**PROGRAM CODE -2**

**MQTT TOPIC CONFIGURATION USING THE DEFINED TOPICS**

mqtt:

  broker: "172.16.11.10"

  port: 1883

Configuring MQTT node

topics:

    phil/grid/frequency/reference:

      ros\_topic: "/ros2mqtt/grid/frequency/reference"

      qos: 2

    phil/grid/frequency/measured:

      ros\_topic: "/ros2mqtt/grid/frequency/measured"

      qos: 2

    phil/grid/voltage/phase1:

      ros\_topic: "/ros2mqtt/grid/voltage/phase1"

      qos: 1

    phil/supercap/mode:

      ros\_topic: "/ros2mqtt/supercap/mode"

      qos: 0

Defining the Topics based on the QoS levels

    phil/supercap/voltage/phase1:

      ros\_topic: "/ros2mqtt/supercap/voltage/phase1"

      qos: 1

    phil/battery/mode:

      ros\_topic: "/ros2mqtt/battery/mode"

      qos: 0

    phil/battery/voltage/phase1:

      ros\_topic: "/ros2mqtt/battery/voltage/phase1"

      qos: 1

    phil/battery/power/active:

      ros\_topic: "/ros2mqtt/battery/power/active"

      qos: 1

    phil/fuelcell/mode:

      ros\_topic: "/ros2mqtt/fuelcell/mode"

      qos: 0

    phil/fuelcell/voltage/phase1:

      ros\_topic: "/ros2mqtt/fuelcell/voltage/phase1"

      qos: 1

    phil/fuelcell/power/active:

      ros\_topic: "/ros2mqtt/fuelcell/power/active"

      qos: 1

    phil/component/status:

Defining the Topics based on the QoS levels

      ros\_topic: "/ros2mqtt/component/status"

      qos: 2

    phil/component/logs:

      ros\_topic: "/ros2mqtt/component/logs"

      qos: 0

    phil/alert/grid\_failure:

      ros\_topic: "/ros2mqtt/alert/grid\_failure"

      qos: 2

    phil/connectivity/status:

      ros\_topic: "/ros2mqtt/connectivity/status"

      qos: 0

udp:

  port: 7000

  modules:

    grid:

      source\_ip: "172.16.11.10"

      destination\_ips:

        - "172.16.11.11"

        - "172.16.11.12"

        - "172.16.11.9"

    supercapacitor:

      source\_ip: "172.16.11.11"

      destination\_ips:

        - "172.16.11.10"

Defining the UDP data Source and Destinations

        - "172.16.11.12"

        - "172.16.11.9"

    battery:

      source\_ip: "172.16.11.12"

      destination\_ips:

        - "172.16.11.10"

        - "172.16.11.11"

        - "172.16.11.9"

    fuelcell:

      source\_ip: "172.16.11.9"

      destination\_ips:

        - "172.16.11.10"

        - "172.16.11.11"

        - "172.16.11.9"