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### 1. Overview

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#### Objectives

By the end of this lecture and recitation, you will be able to:

- Given a function  $f(x, y)$  and a point  $(x_0, y_0)$ , compute the matrix that **best approximates** the change of  $f$  for inputs near  $(x_0, y_0)$ .
- Solve modelling questions using **linearization**.
- Compute the **Jacobian** of a function  $f$ .

### 1. Overview

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