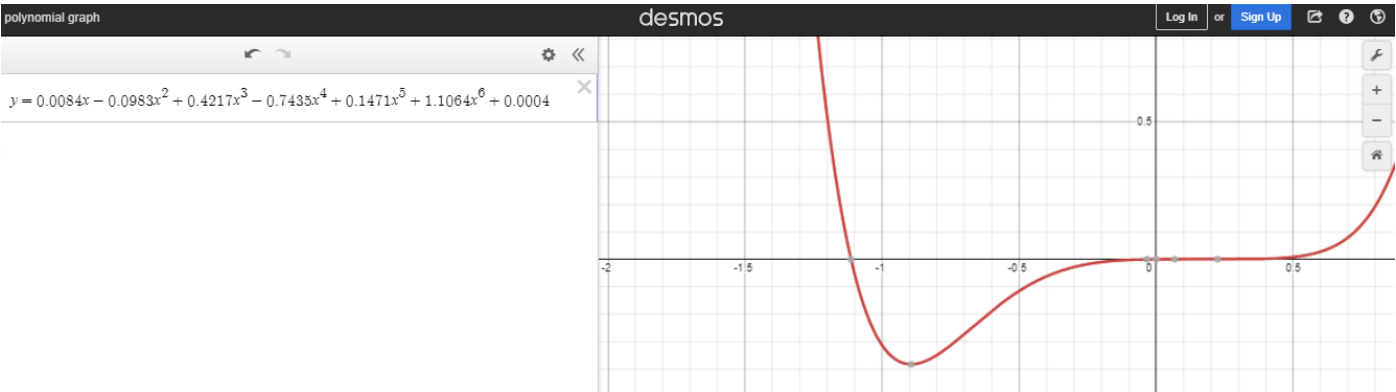


# DIFFERENT POLYNOMIAL DEGREE CURVES

## 1.1. Example: Polynomial Curve Fitting

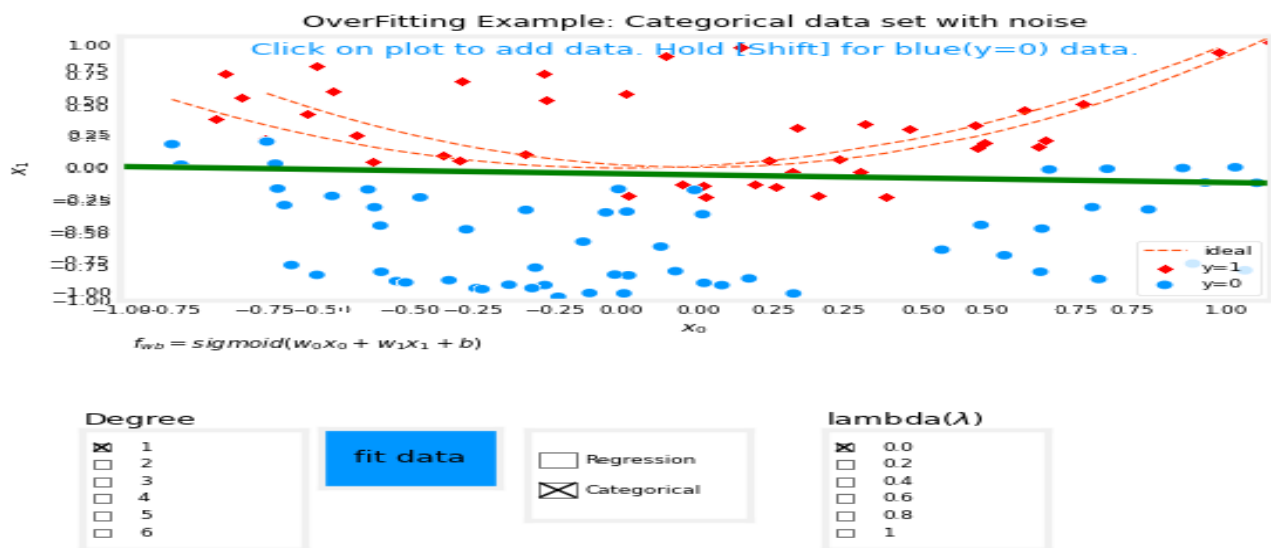


**Figure 1.4** Plots of polynomials having various orders  $M$ , shown as red curves, fitted to the data set shown i

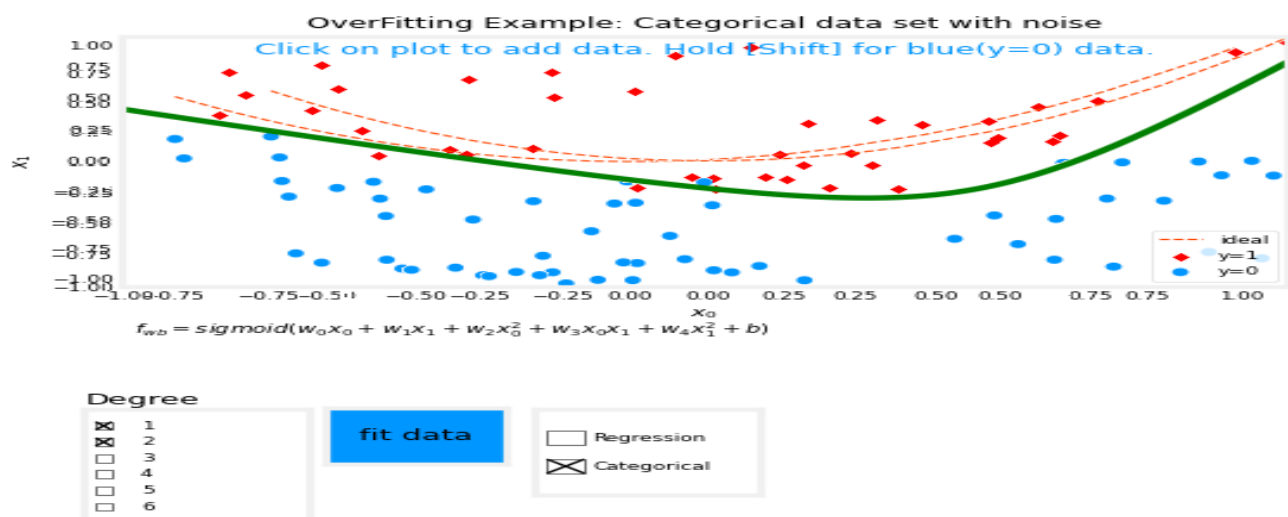


# CLASSIFICATION

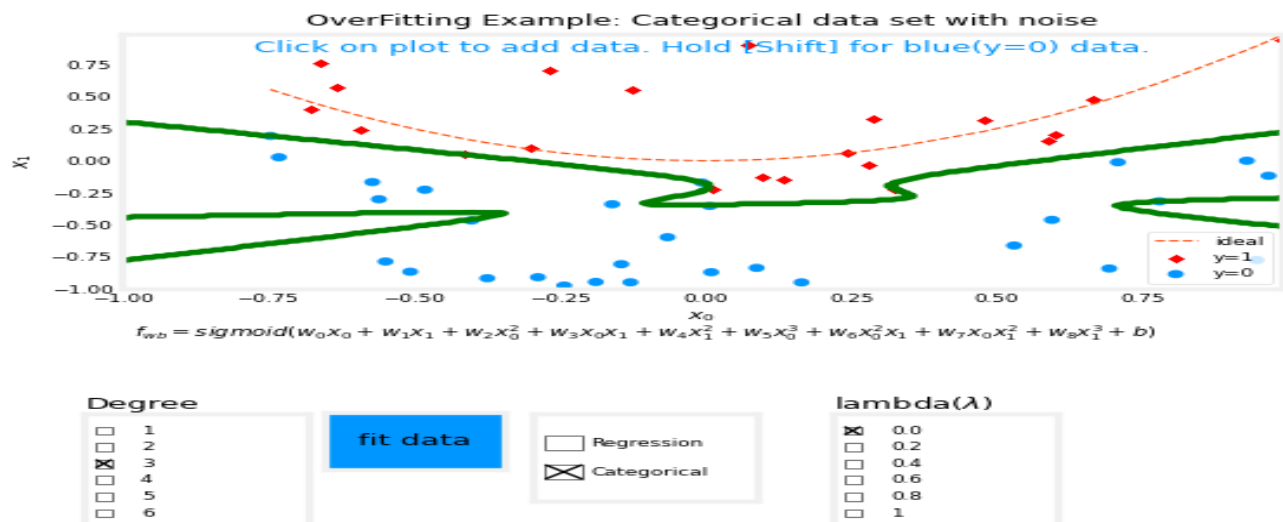
CASE1 : Fitting Decision Boundary of Degree 1 polynomial (NO REGULARIZATION)



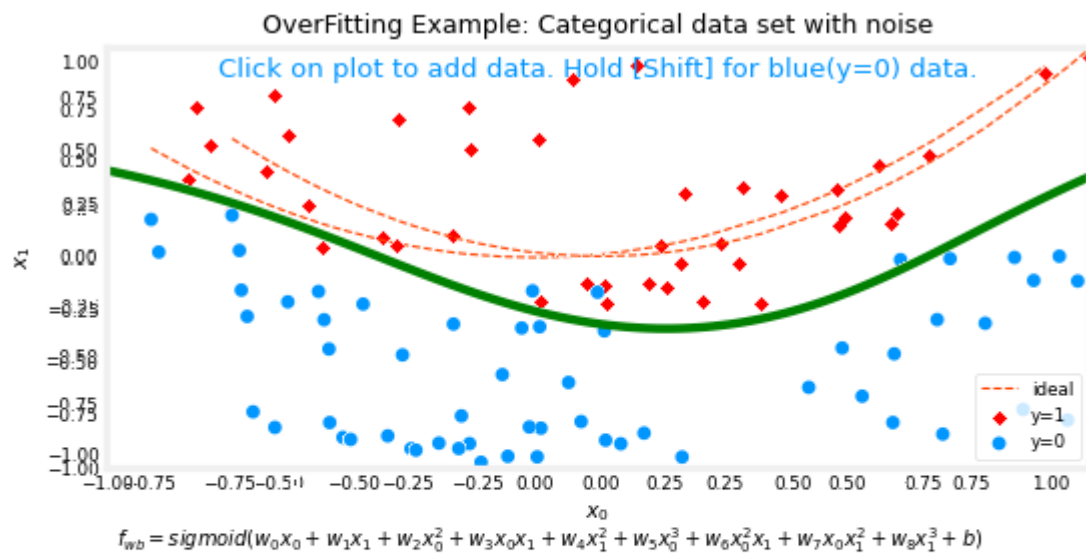
CASE2 : Fitting Decision Boundary of Degree 2 polynomial (NO REGULARIZATION)



CASE3 : Fitting Decision Boundary of Degree 3 polynomial (NO REGULARIZATION)



# CASE4: Fitting Decision Boundary of Degree 3 polynomial (WITH REGULARIZATION)



Degree

- ☐ 1
- ☐ 2
- ☒ 3
- ☐ 4
- ☐ 5
- ☐ 6

fit data

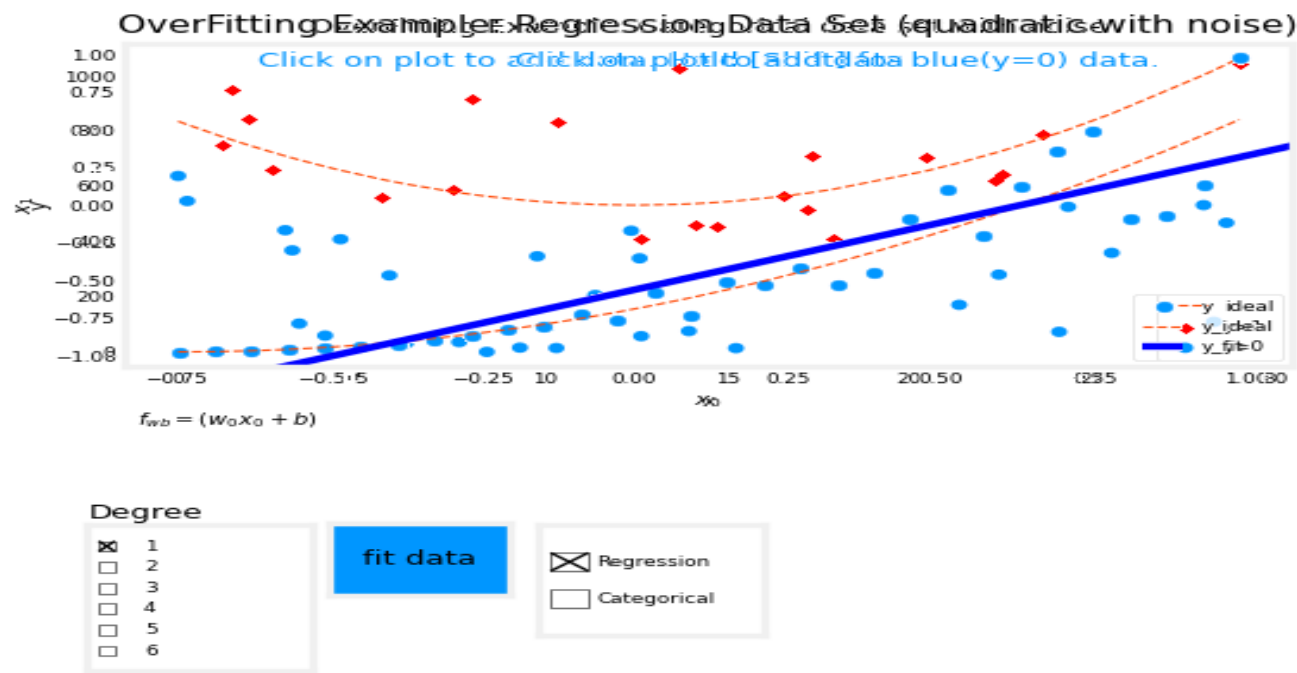
- ☐ Regression
- ☒ Categorical

lambda( $\lambda$ )

- ☐ 0.0
- ☐ 0.2
- ☒ 0.4
- ☐ 0.6
- ☐ 0.8
- ☐ 1

REGRESSION

CASE1 : Fitting Degree 1 polynomial



CASE2 : Fitting Degree 6 polynomial

