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Towards a Framework for Embedded Weight Comparison Algorithm with Business Intelligence in the Plantation Domain

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Abstract : Embedded systems have emerged as important elements in various domains with extensive applications in automotive, commercial, consumer, healthcare and transportation markets, as there is emphasis on intelligent devices. On the other hand, Business Intelligence (BI) has also been extensively used in a range of applications, especially in the agriculture domain which is the area of this research. The aim of this research is to create a framework for Embedded Weight Comparison Algorithm with Business Intelligence (EWCA-BI). The weight comparison algorithm will be embedded within the plantation management system and the weighbridge system. This algorithm will be used to estimate the weight at the site and will be compared with the actual weight at the plantation. The algorithm will be used to build the necessary alerts when there is a discrepancy in the weight, thus enabling better decision making. In the current practice, data are collected from various locations in various forms. It is a challenge to consolidate data to obtain timely and accurate information for effective decision making. Adding to this, the unstable network connection leads to difficulty in getting timely accurate information. To overcome the challenges embedding is done on a portable device that will have the embedded weight comparison algorithm to also assist in data capture and synchronize data at various locations overcoming the network short comings at collection points. The EWCA-BI will provide real-time information at any given point of time, thus enabling non-latent BI reports that will provide crucial information to enable efficient operational decision making. This research has a high potential in bringing embedded system into the agriculture industry. EWCA-BI will provide BI reports with accurate information with uncompromised data using an embedded system and provide alerts, therefore, enabling effective operation management decision-making at the site.

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