Caterpillar System Execution Panel
Front-end application to execute business processes on the blockchain

What

Caterpillar is a Business Process Management System (BPMS) prototype that runs on top of Ethereum blockchain, relying on the translation of process models into smart contracts. More specifically, Caterpillar accepts as input a process model specified in BPMN and generates a set of smart contracts that captures the underlying behaviour. Caterpillar provides a back-end application implemented using Node JS and Express JS, exposing its functionalities through a REST API.

The main goal of this project is to implement a front-end application using React JS to interact with the Caterpillar’s REST API, enabling end-users to model, deploy, execute and monitor the execution of business processes.

Why and for whom

Nowadays, organizations are pressed to collaborate to take advantage of their complementary capabilities and to provide best-of-breed products and services to their customers. To do so, organizations need to manage business processes that span beyond their organizational boundaries. One of the main roadblocks to implementing such collaborative business processes is the lack of trust between the participants.

In the past decade, blockchain technology has emerged as a generic solution to enable a set of parties to collaborate in the absence of mutual trust. However, implementing business processes using the low-level primitives provided by blockchain platforms is cumbersome and error-prone. Also, the current implementation of Caterpillar requires a new graphical interface that allows business analysts without technical knowledge to interact with the system. In other words, a new user interface will provide convenient abstractions for the rapid development of process-oriented applications. Finally, the system needs proper documentation, so other developers can easily use the REST API.

Expected Outcome

- Implementation of a front-end application using React JS to interact with the Caterpillar’s REST API, to offer an intuitive and graphical interface for end-users.
- Implementation of some minimal changes on the REST API, if required, to enhance the front-end application. Note that you will not be asked to develop smart contracts, so no blockchain knowledge is required, i.e., you will implement only in Typescript.
- Documentation of the system, including the existing operations exposed through the Caterpillar’s REST API using Swagger.

Conditions

The code will be open source and shared in the GitHub repository of Caterpillar.

Contacts

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