The ability to estimate the passage of time is critical for behavioral adaptation and survival. Our ability to determine speed and rates are intimately related to our capacity to evaluate intervals of time. Despite such importance, the mechanisms underlying this ability still needs to be elucidated. A natural question arises when one notices that neurons, basic components of brains, work in timescales in the order of milliseconds, while our brains can estimate intervals longer than hours, i.e. 4 orders of magnitude larger than their typical component timescales. Furthermore, the animal brains can estimate times that differ in 10 orders of magnitude. Many theories and computational models, ranging from psychology to physics have tried to account for how the brain produces time estimations. Structures of the brain like the prefrontal cortex (PFC) and striatum (STR) seem to be key areas involved in time estimation in the seconds-to-minutes range and constitute a pathway looping through the thalamus. But determining the specific mechanisms by which the long time intervals can be accumulated in terms of electrical activity is still unknown. I’m going to show some theoretical methods and experimental data that have been used to investigate how animals learn, estimate and reproduce time intervals.