The RFM69HCW transmits in the ISM (Industry Scientific and Medical), a set of frequencies set aside for low-power, short-range, license-free radios. The RFM69HCW is capable of transmitting at up to 100 mW and up to 300 kb/s. you should be able to get a solid link for hundreds of meters. Indoors we've seen it work for over 50 meters through multiple walls.

Chirp spread spectrum (CSS) modulation. LoRa uses three bandwidths: 125kHz, 250kHz and 500kHz. The chirp uses the entire bandwidth. The spread factor determines the data rate and dictates the sensitivity of a radio. spread factors from 7 to 12. SF7 is the shortest time on air, SF12 will be the longest. Each step up in spreading factor doubles the time on air to transmit the same amount of data.

The data collected at LoRa nodes are routed to the gateway by using Mesh Networking Technology. In Mesh Networking Technology firstly an Arduino sketch set the node's ID in EEPROM so that every node can have the same source code (without hard-coding the node ID). NodeId for node is set in code

LoRaMesh sketch is then run that attempts to talk to all other nodes in the mesh. Each node sends its routing information to every other node. The process of sending data and receiving acknowledgements lets a node determine which nodes it can successfully communicate with directly. This is how each node builds up its routing table.

Gateway ESP8266 Arduino sketch that talks to a connected LoRa node via Serial (node number 1 in the mesh) and publishes the combined JSON format payload to the cloud server at fixed intervals set by user

The JSON payload is routed to Django server using MobileIP protocol(2-8Ghz, 5-20Mhz b/w, 20Mbps data rate, multicarrier CDMA or TDMA access, packet switching)[ https://nootropicdesign.com/projectlab/2018/10/20/lora-mesh-networking/]