Leading University Department of Computer Science and Engineering

CSE 4801



Project Title

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| NAME 4 | ID 4 |

Department of Computer Science and Engineering

Supervisor

Adil Ahmed Chowdhury

Lecturer

Department of Computer Science and Engineering

4th November, 2021

Project/Thesis Title



A Thesis submitted to the

Department of Computer Science and Engineering Leading University

Sylhet - 3112, Bangladesh

in partial fulfillment of the requirements for the degree of Bachelor of Science in Computer Science and Engineering

By

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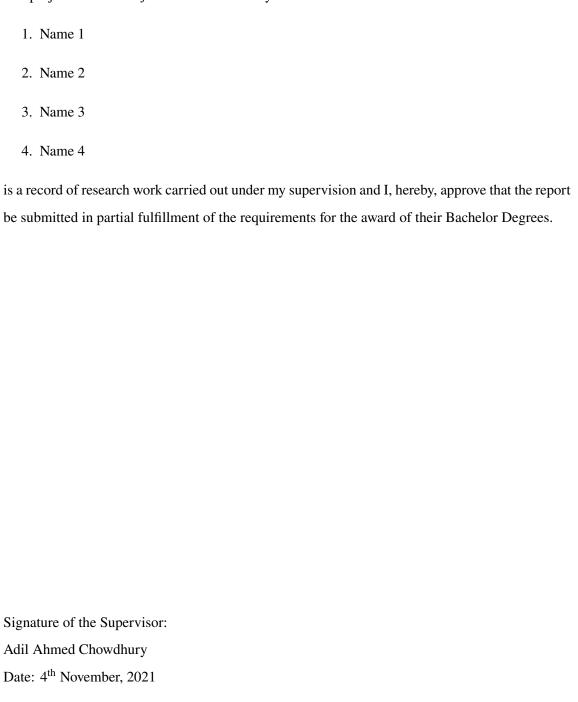
Lecturer

Department of Computer Science and Engineering

4th November, 2021

Recommendation Letter from the Project/Thesis Supervisor

The project entitled *Project Title* submitted by the students



Certificate of Acceptance of the Project/Thesis

The thesis entitled *Title* submitted by the students

- 1. Student 1
- 2. Student 2

on 4th November, 2021

is, hereby, accepted as the partial fulfillment of the requirements for the award of their Bachelor Degrees.

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Department of Computer

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Shafkat Kibria

Assistant Professor

Department of Computer

Science and Engineering

Supervisor

Adil Ahmed Chowdhury

Professor

Department of Computer

Science and Engineering

Abstract

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum

Acknowledgements

We would like to thank the Department of Computer Science and Engineering, Leading University, Sylhet 3112, Bangladesh, for supporting this course work.

Dedication

We would like to dedicate our work to our parents, relatives and friends.

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Introduction

1.1 Background

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1.2 Motivation

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

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Background Study

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2.1 Review Previous Work

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Methodology

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Structural Design

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4.1 Class Diagram

Insert the class diagram here 4.1

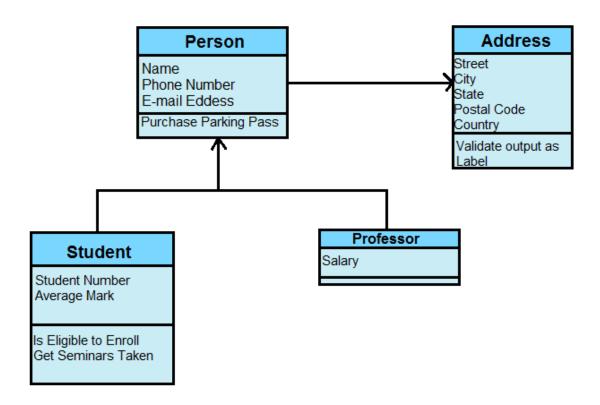


Figure 4.1: Class Diagram

4.2 E-R Diagram

Insert the E-R diagram here 4.2

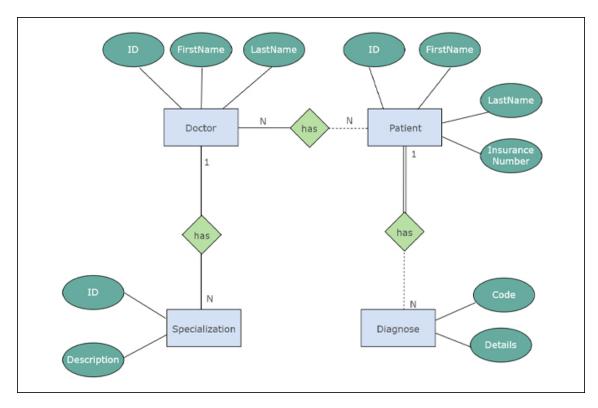


Figure 4.2: E-R Diagram

4.3 Use Case Diagram

Insert the Use case diagram here 4.3

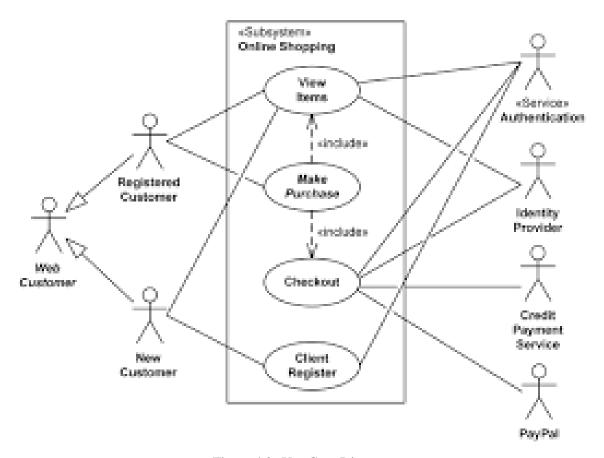


Figure 4.3: Use Case Diagram

4.4 Data Flow Diagram

Insert the data flow diagram here 4.4

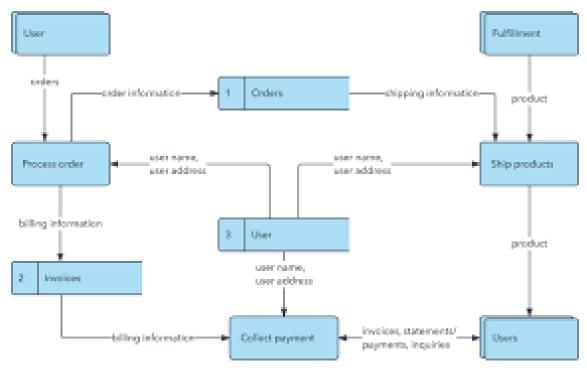


Figure 4.4: Data Flow Diagram

Result and Analysis

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Limitations and Future Work

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6.2 Future Work

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Conclusion

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7.1 Discussion

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References

- [1] A. Ahmad, M. Raihan Hussain, M. Reza Selim, M. Zafar Iqbal, and M. Shahidur Rahman, "A sequence-to-sequence pronunciation model for bangla speech synthesis," in 2018 International Conference on Bangla Speech and Language Processing (ICBSLP), Sep. 2018, pp. 1–4.
- [2] J. Sotelo, S. Mehri, K. Kumar, J. F. Santos, K. Kastner, A. Courville, and Y. Bengio, "Char2wav: End-to-end speech synthesis," 2017.
- [3] F. Alam, P. K. Nath, and M. Khan, "Text-to-speech for bangla language using festival," 2007.
- [4] J. Chung, C. Gulcehre, K. Cho, and Y. Bengio, "Empirical evaluation of gated recurrent neural networks on sequence modeling," *arXiv preprint arXiv:1412.3555*, 2014.
- [5] S. Ö. Arik, M. Chrzanowski, A. Coates, G. Diamos, A. Gibiansky, Y. Kang, X. Li, J. Miller, A. Ng, J. Raiman et al., "Deep voice: Real-time neural text-to-speech," in *Proceedings of the 34th International Conference on Machine Learning-Volume 70*. JMLR. org, 2017, pp. 195–204.
- [6] A. Gibiansky, S. Arik, G. Diamos, J. Miller, K. Peng, W. Ping, J. Raiman, and Y. Zhou, "Deep voice 2: Multi-speaker neural text-to-speech," in *Advances in neural information processing systems*, 2017, pp. 2962–2970.
- [7] Y. Fan, Y. Qian, F.-L. Xie, and F. K. Soong, "Tts synthesis with bidirectional lstm based recurrent neural networks," in *Fifteenth Annual Conference of the International Speech Communication Association*, 2014.

- [8] Z.-H. Ling, S.-Y. Kang, H. Zen, A. Senior, M. Schuster, X.-J. Qian, H. M. Meng, and L. Deng, "Deep learning for acoustic modeling in parametric speech generation: A systematic review of existing techniques and tuture trends," *IEEE Signal Processing Magazine*, vol. 32, no. 3, pp. 35–52, 2015.
- [9] D. Bahdanau, K. Cho, and Y. Bengio, "Neural machine translation by jointly learning to align and translate," *arXiv preprint arXiv:1409.0473*, 2014.
- [10] Y. Wang, R. Skerry-Ryan, D. Stanton, Y. Wu, R. J. Weiss, N. Jaitly, Z. Yang, Y. Xiao, Z. Chen, S. Bengio *et al.*, "Tacotron: Towards end-to-end speech synthesis," *arXiv preprint arXiv:1703.10135*, 2017.