



School: ..... Campus: .....

Academic Year: ..... Subject Name: ..... Subject Code: .....

Semester: ..... Program: ..... Branch: ..... Specialization: .....

Date: .....

## **Applied and Action Learning**

(Learning by Doing and Discovery)

**Name of the Experiment :** Chains Beyond Ethereum – Platform Comparisons

### \* **Coding Phase: Pseudo Code / Flow Chart / Algorithm**

#### **ALGORITHM:**

- 1.Start
- 2.Research and identify popular blockchain platforms apart from Ethereum.
- 3.Choose at least three platforms (e.g., Solana, Polygon, Avalanche).
- 4.Visit their official documentation websites.
- 5.Analyze key technical aspects — consensus mechanism, transaction speed, programming language, and interoperability.
- 6.Compare each platform with Ethereum in terms of scalability, gas fees, and ecosystem support.
- 7.Record findings in a tabular format.
- 8.Conclude which platforms are most suited for specific use cases.
- 9.End

### \* **Software used**

- 1.Brave Browser
- 2.Official blockchain documentation sites
- 3.Remix IDE
- 4.MetaMask wallet

## \* Testing Phase: Compilation of Code (error detection)

Explore Ethereum:

Visit <https://ethereum.org>

Note features like EVM support, Solidity language, Proof of Stake, and average transaction speed (12–15 seconds).

The screenshot shows the Ethereum Whitepaper page. At the top, there's a navigation bar with links for Learn, Use, Build, Participate, Research, a search bar, and language selection (Languages EN). Below the header, there's a breadcrumb trail: HOME / WHITEPAPER. A note says "Page last updated: October 13, 2025". The main content is titled "Ethereum Whitepaper". It includes a note about its publication in 2014 by Vitalik Buterin, the founder of Ethereum. It also mentions that while several years old, it continues to serve as a useful reference and an accurate representation of Ethereum and its vision. A note for researchers and academics seeking a historical or canonical version of the whitepaper from December 2014 should use this PDF. To the right, there's a "ON THIS PAGE" sidebar with a table of contents listing topics such as A Next-Generation Smart Contract and Decentralized Application Platform, Introduction to Bitcoin and Existing Concepts, History, Bitcoin As A State Transition System, Mining, Merkle Trees, Alternative Blockchain Applications, Scripting, Ethereum, Ethereum Accounts, Messages and Transactions, Messages, Ethereum State Transition Function, and Code Execution.

Explore Polygon (Matic):

-Visit <https://polygon.technology>

-Identify how Polygon acts as a Layer 2 scaling solution for Ethereum with low fees and fast confirmations.

The screenshot shows the Polygon homepage. The background is dark with colorful, glowing streaks of light. In the center, the text "Money shouldn't wait for Mondays" is displayed in a large, bold, white font. Below this, a smaller line of text reads: "Money rails *actually* built for the Internet. Move billions in assets and stablecoins, at scale. Powered by POL." At the bottom, there are two buttons: "BUILD →" and "USE POLYGON →". The top navigation bar includes links for polygon, Solutions, Developers, Community, Use Cases, Blog, Company, Use Polygon, Stake POL, and Polygon DEX.

Explore Solana:

Visit <https://solana.com>

Learn about Proof of History (PoH) and Rust-based programming, achieving high throughput (65,000 TPS).

The screenshot shows the Solana case studies page. The main headline is "Designed for real world use." At the top right is a button "GO TO CASE STUDIES →". Below, there are three featured case studies: "XP" (Case Study), "Boba Guys" (Case Study), and "Homebase" (Case Study). Each card has a small video icon and a "VIDEO" label. The "XP" card notes "XP aims to save consumers from high event ticket fees using Solana." The "Boba Guys" card notes "Boba Guys used a Solana-powered loyalty program to increase monthly sales by 67%." The "Homebase" card notes "Homebase used the Solana blockchain to successfully tokenized a single-family rental property." At the bottom right is a button "Ask AI" with a small AI icon. The footer includes a link "https://solana.com/news/case-study-xp" and a "Page No....." placeholder.

## \* Implementation Phase: Final Output (no error)

Applied and Action Learning

Result Table:

Feature / Platform	Ethereum	Polygon (Matic)	Solana	Avalanche
<b>Consensus</b>	Proof of Stake	Proof of Stake (Layer 2)	Proof of History + PoS	Avalanche Consensus
<b>Speed (TPS)</b>	15-30	7,000+	65,000+	4,500+
<b>Gas Fees</b>	High	Very Low	Very Low	Low
Smart Contract Language	Solidity	Solidity	Rust	Solidity
Interoperability	EVM-based	EVM-compatible	Non-EVM	EVM-compatible
<b>Ecosystem</b>	Mature	Expanding	Fast-growing	Fast-growing

## \* Observations

- Identified key differences between Ethereum and newer blockchain platforms.
- Learned how consensus mechanisms and scalability impact DApp performance and cost.

## ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10		
Planning and Execution/ Practical Simulation/ Programming	10		
Result and Interpretation	10		
Record of Applied and Action Learning	10		
Viva	10		
<b>Total</b>	<b>50</b>		

*Signature of the Student:*

Name :

Regn. No. :

Page No.....

*Signature of the Faculty:*

\*As applicable according to the experiment.  
Two sheets per experiment (10-20) to be used.