Project Design Phase-
IITechnologyStack(Architecture&Stack)

Date	16October2022
TeamID	PNT2022TMID42440
ProjectName	RealTime RiverWaterMonitoringand Control Systems
MaximumMarks	4Marks

TechnicalArchitecture:

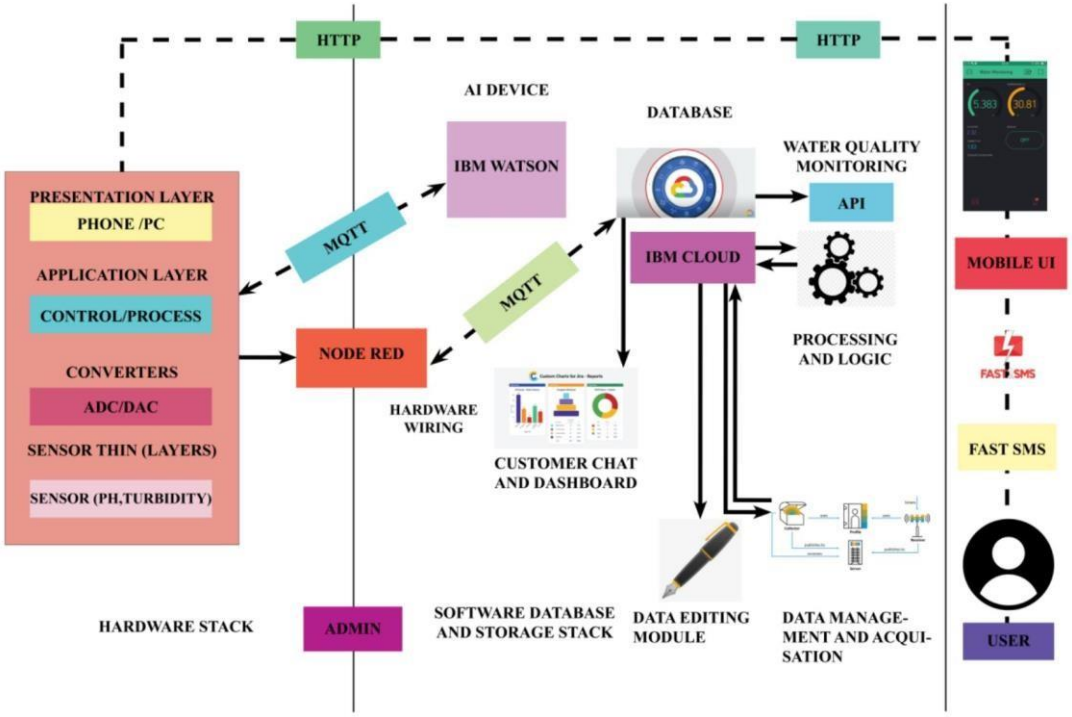

Table-1:Components&Technologies:

S.No	Component	Description	Technology
1.	UserInterface	MobileUI	HTML,CSS,javascript
2.	ApplicationLogic-1(mobileapplication)	Scale meter is introduced to monitor the waterparameters	Java
3.	ApplicationLogic-2(AIApplication)	Forpredictingfuturevaluesofwaterqualityrange	IBMWatson Assistant
4.	Database	DataType	NOSQL.
5.	CloudDatabase	DatabaseServiceon Cloud	IBMCloudant
6.	FileStorage	Filestoragerequirements: ContainerPlatformVersion4.6	IBMBlock Storage
7.	ExternalAPI-1	The data is used to compare the values for sensorwiththresholdvalues	IBMwaterqualityAPI
8.	ExternalAPI-2	Forthe localsandauthoritiesto knowthewaterquality	mobileAPI,
9.	MachineLearningModel(node-red)	Forinterfacinghardwareandsoftwareap plication(avirtualwiringtool)	Platform: Node.js
10.	Infrastructure(Server/Cloud)	ApplicationDeploymentoncloud CloudServerConfiguration:application-client-bnd	IBMcloud

Table-2:ApplicationCharacteristics:

S.No	Characteristics	Description	Technology
1.	Open-SourceFrameworks	Bootstrap	CSS
2.	SecurityImplementations	MQTT,CoAP,DTLS,6LoWPAN	Encryptions,OWASP
3.	ScalableArchitecture	Thescalabilityofarchitecture(3–tier)	IOTandmobileapplication
4.	Availability	Distributedservers	IBMcloudandWatson
5.	Performance	Useofcache,betterperformance	FastSMS application