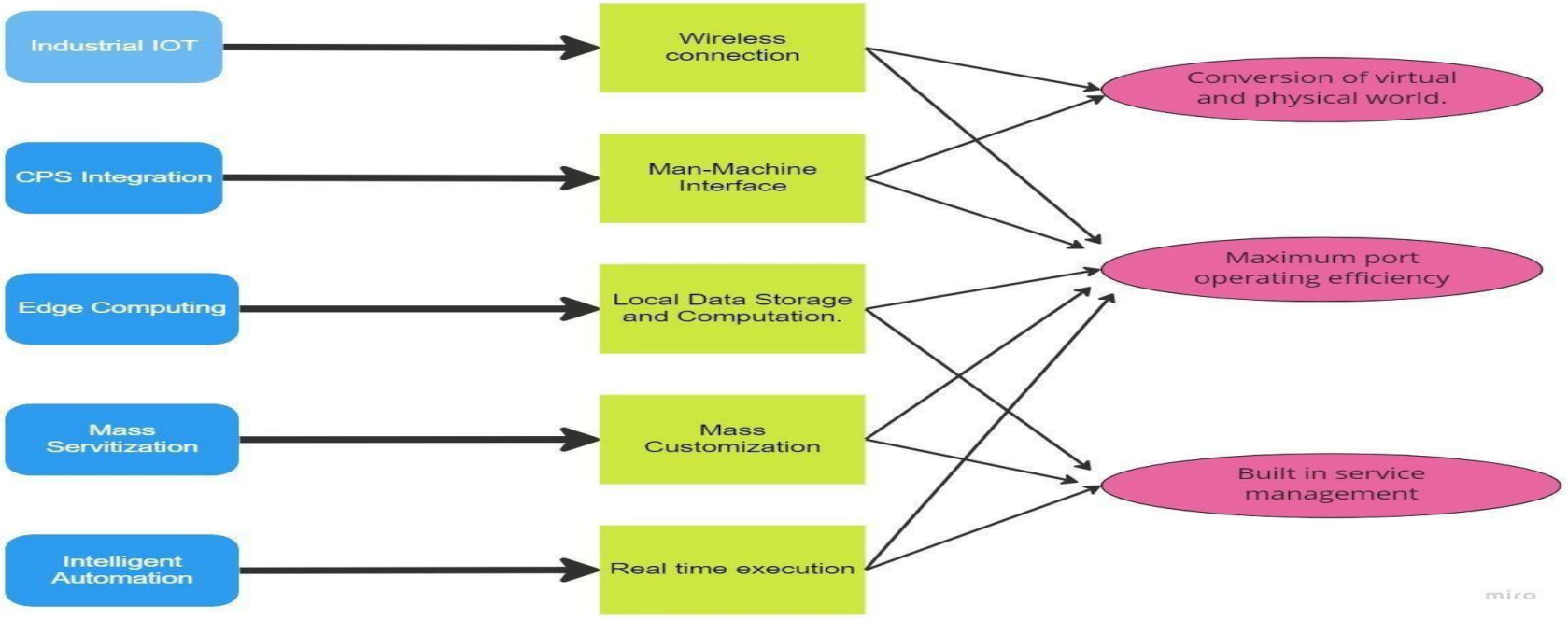
Project Design Phase-
IITechnologyStack(Architecture &Stack)

Date	16October2022
TeamID	PNT2022TMID08273
ProjectName	Project – Traffic and Capacity Analytics forMajor Ports.
MaximumMarks	4 Marks

TechnicalArchitecture:

TheDeliverable shallincludethearchitecturaldiagramasbelowandtheinformationasperthetable1&table2.



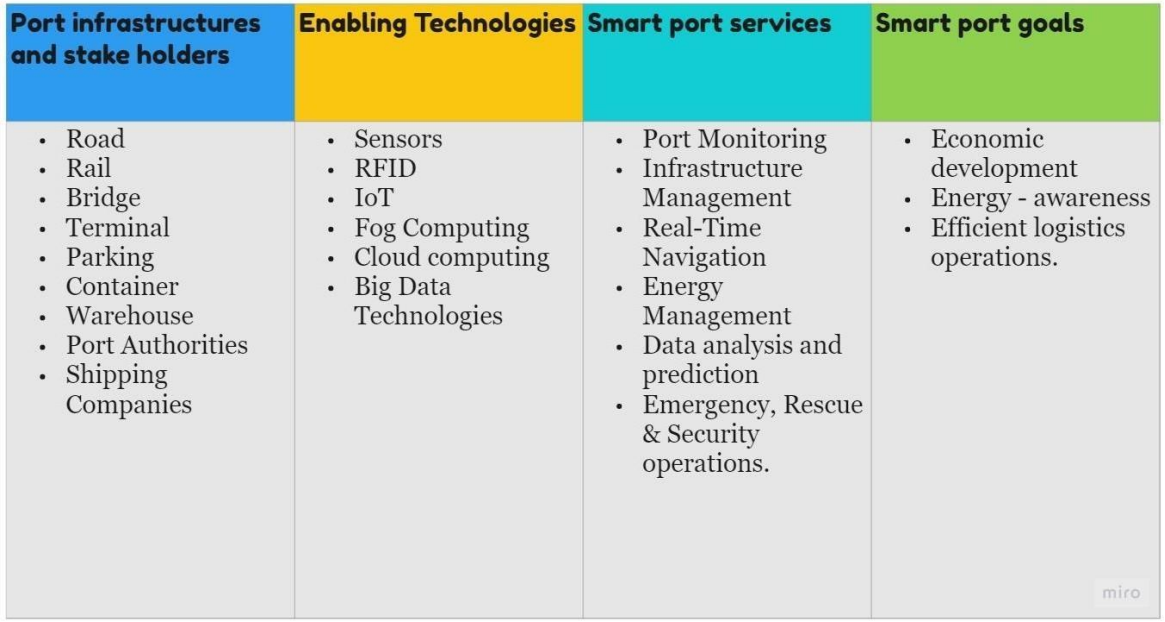


Table-1:Components&Technologies:

S.No	Component	Description	Technology
1.	UserInterface	Howuser interactswithapplicatione.g. WebUI,MobileApp,Chatbotetc.	HTML,CSS,JavaScript
2.	ApplicationLogic-1	Logicforaprocessintheapplication	Python
3.	ApplicationLogic-2	Logicforaprocessintheapplication	IBMWatsonSTT service
4.	ApplicationLogic-3	Logicforaprocessintheapplication	IBMWatson Assistant
5.	Database	DataType,Configurations etc.	MySQL
6.	Cloud Database	DatabaseService onCloud	IBMDB2,IBMCloudant etc.

7.	FileStorage	Filestoragerequirements	IBMBlockStorageorOtherStorage ServiceorLocalFilesystem
8.	ExternalAPI-1	PurposeofExternalAPIused intheapplication	IBMWeather API, etc.
9.	ExternalAPI-2	PurposeofExternalAPIused intheapplication	Aadhar API, etc.
10.	MachineLearningModel	Purposeof MachineLearningModel	ObjectRecognitionModel, etc.
11.	Infrastructure(Server/Cloud)	Application Deployment on Local System / CloudLocalServerConfiguration: CloudServerConfiguration:	Local,CloudFoundry,Kubernetes,etc.

Table-2:ApplicationCharacteristics:

S.No	Characteristics	Description	Technology
1.	Open-SourceFrameworks	Listtheopen-sourceframeworksused	Django
2.	SecurityImplementations	Listallthesecurity/accesscontrolsimplemented,use offirewallsetc.	e.g. SHA-256, Encryptions, IAMControls,OWASPetc.
3.	ScalableArchitecture	Justifythescalabilityof architecture(3–tier, Micro-services)	3-tier,Micro-Services
4.	Availability	Justifytheavailabilityofapplication(e.g.useofload balancers,distributed serversetc.)	Justifytheavailabilityofapplication (e.g. use of load balancers, distributedserversetc.)
5.	Performance	Design consideration for the performance of theapplication (number of requests per sec, use ofCache, useofCDN's) etc.	numberofrequestspersec, useofCache

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d