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| **PROJECTS**  **Optimizing Vertex-Cover Problem & Comparison with Other Methods  Mar 2022 – April 2022**   * Implemented and analysed 2 polynomial-time & 1 NP-complete algorithm for solving the minimum vertex-cover problem. * Optimized the existing encoding of CNF-SAT solver (NP-complete) to provide most optimal result at > 60% faster rate.   **Tech Stack:** C++, UNIX.  **Repo:** <https://github.com/udityalaad/OptimizingVertexCoverProblem>  **Street Specifications Generator & Optimal Path Finder – using Multiprogramming  Jan 2022 – Mar 2022**   * Designed street generator to create valid specifications in less than 10 unsuccessful attempts (further converted to graph). * Dynamically generated trails for specifications & facilitated communication between processes using multiprogramming.   **Tech Stack:** Python, C++, UNIX.  **Repo:** <https://github.com/udityalaad/StreetSpecificationsGenerator_and_OptimalPathFinder>  **Asynchronous Meal-Service Application with Model Optimization –** (FoodBell) **Jan 2022 – April 2022**  ‘FoodBell’ is an asynchronous solution for facilitating subscription-based (recurring) meal services – using a dedicated application, secure micro-service architecture and CI/CD approach.   * Created an optimal ‘vendor-consumer’ model & leveraged it to design the user application with targeted functionalities. * Architected a secure Micro-service model, with a Gateway facilitating 3 different services (consumer, vendor, auth). * Allowed real time communication between vendor & consumer platforms; used Cron jobs to facilitate automated changes.   **Tech Stack:** Spring Boot, MySql, Node.js, React, Java, Junit, Integration Test Framework (in react), Selenium.  **Repo:** <https://github.com/udityalaad/FoodBell>  **GPS Based, Real-Time Accident Management System**   **Jul 2018 – Jul 2019**  An IoT project providing a collaborated solution for accident prevention, accident detection and rescue/aid – using a blend of Cross-platform applications, Microservices & Embedded Technology.   * Created a real time, multi-platform application - with unique dynamic functionalities for 3 sets of users. * Created Black Box Device to automatically detect accident of vehicles & integrated it with user application. * Created Web Services to implement algorithms & performed Data Analytics to provide better responses.   **Tech Stack:** Node.js, Cordova, Raspberry Pi, Python, Web Development, Firebase, Cloud Messaging, Cloud Functions, Android Application Development, Data Analytics  **Repo:** <https://github.com/udityalaad/GpsBased_RealTime_AccidentManagementSystem>  **Practical Implementer & Stepwise Analyzer for CCNS Techniques –** (Cyber Solve)  **Mar 2019**   * Developed an application to generate simplified results for complex techniques and algorithms used in ‘Computer Cryptography and Network Security (CCNS)’. * Also provided the option of detailed analysis, by allowing step-by-step tracing of each implementation.   **Tech Stack:** Java  **Repo:** <https://github.com/udityalaad/Cyber_Solve>  **Intelligent Analyzer & Suggestions Builder, cum E-Commerce Platform –** (The Shoe Rack)  **Apr 2018**   * Developed and implemented coherent algorithms to perform efficient cost and feature analysis, in order to generate dynamic comparison of products. * Created a Web App. - to display best-to-worst results, and also act as an E-Commerce portal (for shoes).   **Tech Stack:** Java, Web Development (JSP, HTML, JavaScript, CSS), SQL (Oracle Database), Apache Tomcat.  **Repo:** <https://github.com/udityalaad/The_Shoe_Rack>  **Applications for Simple Mini-Games**   **Feb 2018**   * Created applications for simple games like Ball Bounce (with smart Obstacles Generator), Maze Game (‘Self play’ + ‘Automated - with intelligent Path Decoder’), and Tic-Tac-Toe (‘v/s Player’ + ‘v/s Computer’).   **Tech Stack:** Android application development, C, C++  **Repo:** <https://github.com/udityalaad/Applications_for_Simple_MiniGames>  **Simple Reservation System for Airlines – (Go Fly)**   **Oct 2017**   * Created an easy-to-use application for flight reservation and payment, using Java & SQL (Oracle Database).   **Tech Stack:** Java, SQL  **Repo:** <https://github.com/udityalaad/Go_Fly> |