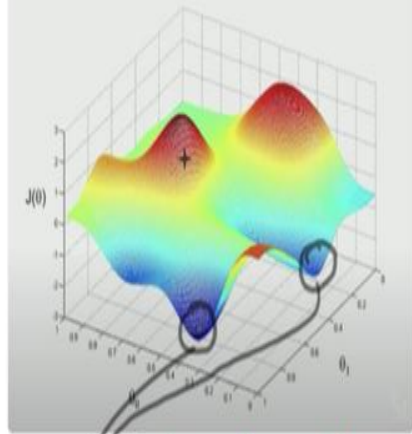## Gradient Descent

- Start at some point
1. Take 360° look & figure out which direction baby step leads to lowest value
- Repeat

→ here θ_2 is not included to make a 3-D diagram

Lowest point

* Slope ⟹ Give rate of change
  Derivative ⟹ Slope
  - Derivative ⟹ -ve slope which means the rate of lowest descent.

`a := b`
⟶ expression
`a := a+1`
⟶ assignment

Ex:- $f(x,y)$ → here unlike slope the function doesn't change in one direction like the above fig. We use gradient instead of slope (a vector that points in a direction of greatest rate of increase of the function
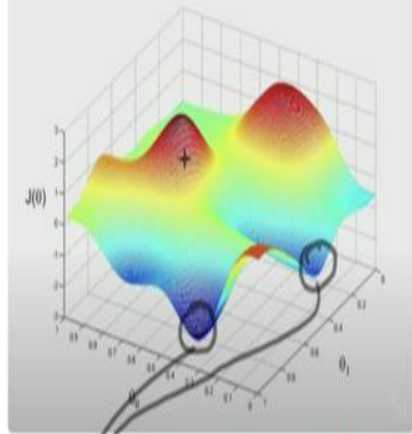
$$\nabla f = \left(\frac{\partial f}{\partial x}, \frac{\partial f}{\partial y} \right)$$

If the gradient vector at $(2,3)$ is $\nabla f = (4,5)$, it means:

- Moving in the direction where x increases by 4 units and y increases by 5 units will make you climb the hill the fastest.

$$X := X - \alpha \frac{\partial J(\theta)}{} \quad \text{Gradient descent for}$$

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JPMorgan Chase & Co.

Goutham N
Software Engineering Job Simulation

Certificate of Completion

October 6th, 2023

Over the period of October 2023, Goutham N has completed practical tasks in:

Interface with a stock price data feed
Use JPMorgan Chase & Co. frameworks and tools
Display data visually for traders
Bonus task: Open source contribution