

## *Extracting fresh capability from legacy codes for improved and wider uses.*

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### The Situation

The customer had a legacy code set for retirement. Developed in the 1950s and 1960s, it was the logical thing to do. However, there was still a sizable internal company user-base, even though a replacement program already existed.

It was time to move on from this old program. The question was how to go about it.

### IES Highlights

- Developed a C and Python wrapper for the Fortran based library, allowing the client to use the legacy empirical relationships in a wide variety of programs, not just the one originally intended
- Assisted the client to modify the source code for one of their major proprietary design programs to run on the Linux platform
- Substantially decreased the overall run-time and helped the client better understand how the code was reading data

### The Solutions

IES first analyzed the legacy code and identified the key capabilities that the existing user base highlighted and were not part of the replacement program.

Then, we worked with the client to rate these items in order of priority and drafted a plan to capture these capabilities. This enabled us to start with the highest priority items while at the same time ensuring that all the items would be included.

For one of the needed capabilities, IES developed a library with the necessary empirical data taken from the legacy code. We then implemented the necessary functions to work with that library in the replacement program.

As an added scope, IES wrapped the library such that it could be linked with C or Fortran and created a native Python wrapper to utilize the library directly. In addition to adding the capability to the original replacement program, this allowed the library to be utilized in several different programs and optimization projects.

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