INTRODUCTION

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Course: Bsc(Hons)Artificial Intelligence

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WORLD HOTELS

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NORMALIZATION

EXPLANATION OF THE NORMALIZATION PROCESS

• UNF to 1NF: To achieve 1NF, I have made all attributes atomic and made sure that each table had a primary key. For example, the features column in the hotels and rooms tables was split into a separate room_features table to ensure atomicity.

• 1NF to 2NF: To achieve 2NF, I have removed the partial dependencies by ensuring that all non-key attributes were fully dependent on the primary key.

For example, in the room_feature_mapping table, both room_id and feature_id form the composite key, and there are no attributes that depend on just one part of this key. This ensures that all non-key attributes are fully dependent on the entire primary key.

So I moved them to separate tables where they have their dependency and currency_id is moved to a separate table called booking_currencies to ensure that it is fully dependent on the primary key booking_id.

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NORMALIZATION

EXPLANATION OF THE NORMALIZATION PROCESS

• 2NF to 3NF: To achieve 3NF, I have removed transitive dependencies ensuring all attributes were only dependent on the primary key and not on other non-key attributes.

For example, if a non-key attribute depended on another non-key attribute, I moved them to a separate table that is in the bookings table, attributes like guest_name, guest_email, and guest_phone can be considered transitive dependencies because they are dependent on the user_id rather than directly on the booking_id.

Hence, they are moved to a separate table called booking_details to ensure that they are only dependent on the primary key booking_id.

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LESP REPORT

1. LEGAL ASPECTS

• Data Protection: I've used secure techniques for data transfer and storage, like HTTPS and password hashing. I have also included a privacy policy to inform users about how their data is used.

• Intellectual Property: I have made certain that every image and piece of content utilized in the project is either unique, licensed, or falls under fair use guidelines. Where appropriate, I have given credit to outside sources.

• Compliance: In order to ensure that user data is handled properly, I have ensured that the project complies with all applicable laws and regulations, including the GDPR for data protection.

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LESP REPORT

2. ETHICAL ASPECTS

• User Privacy: I have implemented secure data transmission techniques and maintained the confidentiality of user data. I gave users choices on how to handle their data.

• Transparency: In order to let users know how their data will be handled and retained, I have included explicit privacy policies and terms of service.

• Fairness: I have created the application to be usable by everyone, guaranteeing no bias according to user category or capability.

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LESP REPORT

3. SOCIAL ASPECTS

• User Experience: I have followed to web accessibility guidelines (WCAG) to guarantee the application is easy to use and accessible for everyone, including individuals with disabilities.

• Community Impact: I evaluated the project's effect on the local community and society, encouraging beneficial social interactions and deterring negative behavior.

• Responsiveness: I have created the website to be adaptable on all devices, utilizing media queries for various screen dimensions and frameworks such as Bootstrap.

LESP REPORT

4. PROFESSIONAL ASPECTS

• Best Practices: I followed industry standards for software development, which encompass ensuring code quality, comprehensive documentation, and employing version control.

• Continuous Learning: I am informed about the newest technologies and trends in web development and database management to guarantee the project stays relevant and effective.

• Team Work: I stayed updated on the latest technologies and trends in web development and database management to ensure the project remains relevant and efficient.

CONCLUSION

I effectively normalized a database from UNF to 3NF, guaranteeing data integrity, efficiency, and improved operations. This procedure improved the organization of the database, minimizing redundancy and boosting overall efficiency. I also addressed crucial legal, ethical, social, and professional concerns, including data security, accessibility standards, and transparency, ensuring compliance with best practices and user trust.

This experience sharpened my technical abilities, such as data modeling and optimization, while also deepening my understanding of responsible, user-centered development. It reinforced my commitment to creating solutions that balance technical excellence with ethical considerations, ultimately delivering secure, efficient, and accessible systems for all stakeholders.

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THANKYOU

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