Lemma 0.0.1 (stopped processes in discrete time, p.26)**.**

- *Let $X = (X_n)_{n=0,\dots,N}$ be an $\mathcal{F}$-adapted process and τ be an $\mathcal{F}$-stopping time. Then the stopped process*

$$X^\tau := (X_{n\wedge\tau}) = X_n \mathbb{1}_{n<\tau} + X_\tau \mathbb{1}_{n\geq\tau}$$

is also $\mathcal{F}$-adapted.

- *Let $M = (M_n)_{n=0,\dots,N}$ be an $\mathcal{F}$-martingale process and τ be an $\mathcal{F}$-stopping time. Then the stopped process*

$$M^\tau := (M_{n\wedge\tau}) = M_n \mathbb{1}_{n<\tau} + M_\tau \mathbb{1}_{n\geq\tau}$$

is also an $\mathcal{F}$-martingale.