ProjectDesignPhase-II

Solution Requirements(Functional &Non-functional)

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| **Date** | **19 October2022** |
| **TeamID** | **PNT2022TMID08477** |
| **ProjectName** | **Project- Real time river water quality monitoring and control system** |
| **MaximumMarks** | **4 Marks** |

# FunctionalRequirements:

Followingarethefunctionalrequirements oftheproposedsolution.

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| FRNo. | FunctionalRequirement(Epic) | SubRequirement(Story/Sub-Task) |
| **FR-1** | **User Registration** | **Registration through Form Registration through Gmail**  **Registration through LinkedIN** |
| **FR-2** | **User Confirmation** | **Confirmation via Email**  **Confirmation via OTP** |
| **FR-3** | **Hydroxilic level detection** | **todetect thepresenceofhydroxilicacida pHtest is imminent. Soa pHsensor isusedtodetect thepHvalue ofriver water,periodically.** |
| **FR-4** | **Dustpresencein water** | **Todetect thedustpresencein waterweneedtoanalyze it with aparameter calledturbidity.for that weuse turbiditysensor.** |
| **FR-5** | **Reaction turbinegenerator** | **for energy productionfor systemtohaveselfproduced power methodsas well astoclean themost pollutants ofriver waterssuchas bacteria,weusereactionturbine generator asRiverscomeunderlowhead.** |

# Non-functionalRequirements:

Followingarethenon-functional requirements oftheproposedsolution.

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| FRNo. | Non-FunctionalRequirement | Description |
| **NFR-1** | Usability | **timecontinuous monitoring andquality control producedbythesystem, moreeffective andless complexities** |
| **NFR-2** | Security | **Data encryptions atfront endandbackendisapplied tothe Androidapplication.Proxy servers can't disrupt or hackas sufficient protectivemeasures taken atarchitecturelevel ofapp itself.** |
| **NFR-3** | Reliability | **Asafeandsecuresystem, thatassureslivingaspects forallbeingsfromaquatictolandspecies.System hasembarkedefficiencyinenergy managementand data management. Atrustworthy andprofitable systemthatconstructedwithadvanceddata analyticsprocedurethat canprovide adynamic qualitymonitoring andcontrol system.** |
| **NFR-4** | Performance | **Asthedifferent technolofocal blockscanitself definean systembasedonecofriendly and innovativeproduct facilitatingpeople's lifeon daily basis. Chances of entropyisless duetohigh end engineering (Careful executing of Architectural designandpretty plannedprocess models.)** |
| **NFR-5** | Availability | **Customerserviceavailablefor 24/7 ,query handled viahighend UIviaagency.Alsomonitoring, analysing andstreaming of sensedparameters, values are handledbycloudserviceswhich canbeviewedvia mobileapp.** |
| **NFR-6** | Scalability | **High accuracydue topresetarchitectural design givesita product ofhighscalability.also theproduct isdevelopedjusttomeet up with customers core constraints.the systemcan bedevelopedbasedon people'sinnovativeideas as thisproductisscalable forlater upgrades andversions ,as well forother productsbasedonit.** |
| **NFR-7** | Stability | **stabilityisperfectly explainedas ahighly stable systembasedon greaterpowermanagement strategies anddefinitedesign.** |
| **NFR-8** | Ef iciency | **LowPower consumption and Highperformance.** |