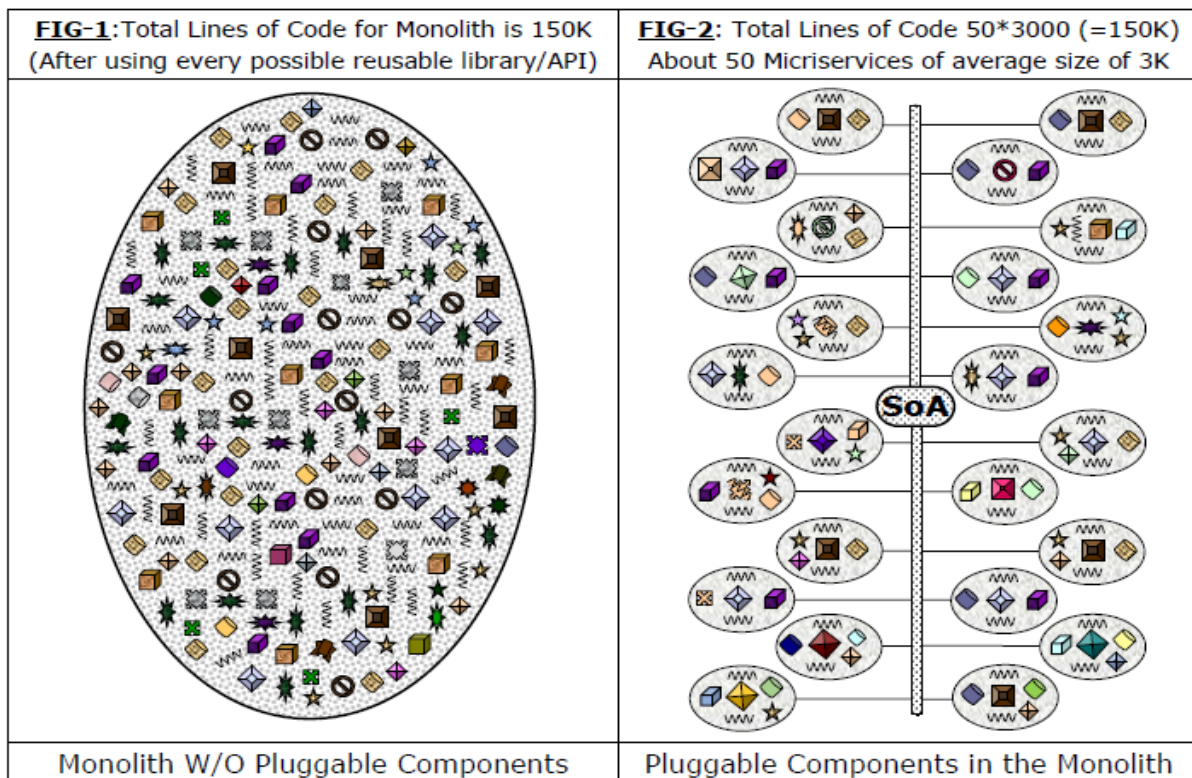


Superior “Service Access” to Each Component is Desirable

The designers of products such as automobile, airplanes, computers or large machines are obsessed with providing outstanding “service access” to components (i.e. very specific kind of parts that are assembled), which are prone to wear and tear and requires periodical maintenance. Service-access allow repair-shops to easily replace an old broken component, by repairing it or by a new component.



In case of computers, during 1980s and 1990s we used to extend the life of old computers by installing more powerful latest CPU, faster DRAM or bigger Hard drive etc. Personal-Computer (or PCs) were expensive in those days, so many people used to replace older Intel 386 processor by newer 486 CPU. In software, we could use “service access” to every component, because 80% of software engineering is changing existing code (of one or more components in FIG-2). If each software product is built as CBP as illustrated in FIG-2, every component can be easily replaced by a better component (i.e. by redesigning it).

For example, Certain kind of parts (e.g. tires, break-pads, oil-filter or sparkplugs) need to be replaced periodically (e.g. every 10,000, 25,000 or 50,000 miles). So, it is highly desirable to minimise the cost and time at mechanic-shop to replaces such components, which needs to be serviced periodically (e.g. as per recommended maintenance guidelines). How would consumers feel, if it takes two-days to replace sparkplugs or oil-filter. I read somewhere that, replacing sparkplugs in one 1940s Ford model, needed removing its engine. Those sparkplugs were put in a hard to reach please, that they cannot be removed without taking out the engine.

Even today, certain parts only cost US\$10, but costs US\$500 and 10-man-hours to replace it. Such parts are designed to highest quality standards to work for lifetime of the product. But a small number (e.g. one in hundred thousand) of such components fail because of human errors or quality control problems (e.g. using of poor-quality ingredient metals, alloys, or poor installation at assembly line). No one wants to waste weekends at repair-shop for such unpredictable breakdowns. In case of software, every component needs redesign, so can use best service access.

Today, each large software application or product is built as in FIG-1, by merging code for many self-contained modules. In case of real-CBE, each software product is built as a CBP, which is built by plugging-in multiple real-components as in FIG-2. The code for each self-contained module (of a CBP) is implemented as pluggable software component and plugged-in (as in FIG-2), so it can be replaced in few minutes. But, today the code for each self-contained module is merged into the code of the product (see FIG-1), so it takes many days or even weeks to replace the code for same self-contained module and to test the whole product, since the product is built as FIG-1 (i.e. by merging code for multiple self-contained modules).