Section 3: Week 7: Long Living Software

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# Long Lived Software Systems

## Background

The lifespan of a typical software package is several years to perhaps a decade. This introduces inefficiencies are several common problems need to be frequently rewritten. With each rewrite of the system there are obviously advantages such as the adoption of newer protocols and faster distributed technologies. An optimization must exist between these two scenarios where systems can leverage future technology without requiring extensive rework on legacy systems.

The Building Resource Adaptive Software Systems (DARPA BRASS) seeks to identify patterns and solutions that move the needle in this regard. They have proposed an initial goal of extending the supportable lifespan of certain systems over 100 years (DARPA Public Affairs, 2015).

Existing systems such as Mechanization of Contract Administration Services (MOCAS) have continued to operate since 1958, however this is not by choice. MOCAS oversees governmental contract totaling more than $1.3T and has become too mission critical to touch (Verma, 2017).

Similar systems of tomorrow need to be modular and decomposed into a Language Oriented Programming paradigm. Though a decoupling of the domain specific logic from the implementation it becomes possible to separate the ‘how’ from the ‘why.’ There also needs to exist methods for evolving legacy systems into modern technologies.