Error in central derivate = $\frac{f'''(xi)}{3!}(\Delta x^2) + \ldots$

$f(x) = x^3 - 3x^2 + 3$

$f'(x) = 3x^2 - 6x$

$f''(x) = 6x - 6$

$f'''(x) = 6$

$\Rightarrow 0 = \frac{6}{3!}(0.1)^2 = 0.1^2 = 0.01$

higher derivate terms will be zero.

Flow diagram: