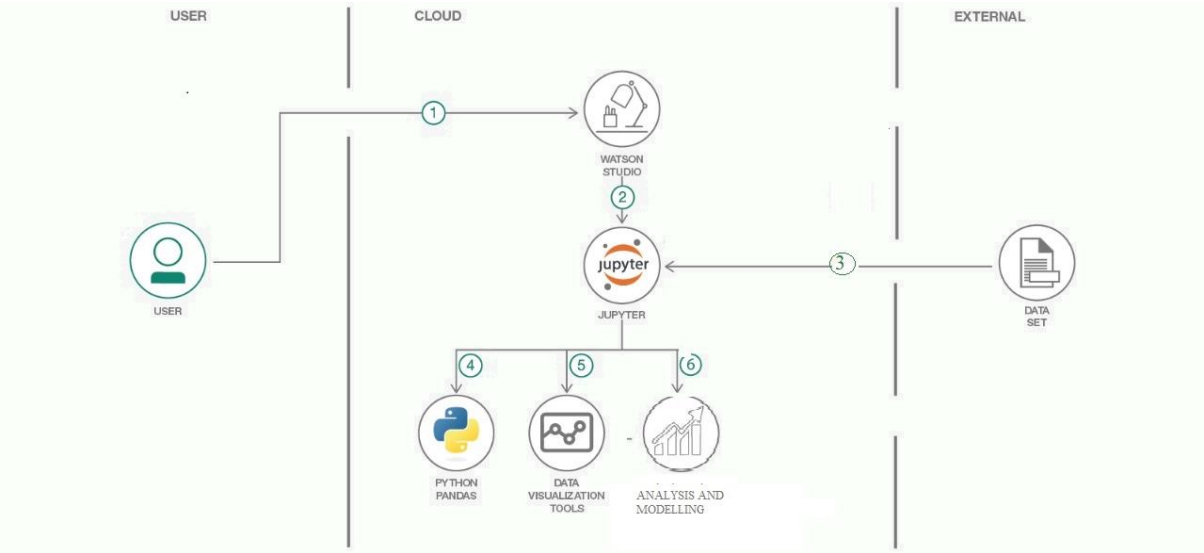
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID37447
Project Name	Project - Corporate Employee Attrition Analytics
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2



S.No	Component	Description	Technology
1.	User Interface Web UI	Web UI is used for the user interaction	HTML, CSS, JavaScript
2.	Application Logic-1 IBM Watson Cloud Account	IBM Watson® Studio empowers data scientists, developers and analysts to build, run and manage AI models, and optimize decisions anywhere on IBM Cloud Pak® for Data.	human speech for meaning and syntax.
3.	Application Logic-2 IBM Watson Cognos Analytics	IBM® Cognos® Business Intelligence is an integrated business intelligence suite that provides a wide range of functionality to help you understand your organization's data.	Java. JRE (Java Runtime Environment) to function.
4.	Application Logic-3 Python	Google is quite aggressive in AI research. Over many years, Google developed AI framework called TensorFlow and a development tool	Google Colaboratory (Google Colab) is a free cloud-based framework with a Jupyter

		called Colaboratory. Today TensorFlow is open-sourced and since 2017, Google made Colaboratory free for public use. Colaboratory is now known as Google Colab or simply Colab.	notebook environment with free access to CPU/GPU/TPU
5.	Application Logic-4 Jupyter	The Jupyter Notebook is the original web application for creating and sharing computational documents. It offers a simple, streamlined, document-centric experience.	Jupyter Notebook is built using several open-source libraries, including IPython, ZeroMQ, Tornado, jQuery, Bootstrap, and MathJax.
6.	External API-1 Dataset	Kaggle website is used to get the dataset. Kaggle allows users to find and publish data sets, explore and build models in a web-based data-science environment, work with other data scientists and machine learning engineers, and enter competitions to solve data science challenges.	Python and C++ Framework: Keras and PyTorch
7.	Database IBM Cloud	With IBM Cloud IaaS, organizations can deploy and access virtualized IT resources -- such as compute power, storage and networking -- over the internet.	IaaS – Infrastructure as a Service

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	The dataset is been obtained from third party Kaggle website. Kaggle website is used to get the dataset. Kaggle allows users to find and publish data sets, explore and build models in a web-based data-science environment, work with other data scientists and machine learning engineers, and enter competitions to solve data science challenges.	Opensource framework - Python and C++ Framework: Keras and PyTorch
2.	Security Implementations	• Application Logic-1 IBM Watson Cloud Account IBM Watson® Studio empowers data scientists, developers and analysts to build, run and manage AI models, and optimize decisions	SHA-256, Encryptions, IAM Controls, OWASP, human speech for meaning and syntax. Java. JRE (Java Runtime Environment) to function. C++, JavaScript, Qt framework for its graphical user interface

S.No	Characteristics	Description	Technology
		anywhere on IBM Cloud Pak® for Data. • Application Logic-2 IBM Watson Cognos Analytics IBM® Cognos® Business Intelligence is an integrated business intelligence suite that provides a wide range of functionality to help you understand your organization's data. • Application Logic-3 Python Google is quite aggressive in AI research. Over many years, Google developed AI framework called TensorFlow and a development tool called Colaboratory. Today TensorFlow is open-sourced and since 2017, Google made Colaboratory free for public use. Colaboratory is now known as Google Colab or simply Colab • Application Logic-4 Jupyter The Jupyter Notebook is the original web application for creating and sharing computational documents. It offers a simple, streamlined, document-centric experience.	Google Colaboratory (Google Colab) is a free cloud-based framework with a Jupyter notebook environment with free access to CPU/GPU/TPU Jupyter Notebook is built using several open-source libraries, including IPython, ZeroMQ, Tornado, jQuery, Bootstrap, and MathJax.

S.No	Characteristics	Description	Technology
3.	Scalable Architecture	The Public cloud infrastructure architecture illustrates the IBM Cloud platform, which can be used to support scalable, secure, and resilient workloads. The infrastructure services include networks, compute, storage, security, and management.	Java. JRE (Java Runtime Environment) to function. C++, JavaScript, Qt framework for its graphical user interface
4.	Availability	IBM® Data Replication for Availability enables high-speed data replication for business continuity across Db2® databases, Db2 Warehouse, Db2 Warehouse in IBM Integrated Analytics System appliances, and Db2 Warehouse on Cloud. The software enables continuous availability, including disaster recovery by synchronizing transactions over both row- and column-organized tables, whether on the same platform, across the data center, or around the world in an active-active configuration. It offers near real-time asynchronous data replication from a primary database server to one or more standby replicas for workload balancing or shifting workloads during planned outages, while also dramatically reducing the time to recovery for unplanned outages.	C++, JavaScript
5.	Performance	progressive employers should be mindful of the ethical standards they adhere to while utilizing this information. Collecting and analyzing workforce data without appropriatecommunication and purpose may cause unease and distrust among employees	HTML, CSS, JavaScript human speech for meaning and syntax.