ADSL (above 25kHz)
DTMF (697 -1477Hz)
k dial tone 350Hz 440Hz ->tells us when the number is coming
busy tone ->400Hz 0.375s on-off period
tone dialing mechanisms
wire->ring and tip (signal +ground) (0-50V)
—> solution would be to use a toroid under the form of a Rogowski coil.
-integrator to convert ac current to proportional voltage (because initially it is proportional to the rate of change and not the current)
-filter (filter out everything above and below dual tones including the upstream and downstream ADSL frequency range)-> bandpass from 200Hz to 2kHz
-gain stage (if necessary)
-ADC (microcontroller)
-Goertzel algorithm(digital filter)-> recognises the individual DTMF tones
-visual output (Matlab or python ?) -> sequence of numbers Real time