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Connectivity Layer Framework – Sandbox Application

Nitesh Goyal

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Student's Name: Nitesh Goyal
Student's Reg. No: 160911282
Student's email ID: ngoyal111@gmail.com

Guide's Name: Veena K. M.
Guide's email ID: veena.gv@manipal.edu

Project Abstract

Connectivity Layer Framework (CLF) is an efficient new generation external connectivity platform which acts as a bridge between 1A (Amadeus) and external providers. It runs on the concept of Finite State Machine of Theory of Computation. It is used by many teams at Amadeus to contact external providers. However, the framework is a heavy library with lots of dependencies and the objective of the project is to create standalone software powered by a new lighter library which enables new or prospective clients to not only test their Finite State Machine configurations but also save time for deployment.

The methodology adopted for the project comes in two parts. The FIRST PART is to create a standalone sandbox application that can act as a development and testing environment. The technology stack and tools used for this part are Angular, Flask, Python, Docker, HTML, CSS, JavaScript, jQuery, uWSGI and Nginx. The SECOND PART of the solution is to create a new C++ library called CLF Core. This library will be a lighter version of CLF and will be created by removing dependencies of CLF on other frameworks, individual backends and middleware libraries at Amadeus. We will also make a wrapper to call this C++ library from Python backend. The methodology to remove each dependency will be unique and be decided depending upon the type of dependency and feature. The technology and tools used in this part are C++, SWIG, CMake, Amadeus' internal build system, and knowledge of operating systems and scripting.

The project will serve as an important tool in the existing arsenal of tools at Amadeus. The most important outcome is that it will shorten the deployment time of configurations manifold. It will act as an important development and testing environment for many teams who use Connectivity Layer Framework to contact external providers to develop and test their configurations and parameters. Another advantage of the tool is that it will ease things for future developers. The new C++ library that will be developed, along with the wrapper will enable any future developers to use this library without knowing about CLF. The tool will also prove helpful in integrating new teams into the CLF environment more easily than before. This will prove to be a huge win for the CLF community at Amadeus.

[Software and its Engineering]: Software creation and management – Designing Software, Software Verification and Validation, Software Development Techniques, Software Post Development Issues

[Hardware]: Integrated Circuits – Logic Circuit – Finite State Machine (Note: FSM was used as a computational model for a new library, no hardware/IC were used)

[Information Systems] – World Wide Web – Web Applications