**Tomato Care**

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Date: [15 December 2023]

**Final Approval**

This is to certify that we have read the report submitted by ***Muhammad Salman Afaq (24775),Usman Afaq (24779), Rafaqat Ahmad (24784)*** for the partial fulfillment of the requirements for the degree of the Bachelors of Science in Computer Science (BSCS). It is our judgment that this report is of sufficient standard to warrant its acceptance by Riphah International University, Islamabad for the degree of Bachelors of Science in Computer Science (BSCS).

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| **2** | Dr. Muhammad Musharraf  (Head of Department) |

**Declaration**

We hereby declare that this document “**Tomato Disease Detection**” neither as a whole nor as a part has been copied out from any source. It is further declared that we have done this project with the accompanied report entirely on the basis of our personal efforts, under the proficient guidance of our teachers especially our supervisor **Muhammad Usman Karim**. If any part of the system is proved to be copied out from any source or found to be reproduction of any project from anywhere else, we shall stand by the consequences.

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**Dedication**

Our final year project is dedicated to our parents, friends and teachers, whose love and support have been our pillars of strength. To our professors and especially supervisor

"M. Usman Karim", your guidance has shaped our academic journey.

**Acknowledgement**

First of all we are obliged to Allah Almighty the Merciful, the Beneficent and the source of all Knowledge, for granting us the courage and knowledge to complete this Project.

We extend our heartfelt gratitude to our project supervisor “**Muhammad Usman Karim”**, whose unwavering support, invaluable guidance, and continuous mentorship were indispensable to the successful completion of this project. Their dedication and commitment have been a driving force behind our work.

Furthermore, we want to say a big thank you to our family and friends. They have been our constant source of support and motivation, always encouraging us to do our best and be honest and hardworking.

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**Abstract**

The project, titled **"Tomato Disease Detection Using Machine Learning"** addresses the critical challenge of safeguarding tomato crops against diseases that threaten global agricultural sustainability. Focused on Early Blight, Late Blight, and Leaf Mold, our objective is to develop an efficient automated system for early disease detection, providing farmers with a tool for timely intervention.

Leveraging Convolutional Neural Networks (CNNs) and transfer learning on a diverse dataset, our model achieved a validation accuracy of 95%. Real-world testing demonstrated its robustness, showcasing high sensitivity and specificity.

This Tomato Disease Detection System stands as a practical solution, emphasizing the potential of machine learning in precision agriculture for sustainable food production.**Table of Contents**

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**Chapter 1:**

**Heading (30-Point Size,**

**Times New Roman, Bold and Right aligned**