



**FINAL YEAR PROJECT REPORT**  
**MART NAVIGATION SYSTEM**

**In fulfillment of the requirement  
For degree of  
BS (COMPUTER SCIENCES)**

**By**

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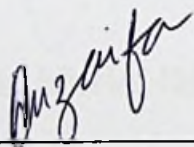
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**FALL-2022**

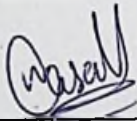
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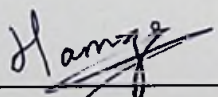
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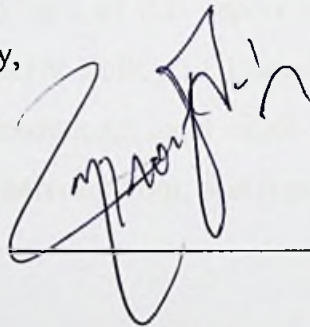
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## APPROVAL FOR SUBMISSION

We certify that this project report entitled "MART NAVIGATION SYSTEM" was prepared by **MALIK HAMZA ALI NASIR, MUHAMMAD HUZAIFAH, MUHAMMAD WASSAY SULTAN** has met the required standard for submission in partial fulfilment of the requirements for the award of Bachelor of Computer Sciences at Bahria University.

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## ACKNOWLEDGEMENT

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## MART NAVIGATION SYSTEM

### ABSTRACT

The objective of this project is to navigate a user from their approximated location to a point in an indoor environment. This user location is estimated using the Bluetooth Low Energy (BLE) reference beacons. The indoor environment of a mart is modelled as a map using a 3d modelling software. A user is provided with an intuitive user interface which they can use interact with the application and to select a point to navigate to. An informed search algorithm is applied to the graph which internally represents the environment as a set of nodes. The algorithm finds the shortest path to the destination which is then rendered to the application interface. This aids a user's shopping experience where they can seamlessly navigate to their desired products hassle-free.

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