IOTA for Internet of Things
Payal Kothari
Advisor: Dr. Rajendra K. Raj
Rochester Institute of Technology

Motivation
• IOTA is a cryptocurrency which uses Tangle instead of the traditional Blockchain technique.
• Tangle overcomes some of the limitations of Blockchain.
• Main advantages are: Scalability, decentralization and fee-less transactions, no need of massive amount of processing power.

Goals
• Study how IOTA and Tangle works.
• Demonstrate the advantages of IOTA and how it is good for Internet of Things.

Introduction
• Tangle is a Directed Acyclic Graph (DAG).
• Every node follows three steps: 1) Signing 2) Tip Selection 3) Proof of Work

Design & Implementation
Full Node
• Created a VPS on Google Cloud Platform.
• Used IRI (IOTA reference implementation) playbook to start a full node.
• Running a full node in IOTA main network using the VPS.
• Showing graphs on Grafana.

Wallet to full node connection
• Instead of using light wallet, connected wallet to own full node.

IOTA Python library usage
• Code demonstrates how to access wallet information.
• How to transfer IOTAs from one node to another.

Results

Analysis
• The percentage of avg. confirmation rate proves that the scalability of the IOTA network is very high.
• No fee gets deducted in transactions.
• Decentralized network.
• Normal computer takes max 2 mins to complete proof of work, so no massive amount of processing power required.

Future Work
• This is a big community projects. It is in testing phase, so any contribution to the IOTA foundation code or to the third party tools is valuable.

References