

6COSC006W – FINAL YEAR PROJECT

LiverFibro –

A Mobile Application to calculate The NAFLD & Advance Fibrosis Score to Evaluate the risk of Cirrhosis based on the result and a Prediction Application to determine The Risk of Cirrhosis, & as well as predict future conditions based on Artificial Intelligence for the NAFL Stages.

A dissertation by

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This report is submitted in partial fulfillment of the requirements for the

BSc (Hons) Business Information Systems

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Date: 5th May 2022

II. Abstract

The Liver is the largest internal organ in the Human Body and one of the most important functional components is carrying away waste products from the Liver. This complex organ facilitates the blood circulations, creates nutritious and distributes the metabolized drugs into forms and more than 500 vital functions interact with the Human Liver. Non-alcoholic Fatty Liver Disease (NAFLD) is a term of range conditions that can be caused to improve end-stage liver diseases. This condition can be caused by the deposit of high volumes of fat inside the Liver. This condition can be increased to serious liver damage too. NAFLD develops in four main stages and the early stage of NAFLD does not usually cause any harm, but eventually, it can lead to critical damage affecting diseases of Diabetics, Cholesterol, Obesity, Hypertension, & metabolic syndrome. So, the recommended treatment methods for these four types of conditions are various types. But the patients with NAFLD Stages & Advanced liver Fibrosis are at the highest risk of progressing to end-stage liver diseases.

This project aims to analyze the predictable NAFLD Fibrosis Score is used to distinguish between patients with NAFLD Stages who have (F3-F4) & do not have (F0-F2) Advanced Fibrosis, based on test data of demographic, clinical & laboratory variables accorded to the Sri Lankan Liver Patients' and evaluate The Risk of Cirrhosis based on the predicted data and as well as design & develop a solution that suggests a coding system of prevention treatments to recover from each of the condition of NAFLD Stages. Moreover, this project employed Artificial Intelligence (AI) based on a coding system to predict the future condition of the patient once the patient satisfies the suggested prevention/methods. This implemented software facilitates online consultations by improving the productivity of healthcare service between patients & doctors (Physicians/Hepatologists) to treat patients without any delays.

The developed application was evaluated by technical & non-technical experts to obtain the overall performance of the proposed solution in describing the identified problems and analyzing the feedback of the proposed solution.

Keywords: Non-Alcoholic Fatty Liver Disease, Predict Future Conditions.