$$b\_{0}=f(x\_{0})$$

$$b\_{1}=f\left[x\_{1},x\_{0}\right]=\frac{f\left(x\_{1}\right)-f(x\_{0})}{x\_{1}-x\_{0}}$$

$$b\_{2}=f\left[x\_{2},x\_{1},x\_{0}\right]=\frac{f\left[x\_{2},x\_{1}\right]-f\left[x\_{1},x\_{0}\right]}{x\_{2}-x\_{0}}$$

$$b\_{2}=\frac{\frac{f\left(x\_{2}\right)-f(x\_{1})}{x\_{2}-x\_{1}}-\frac{f\left(x\_{1}\right)-f(x\_{0})}{x\_{1}-x\_{0}}}{x\_{2}-x\_{0}}$$

$$b\_{3}=f\left[x\_{3},x\_{2},x\_{1},x\_{0}\right]=\frac{f\left[x\_{3},x\_{2},x\_{1}\right]-f\left[x\_{2},x\_{1},x\_{0}\right]}{x\_{3}-x\_{0}}$$

$$b\_{3}=\frac{\frac{f\left[x\_{3},x\_{2}\right]-f\left[x\_{2},x\_{1}\right]}{x\_{3}-x\_{1}}-\frac{f\left[x\_{2},x\_{1}\right]-f\left[x\_{1},x\_{0}\right]}{x\_{2}-x\_{0}}}{x\_{3}-x\_{0}}$$

$$b\_{3}=\frac{\frac{\frac{f\left(x\_{3}\right)-f(x\_{2})}{x\_{3}-x\_{2}}-\frac{f\left(x\_{2}\right)-f(x\_{1})}{x\_{2}-x\_{1}}}{x\_{3}-x\_{1}}-\frac{\frac{f\left(x\_{2}\right)-f(x\_{1})}{x\_{2}-x\_{1}}-\frac{f\left(x\_{1}\right)-f(x\_{0})}{x\_{1}-x\_{0}}}{x\_{2}-x\_{0}}}{x\_{3}-x\_{0}}$$

$$b\_{0}=f(x\_{0})$$

$$b\_{1}=f\left[x\_{1},x\_{0}\right]=\frac{f\left(x\_{1}\right)-b\_{0}}{x\_{1}-x\_{0}}$$

$$b\_{2}=f\left[x\_{2},x\_{1},x\_{0}\right]=\frac{f\left[x\_{2},x\_{1}\right]-b\_{1}}{x\_{2}-x\_{0}}$$

$$b\_{2}=\frac{\frac{f\left(x\_{2}\right)-f(x\_{1})}{x\_{2}-x\_{1}}-b\_{1}}{x\_{2}-x\_{0}}$$

$$b\_{3}=f\left[x\_{3},x\_{2},x\_{1},x\_{0}\right]=\frac{f\left[x\_{3},x\_{2},x\_{1}\right]-b\_{2}}{x\_{3}-x\_{0}}$$

$$b\_{3}=\frac{\frac{f\left[x\_{3},x\_{2}\right]-f\left[x\_{2},x\_{1}\right]}{x\_{3}-x\_{1}}-b\_{2}}{x\_{3}-x\_{0}}$$

$$b\_{3}=\frac{\frac{\frac{f\left(x\_{3}\right)-f(x\_{2})}{x\_{3}-x\_{2}}-\frac{f\left(x\_{2}\right)-f(x\_{1})}{x\_{2}-x\_{1}}}{x\_{3}-x\_{1}}-b\_{2}}{x\_{3}-x\_{0}}$$

$$f\_{3}\left(x\right)=b\_{0}+b\_{1}\left(x-x\_{0}\right)+b\_{2}\left(x-x\_{0}\right)\left(x-x\_{1}\right)+b\_{3}\left(x-x\_{0}\right)\left(x-x\_{1}\right)\left(x-x\_{2}\right)$$