

# SPPU-BE-COMP-CONTENT - KSKA Git

BT

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## ASSIGNMENT-1

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Features:

- Open source, decentralised, supports smart contracts & dapps.
- Executed code on EVM using Ether
- Used PoS consensus gas fee system, strong developer support

Networks:

- Mainnet: Real Eth, live apps, secure & public.
- Testnet: Fake Eth, safe testing
- Private: Restricted, customizable used in enterprises

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Smart Contract:

- Self executing blockchain program.
- ex: Rental Agreement → unlocks house if rent paid in ETH.
- Benefits: Trustless, transparent, automated & no intermediaries.

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## Gas in Ethereum

- Fee for computation / storage
- $\text{Gas fee} = \text{gas used} \times \text{gas price}$
- prevents misuse (loops), orders transactions, incentivizes validators.

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Examples: Whisper, Status, Waku, Matrix.

## Whisper

- Messaging protocol in Ethereum.
- Enable secure, private decentralised communication b/w dapps
- Works with ethereum (computation) + Swarm (storage)
- Drawback: heavy resource use → replaced by Waku.

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## Types:

1. Token contracts (ERC-20/721): Define tokens & NFT's
2. DeFi contracts: Enable trading, lending, staking (eg. Uniswap)

## Deployment Steps:

1. Write code in Solidity
2. compile using Remix / Hardhat / Truffle.
3. Deploy on network (Mainnet / Testnet)
4. Pay gas fee.
5. Interact via wallet / dApp UI