Project Design Phase-I
Proposed Solution Template

Date	23 October 2023
Team ID	Team-592706
Project Name	PoxVisio: A Deep Learning Expedition into Monkeypox Skin Lesions
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The global spread of monkeypox outbreaks has highlighted the urgent need for early diagnosis, especially in regions with limited access to traditional testing methods. This project addresses this critical healthcare challenge by developing a computer-aided diagnostic system using deep learning techniques, specifically the ResNet50 architecture, to classify monkeypox from skin lesion images. The primary hurdle to overcome is the scarcity of available image datasets, which has been addressed by creating the "Monkeypox Skin Lesion Dataset (MSLD)" through web scraping. The project's success would significantly enhance early detection and containment efforts, ultimately reducing the impact of monkeypox outbreaks on global health.

2.	Idea / Solution description	The proposed solution for this project involves the utilization of advanced deep learning techniques, particularly the ResNet50 model, to develop a robust computer-aided diagnostic system. This system will analyze and classify skin lesion images, enabling the early and accurate identification of monkeypox, even in regions lacking access to conventional diagnostic methods. The cornerstone of this solution is the carefully curated "Monkeypox Skin Lesion Dataset (MSLD)," which collects and processes images from various web sources. By harnessing the power of deep neural networks and a comprehensive image dataset, this solution has the potential to significantly enhance early diagnosis, monitoring, and containment of monkeypox, ultimately bolstering global healthcare efforts to combat this infectious disease.
3.	Novelty / Uniqueness	The project's uniqueness stems from its innovative fusion of deep learning, healthcare, and web scraping to enable early monkeypox diagnosis through skin lesion image classification. This combination offers a novel solution to a pressing global health challenge by bridging the data gap in regions with limited access to traditional diagnostic methods, potentially reshaping disease management strategies.
4.	Social Impact / Customer Satisfaction	This project carries substantial social impact by addressing the global health concern of monkeypox outbreaks, especially in underserved regions. The solution's provision of early diagnosis and accessibility is expected to enhance user satisfaction among healthcare professionals and contribute significantly to the containment and management of monkeypox, ultimately saving lives and improving healthcare

		outcomes.
5.	Business Model (Revenue Model)	The business model for this project can incorporate multiple revenue streams. Initially, it can offer the deep learning model and diagnostic software as a licensed product to healthcare institutions, clinics, and hospitals, generating revenue through one-time or subscription-based licensing fees. Additionally, it can provide a web-based service that allows healthcare professionals to upload skin lesion images for analysis on a pay-per-use basis. Moreover, offering premium support, updates, and customized versions of the software could create additional revenue channels. The project can also explore partnerships with pharmaceutical companies or healthcare organizations for collaborative research and development efforts, further diversifying its revenue streams.
6.	Scalability of the Solution	The project's scalability is a pivotal asset, driven by its utilization of deep learning techniques and web-based datasets. This flexibility supports the expansion of diagnostic capabilities, adaptability to evolving disease strains, and easy accommodation of a growing user base, enhancing its effectiveness and reach.