ABSTRAK

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Di zaman ini dan dengan dukungan teknologi yang semakin canggih, mengetahui arah kiblat semakin mudah. Pengukuran arah kiblat dapat dilakukan dengan menggunakan berbagai alat bantu pemrograman. Alat dan bahan yang digunakan dalam penelitian ini diantaranya adalah Kompas, GPS, Arduino Uno Rev3, *Raspberry Pi* , PC/Laptop yang sudah terinstall software. Data yang diuji merupakan arah kiblat menggunakan metode Trigonometri Bola dan Rashdul Kiblat. Koreksi Arah Kiblat Masjid Lokasi terhadap Arah Kiblat metode Trigonometri Bola bervariatif, ada yang kecil ada pula yang besar. Ada beberapa faktor, diantaranya karena di Masjid tersebut tidak dilakukan pengukuran Arah Kiblat secara berkala dan ketelitian ketika melakukan pengujian. Selain itu, Koreksi Arah bayang benda ketika Rashdul Kiblat terhadap Arah Kiblat metode Trigonometri Bola tidak dapat dilakukan, karena faktor cuaca sangat mempengaruhi penelitian. Arah Kiblat dengan metode Trigonometri Bola cukup akurat, namun terdapat perbedaan koreksi di tiap daerah. hal ini disebabkan adanya deklinasi magnetik dan sulitnya menemukan tempat yang steril dari pengaruh medan magnetik untuk mengambil data.

Kata Kunci: Arah Kiblat, Raspberry Pi, Arduino UNO, Trigonometri Bola, Rashdul Kiblat

ABSTRACT

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Title : *Design of Qibla Direction Tool Using Spherical Trigonometry Method Based on Raspberry Pi*

In this era, with the support of increasingly advanced technology, determining the direction of the Qibla has become easier. The measurement of the Qibla direction can be conducted using various programming tools. The tools and materials used in this research include a compass, GPS, Arduino Uno Rev3, Raspberry Pi, and a PC/laptop with installed software. The data tested pertains to the Qibla direction using the Spherical Trigonometry and Rashdul Qibla methods. The correction of the Qibla direction of the mosque location compared to the Qibla direction via the Spherical Trigonometry method varies, with some corrections being small and others large. Several factors contribute to this, including the lack of periodic measurements of the Qibla direction at the mosque and the accuracy of the testing conducted. Furthermore, the correction of the shadow of objects when using Rashdul Qibla in relation to the Qibla direction via the Spherical Trigonometry method could not be performed due to the significant impact of weather on the research. The Qibla direction determined by the Spherical Trigonometry method is fairly accurate; however, there are discrepancies in corrections across different regions. This is caused by magnetic declination and the difficulty in finding a location free from magnetic field interference to collect data.

Keywords: Qibla Direction, Raspberry Pi, Arduino UNO, Spherical Trigono- metry, Rashdul Qibla