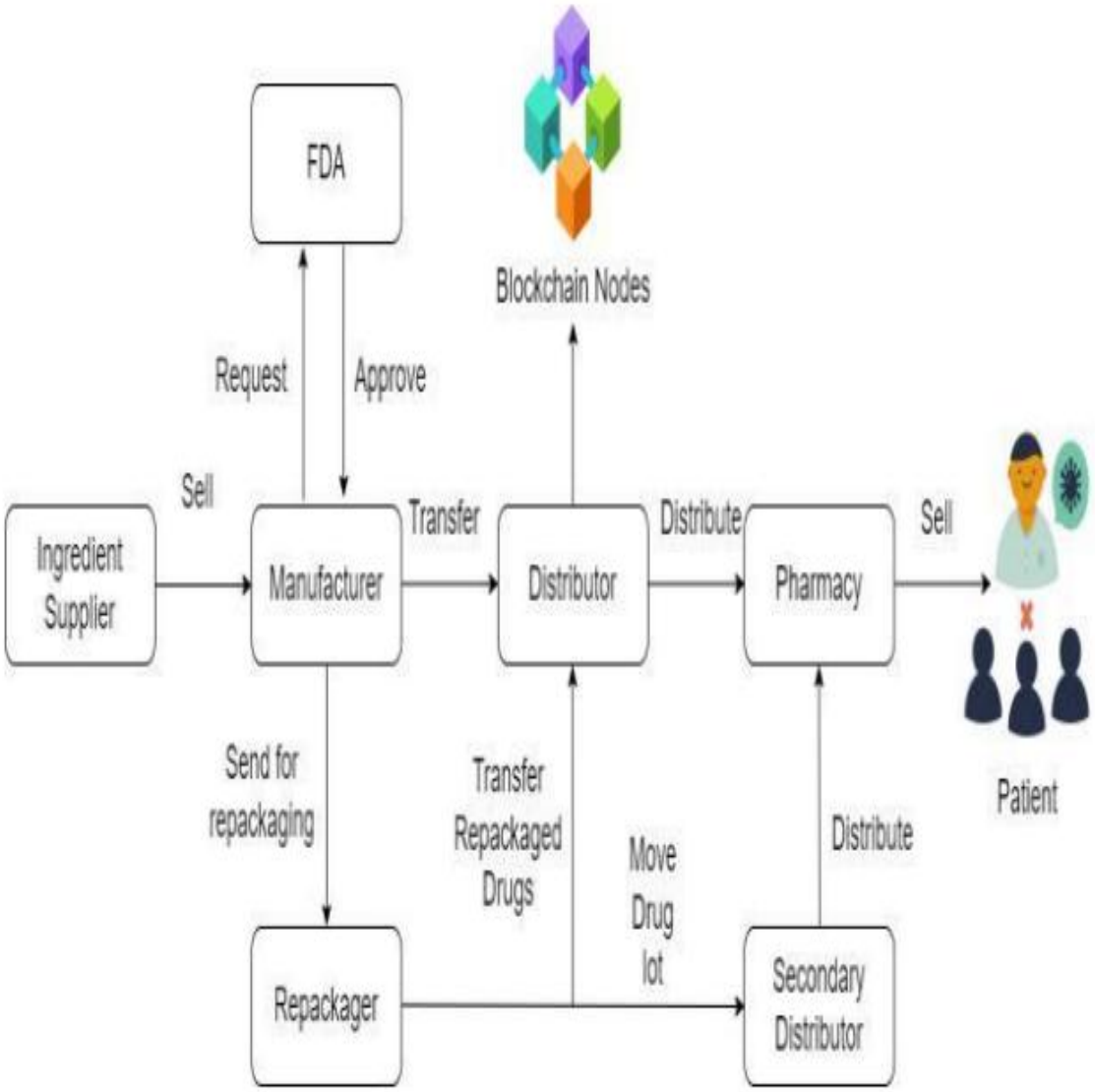
DRUG TRACEABILITY:

The "Drug Traceability Smart Contract on Ethereum Block chain" is a pioneering solution poised to revolutionist pharmaceutical supply chain management. In response to the urgent need for enhanced transparency and security in drug tracking, this smart contract leverages block chain technology. It establishes a decentralized network of nodes, underpinned by non-repudiation and robust security features, to ensure the verifiable traceability of pharmaceuticals. Traditional drug management systems often struggle with issues of authenticity and accountability, making them susceptible to counterfeit drugs and inefficiencies. In contrast, this Ethereum-based smart contract offers a informativeness approach. It enables stakeholders to monitor the entire life cycle of drugs, from production to distribution and ultimately to the end-user, with unparalleled transparency and trust. This innovation promises to usher in a new era of pharmaceutical traceability, where each drug's journey can be traced immutably on the block chain. By doing so, it not only safeguards patient health but also protects the integrity of the pharmaceutical industry. This article explores the architecture and capabilities of this smart contract, shedding light on how it can instill confidence in drug tracking and contribute to a more secure and accountable pharmaceutical landscape.

A supply chain is defined as the process of acquiring a product from its manufacturer and delivering it to the end-user (customer). A supply chain can be for any product, such as an automobile, clothing, medical supply chain, etc.Like other supply chains, the health care supply chain has many stakeholders, starting with the raw material supplier and progressing to the manufacturer, then a wholesaler and distributor, and finally the pharmacist and the customer (patient) . When we examine health care supply chains, we see that they have a large and complex structure and numerous stakeholders. Traceability, transparency, dependability, cost efficiency, integrity, and sustainability are all lacking in earlier versions of supply chains that were not as digitally advanced. There is no proper method for tracking the history of medicine transitions and ownership from their origin to the patients. Due to a lack of traceability and transparency, there is uncertainty about the medicine’s originality and security, which leads to issues related to drug counterfeiting and falsification. In addition, the lack of these critical features leads to black-marketing of medicines, the intermediary falsifies the actual drugs and sells the irrelevant drugs at a lower price. These activities do not stop at lowering the prices of fake products; instead, black marketers raise the prices of original products to such an unpayable level that people in need are forced to switch to them. These actions not only cause a slew of health problems for the people, but they also result in a large number of casualties at times, which can cause panic among the people in times such as the Covid-19 pandemic.

TECHNICAL ARCHITECTURE:



TECHNICAL STACK: