

TITLE OF THE PROJECT:

PHYSICAL LAYER SECURITY FOR INTERNET OF THINGS: AUTHENTICATION AND KEY GENERATION

PROJECT MEMBER'S NAMES:

1. NARAYANAN B – 2016105053
2. VENKAT KRISHNAN B K J – 2016105077
3. ASHOK KUMAR M – 2016105513

GUIDE NAME	SIGNATURE
MRS. N. VIJAYA	

OBJECTIVE:

To overcome the difficulties of current cryptographic key exchange schemes on IoT devices and to provide a less complex yet secure authentication system for the IoT devices.

PROBLEM STATEMENT:

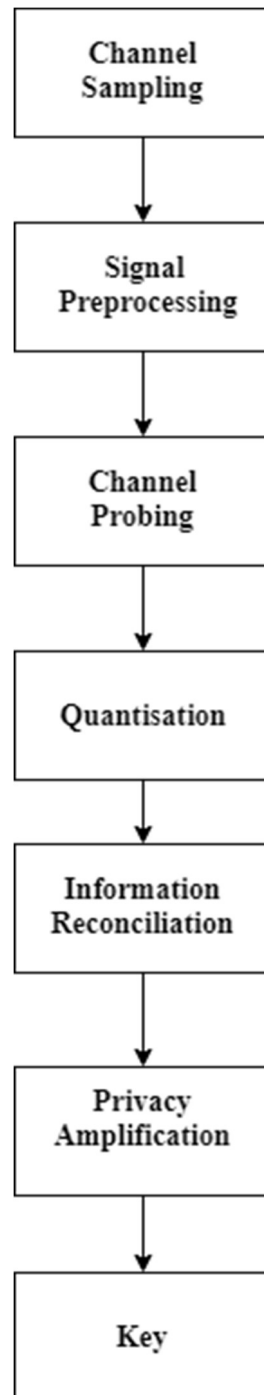
The IoT provides transparent and seamless incorporation of heterogeneous and different end systems. The connected devices will spread highly sensitive personal data. Sending this type of data represents a serious risk for people's privacy, since malicious interests could lead to an illegitimate use of personal information. Although the cryptographic schemes such as ECDH have been efficient in protecting modern communication and computer networks, their applications in IoT have been challenged. This is because conventional schemes are based on complex mathematical problems and protocols. These schemes work well for devices having powerful capabilities, such as smartphones. There is a large amount of IoT devices that are of low cost, small size, and battery-powered. These lightweight devices may not be able to support computationally complex algorithms needed to perform the complex cryptography. Hence, a new system is required which is secure but at the same time less complex so that it can be supported by these lightweight IoT devices.

TOOLS REQUIRED:

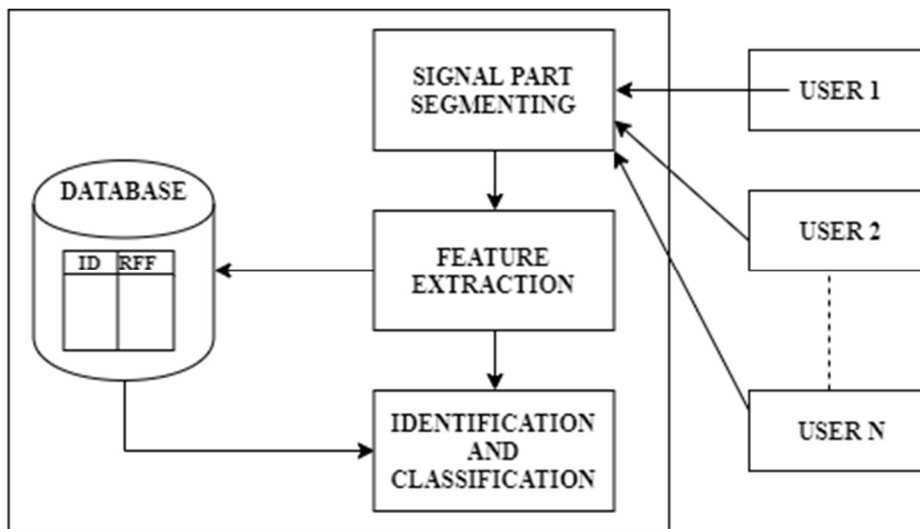
1. Matlab
2. Raspberry Pi

FLOWCHART:

KEY EXCHANGE :



AUTHENTICATION USING RFF:



STIME FRAME CHART:

TIME	WORK SCHEDULE
Week 1	Problem Analysis
Week 2	Study and Analysis of existing systems and their disadvantages.
Week 3	Working on the proposed schematic for key exchange.
Week 4,5	Simulation for key exchange.
Week 6	Completion of key exchange.
Week 7,8	Working on the proposed schematic for authentication.
Week 9,10	Simulation for key exchange.
Week 11,12,13	Integration between key exchange and authentication.
Week 14	Preparation of report.
Week 15	Final Review.

REFERENCE:

1. **Physical Layer Security for the Internet of Things** by Junqing Zhang, Sekhar Rajendran, Zhi Sun, Member, IEEE, Roger Woods, Senior Member, IEEE, and Lajos Hanzo, Fellow, IEEE. Published in: IEEE Wireless Communications (Volume: 26 , Issue: 5 , October 2019)
<https://ieeexplore.ieee.org/document/8715341>