

Project Design Phase- IITechnologyStack(Architecture&Stack)

TeamID

PNT2022TMID30444

ProjectName

Project-
GasLeakageMonitoringandAlertingSy
stem

Technicalarchitecture:

Figure:GasLeakageMonitoringandAlertingSystem

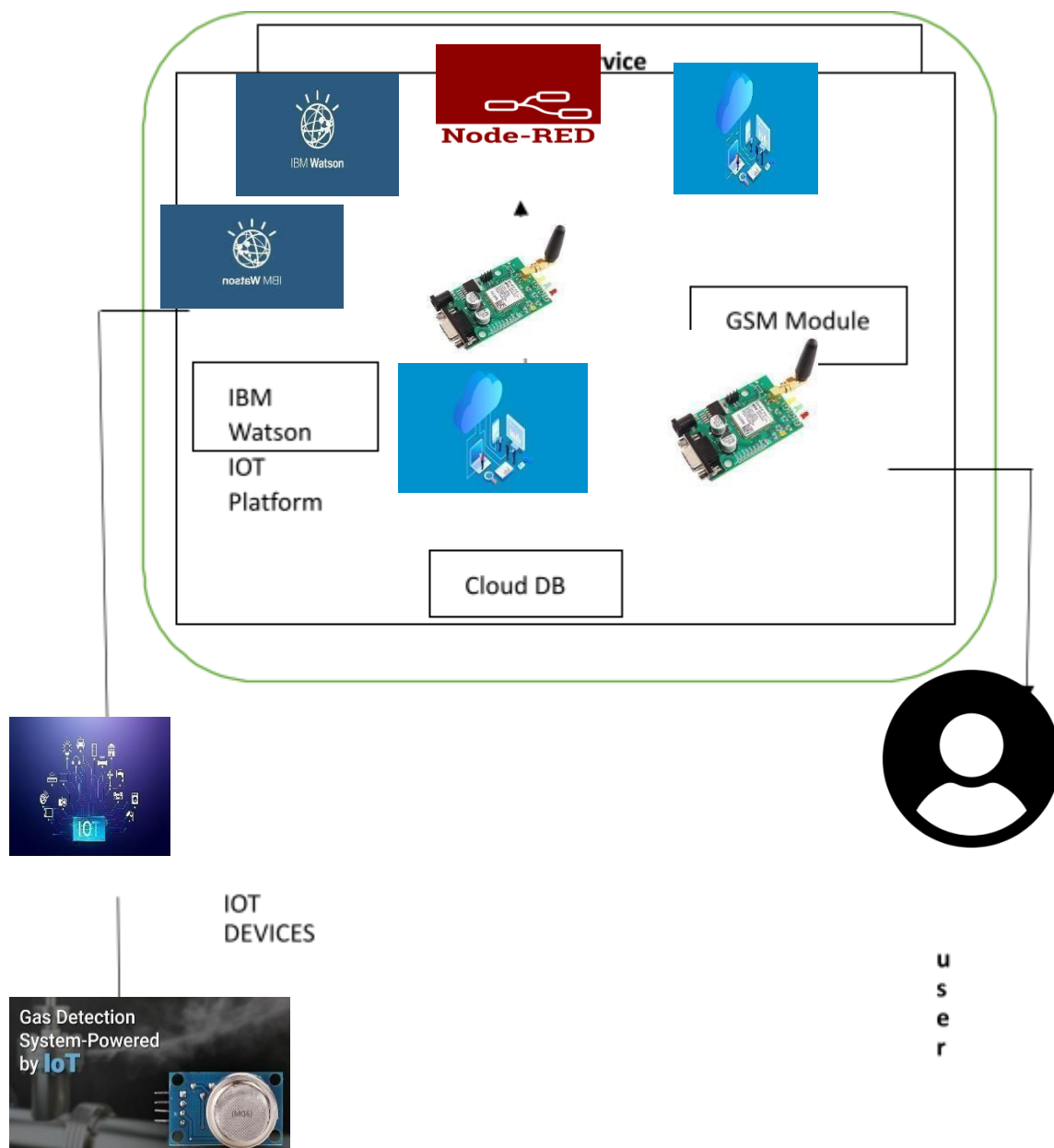


Table-1:Components&Technologies:

S.No	Component	Description	Technology
1.	UserInterface	Userhastoregisterandwecanabl e to view the other device.ex: using web UI, mobile appetc.,	HTML,CSS,JavaScript
2.	IOT Application Logic-1	Owner'sdeviceshould be connected to thesystem	Python
3.	IOTApplication Logic-2	Owner'sdeviceshouldbeinon condition	IBMWatsonSTTservice
4.	IOT Application Logic-3	Ifgasleakageisdetectedthe notificationmessageissendtothe owner	IBM WatsonAssistant
5.	Database	Datatypeacanbeanyformsuchastext, Userdefinedblobofdatasentfromclo udIOTcoredevice etc.,	SQLite,InFluxDB
6.	FileStorage	File with be labelled with whattheycontainandhowlongthe yshouldbekept	IBM Block StorageorLocalFiles ystem
7.	ExternalAPI-1	PurposeofExternalAPIusedinth e device is to use the internetforcommunicatingand conducting allotted operationefficiency.	AadharAPI, etc.
8.	MachineLearn ingModel	IOTandmachinelearningdeliversins ights otherwise hidden in dataforrapidautomatedresponsean d improveddecisionmaking	Object RecognitionModel, DangerpredictionMo deletc.

Table-2:ApplicationCharacteristics:

S.No	Characteristics	Description	Technology
1.	Open- SourceFram eworks	Device that removes much ofthe manual work needed towrite and configure code. Itprovidesrapiddevelopment,ise asytsetupandhasa strongsupportbase	IOT Zeta for nonstopstreaming ofdetectinggasleakag elevel,
2.	SecurityImplem entations	Alert notification Enabled withGPS module received in ownermobile.	e.g. SHA- 256,Encryptionsof dataregardinggas level, firewalls, Antivirus,datalosspreven tionetc.,
3.	ScalableArchitecture	Ifaproblemarisesowner can see the problemsand check gas levels simultaneously	MultipleDatastore Technologies , Reliable,Micro servicesAutomated Bootstrapping

4.	Availability	*sensortodetectthe leakageandLCDDisplayto sho wgaslevel	GSM module,raspb erry pi
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S.No	Characteristics	Description	Technology
		*whenever the gas leakage is sensed the message is delivered to the owner	
5.	Performance	*the alert notification is sent to the owner without any delay when leakage is detected *immediate actions are taken after detection.	High durable device battery