Date	13 May 2023
Team ID	NM2023TMID08945
Project Name	Uncovering The Hidden Treasures of the mushroom kingdom:A classification Analysis

Functional Requirements:

Filtering and Sorting: The system must allow users to filter and sort the mushroom data based on various criteria such as size, color, toxicity level, region, habitat, and more. Users should be able to easily narrow down their search results to find specific types of mushrooms.

Visualizations: The system must provide users with clear and informative visualizations of the mushroom data, including charts,

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	To participate in Uncovering The Hidden Treasures of the Mushroom Kingdom: A Classification Analysis, users will need to complete the registration process. The registration processwill require users to provide their personal information, such as their full name, email address, and country of residence. Once the registration form has been completed and submitted, users will receive a confirmation email containing instructions on how to access the platform.
FR-2	User Confirmation	The aims to providean in-depth analysis of the different types of mushrooms found in the Mushroom Kingdom, including their properties and potential uses. Through classification techniques, we have organized the wide variety of mushroom species into distinct groups based on physical characteristics and chemical properties. We believe
FR-3		
FR-4		

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	In this classification analysis, we will be looking at the different aspects of usability that are relevant for uncovering hidden treasures in the mushroom kingdom. Discoverability: This refers to how easily users can find important features or information within the application. The application should have clear navigation and menu options that help users to quickly access the different features of the application related to treasure hunting, such as maps.
NFR-2	**Security**	This analysis can help identify the different types ofmushrooms and their potential benefits or dangers, which can enhance the safety and security of mushroom foragers and consumers. Here are some security measures that can be employed to ensure the safety and well-being of those involved in mushroom foraging and consumption.
NFR-3	**Reliability**	In order to assess the reliability of the classification analysis in uncovering the hidden treasures of the mushroom kingdom, it is important to consider the accuracy and consistencyof the results. Accuracy refers to how well the model correctly classifies the different types of mushrooms in the kingdom. This can be measured by comparing the model predictions with the actual characteristics of the mushrooms. In order to ensure accuracy.
NFR-4	**Performance**	In this project we are classifying various types of Mushrooms that are found on various regions of our planet. These Mushrooms are majorly classified into 3 categories namely Boletus, Lactarius & Russula. Deep-learning (DL) methods in artificial intelligence (AI) play a dominant role as high-performance classifiers in the detection of the Mushrooms using images. Transfer learning has become one of the most common techniques that has achieved better performance in many areas, especially in image analysis and classification. We used Transfer Learning techniques like Inception V3,Resnet50V2, Xception that are more widely used as a transfer learning method in image analysis and they are highly effective.
NFR-5	**Availability**	These Mushrooms are majorly classified into 3 categories namely Boletus, Lactarius & Russula. Deep-learning (DL) methods in artificial intelligence (AI) play a dominant role as high-performance classifiers in the detection of the Mushrooms using images. Transfer learning has become one of the most common techniques that has achieved better

		performance in many areas, especially in image analysis and classification. We used Transfer Learning techniques like Inception V3,Resnet50V2, Xception that are more widely used as a transfer learning method in image analysis and they are highly effective.
NFR-6	**Scalability**	In the proposed approach, we used different algorithms to get best results of mushroom classification, we implement each of neural network (NN), SVM, Decision Tree, and KNN on different scenarios, with background and without background. We extract different features from mushroom images like Eigen features, histogram features and parametric features. In order to improve the results, we remove images background but unfortunately this step failed to improve the result. Finally, the experiment results show advantage for background images.