



Research / Coding Challenge: Decentralized Process Management (Master Thesis)

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# Blockchain-based solution for executing BMPN Models as Smart Contracts

(Research: Signavio Process Manager and Workflow Accelerator Integration )

Blockchain has pulled in a wide scope of interests from new companies, enterprises, and governments. So Signavio Process Manager and Workflow Accelerator could be incorporated with Blockchain Technology for executing BPMN models as Smart Contracts (SC). Business Process Management System (BPMS) could be implemented on the top of the Ethereum Blockchain and business processes will be maintained on it.

## Blockchain-based BPM (Architecture Diagram)

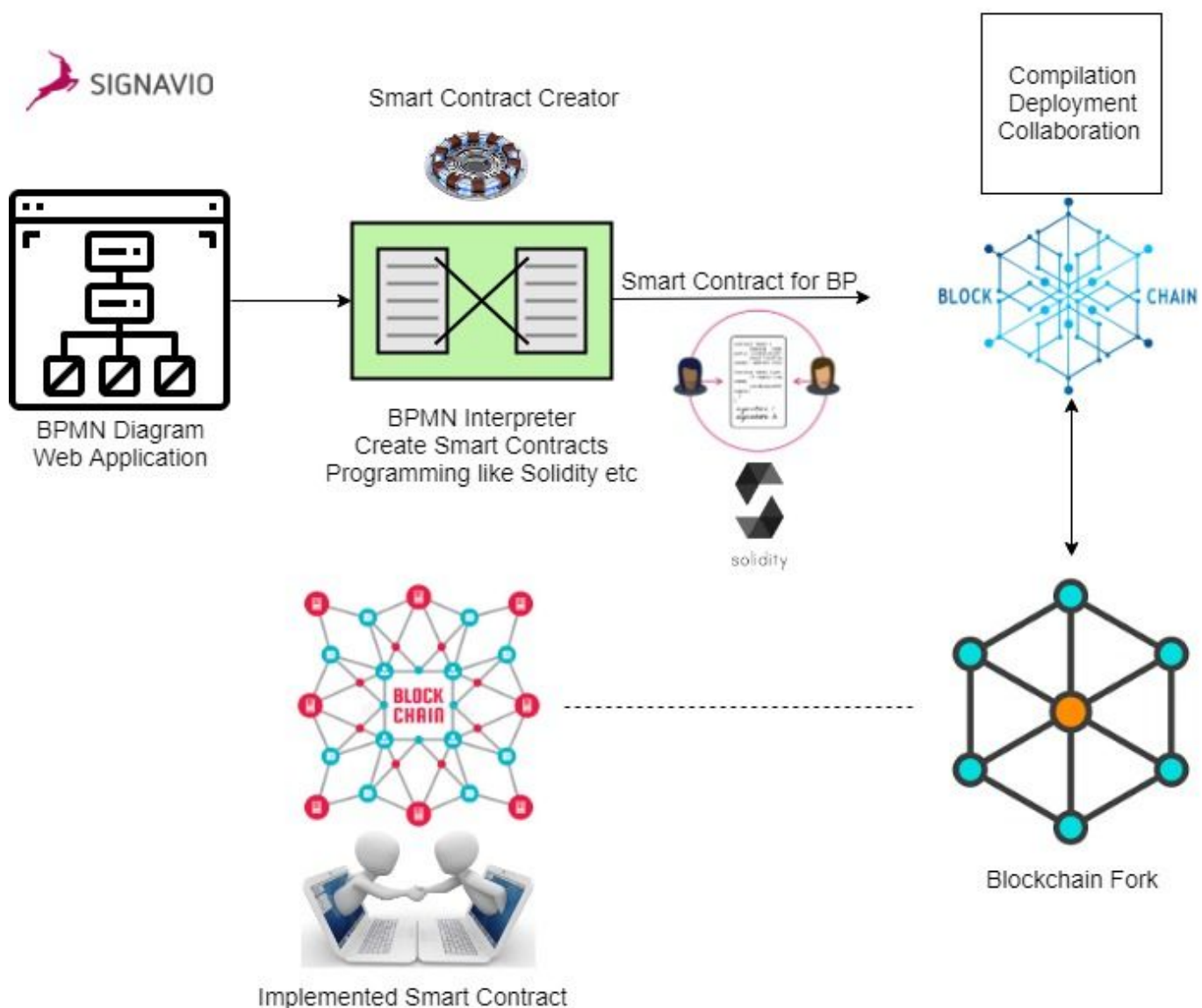


Figure 1. Architecture of Signavio BPMN Model as a Smart Contract.

Figure. 1 represents the architecture of Signavio BPMN model as a smart contract, which comprises of a Business Process Model and Notation (BPMN), and a smart contract creator. The BPMN is displayed as a Signavio web application for clients to generate business process models. The smart contract creator comprises of a BPMN interpreter, which generates smart contracts by using a programming language like Solidity and so forth from outlines. The blockchain trigger communicated with the blockchain fork and handles the aggregation, organization just as a collaboration with smart contracts.

## Node.js Programming task

Github: [https://github.com/Kumarrajwani/Signavio\\_Challenge](https://github.com/Kumarrajwani/Signavio_Challenge)

### *How to configure and run in the local machine?*

Step#1: Install and Setup an environment for Node.js

- Download the latest version of Node.js
- Install an archive file from <https://nodejs.org/en/>

Step#2: Install selenium-webdriver package

- npm install selenium-webdriver (Command for windows)

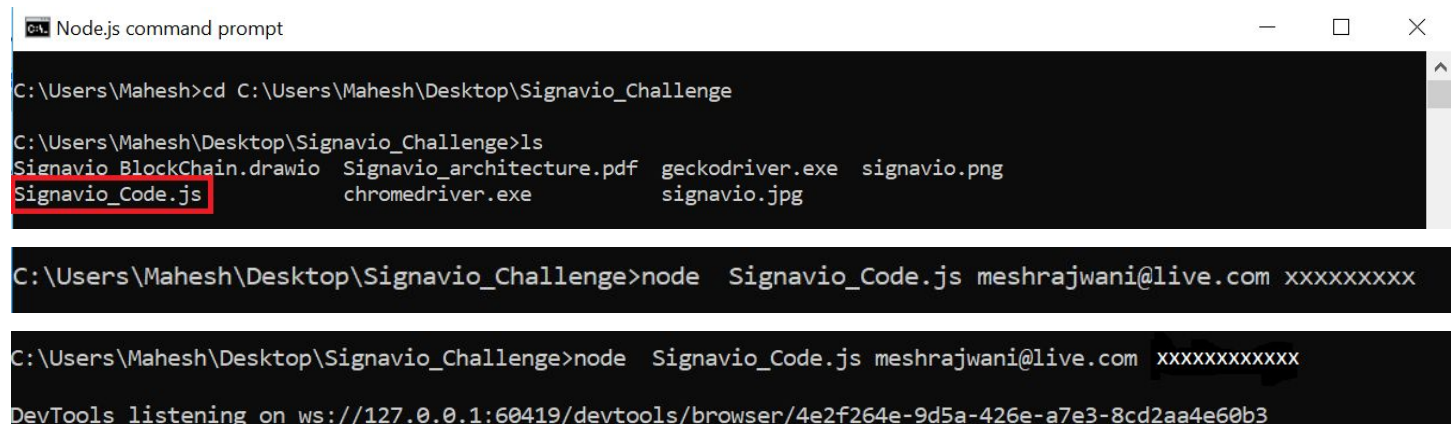
Step#3: Install the driver for any browser like Chrome, Firefox, etc.

Step#4: Open Node.js command prompt

Step#5: Download the script and go in the directory, where you have stored the script


Step#6: **Command line arguments:** node script.js your username/email address password

### Output



```
Node.js command prompt
C:\Users\Mahesh>cd C:\Users\Mahesh\Desktop\Signavio_Challenge
C:\Users\Mahesh\Desktop\Signavio_Challenge>ls
Signavio_BlockChain.drawio  Signavio_architecture.pdf  geckodriver.exe  signavio.png
Signavio_Code.js            chromedriver.exe           signavio.jpg
C:\Users\Mahesh\Desktop\Signavio_Challenge>node Signavio_Code.js meshrajwani@live.com xxxxxxxxx
C:\Users\Mahesh\Desktop\Signavio_Challenge>node Signavio_Code.js meshrajwani@live.com xxxxxxxxxxxx
DevTools listening on ws://127.0.0.1:60419/devtools/browser/4e2f264e-9d5a-426e-a7e3-8cd2aa4e60b3
```

Chrome is being controlled by automated test software.

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Mahesh Kumar

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