**CERTIFICATE**

Certified that **Anmol Goyal 2200290140033** has/ have carried out the project work having “**Split Nexus**” for **Master of Computer Application** from Dr. A.P.J. Abdul Kalam Technical University (AKTU**)** (formerly UPTU), Lucknow under my supervision. The project report embodies original work, and studies are carried out by the student himself/herself and the contents of the project report do not form the basis for the award of any other degree to the candidate or to anybody else from this or any other University/Institution.

**Date:**

**Anmol Goyal (2200290140033)**

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

Date:

**Prof. Rabi N. Panda Dr. Arun Tripathi**

**Associate Professor Head**

**Department of Computer Applications Department of Computer Applications**

**KIET Group of Institutions, Ghaziabad KIET Group of Institutions, Ghaziabad**

**SPLIT NEXUS**

**ANMOL GOYAL**

**ABSTRACT**

In our ever-evolving world, staying on top of personal finance can be a daunting task. That’s why we’re thrilled to introduce a innovative Split Nexus web-based app tailored for guest users. Our platform is designed to empower explorers like you to effortlessly manage expenses and stay on budget, all while fostering financial flexibility and enabling seamless group expenses splitting. At the heart of our web-based app are two key features. First, we’ve implemented intuitive manual input functionality, allowing users to easily log expenses with a few steps. This hands-on approach streamlines the process, minimizing errors and speeding tracking for explorers on the go.

Secondly, our app harness the power of location-based services, enabling real-time tracking of spending within predefined areas. As you explore new destinations, our app automatically calculates your expense within each location. If you’re nearing your present spending limit in a specific zone, we'll send you a friendly reminder, helping you stay within budget and make informed financial decisions. But that’s not all. In financial flex mode, our app goes beyond basic expense tracking to offer personalized budget updates.

If your spending falls below your allocated budget, we'll suggest adjustments to help you meet your financial goals and make the most of your resources. And when it comes to splitting group expenses, our app has you covered.

Whether you're traveling with friends or sharing costs with family, our splitting group mode makes it easy to divide expenses equitably, ensuring everyone pays their fair share without the hassle. With our app, managing finances as an explorer has never been easier. By combining user-friendly features with cutting-edge technology, we're revolutionizing the way you track and control your expenses, empowering you to explore with confidence while maintaining financial peace of mind. Join us on this journey towards financial freedom and flexibility – one expense at a time.

Keywords: Cost-sharing, Shared wallets, Bill splitting, Shared finances, IOU tracking

**ACKNOWLEDGEMENTS**

Success in life is never attained single handedly. My deepest gratitude goes to my thesis supervisor, **Prof. Rabi N. Panda** for his guidance, help and encouragement throughout my research work. Their enlightening ideas, comments, and suggestions.

Words are not enough to express my gratitude to Dr. Arun Kumar Tripathi, Professor and Head, Department of Computer Applications, for his insightful comments and administrative help at various occasions.

Fortunately, I have many understanding friends, who have helped me a lot on many critical conditions.

Finally, my sincere thanks go to my family members and all those who have directly and indirectly provided me moral support and other kind of help. Without their support, completion of this work would not have been possible in time. They keep my life filled with enjoyment and happiness.

**ANMOL GOYAL**

**TABLE OF CONTENTS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Certificate | | | | i |
|  | Abstract | | | | ii |
|  | Acknowledgements | | | | iii |
|  | Table of Contents | | | | iv |
|  | List of Tables | | | | vi |
|  | List of Figures | | | | vii |
|  |  | | | |  |
| 1 | Introduction | | | | 1-9 |
|  | 1.1 | Key Features | | | 1 |
|  |  | 1.1.1 | User Registration and Login | | 1 |
|  |  |  | 1.1.2 | Dashboard | 1 |
|  |  |  | 1.1.3 | Expense Management | 1 |
|  |  |  | 1.1.4 | Profile Management | 2 |
|  |  |  | 1.1.5 Budget Adjustment | | 2 |
|  |  |  | 1.1.6 Help and Queries | | 2 |
|  |  |  | 1.17 Mode Selection | | 2 |
|  |  | 1.2 | Project Description | | 2-3 |
|  | 1.3 | Project Scope | | | 4-5 |
|  | 1.4 | Hardware/Software used in Project | | | 5-9 |
| 2 | Feasibility Study | | | | 10-18 |
|  | 2.1 | Key Objectives | | | 11 |
|  | 2.2 | Technical Feasibility | | | 12-14 |
|  | 2.3 | Operational Feasibility | | | 14-15 |
|  | 2.4 | Behavioral Feasibility | | | 15-17 |
|  | 2.5 | Schedule Feasibility | | | 17-18 |
| 3 | Design | | | | 19-30 |
|  | 3.1 | Database Tables | | | 20-21 |
|  | 3.2 | Flowchart | | | 21-22 |
|  | 3.3 | Use Case Diagram | | | 22-25 |
|  | 3.4 | Data Flow Diagram | | | 25-30 |
| 4 | Form |  | | | 31-43 |
| 5 | Coding |  | | | 44-68 |
| 6 | Testing |  | | | 69-70 |
|  | 6.1 | Test Case-1 | | | 69-70 |
|  | 6.2 | Test Case-2 | | | 70 |
|  | Bibliography | | | | 71 |
|  | References | | | | 72 |

**LIST OF TABLES**

|  |  |  |
| --- | --- | --- |
| **Table No.** | **Name of Table** | **Page** |
| 3.1 | User’s Table | 20 |
| 3.2 | Expenses Table | 20-21 |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**LIST OF FIGURES**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Figure No.** | **Name of Figure** | | | **Page No.** | |
| 1.1 | Mode Preference Unleashed - Define Your Figures, Craft Your Story | | | | 3 | |
| 1.2 | Select Role for beginning Expense Enigma Journey | | | | 5 | |
| 1.3 | Login Credentials Web Page | | | | 8 | |
| 2.1 | User controlled expense dashboard | | | | 11 | |
| 2.2 | Split Nexus Architecture Diagram | | | | 12 | |
| 2.3 | Behavioral Database Change with Budget | | | | 15 | |
| 2.4 | Schedule Feasibility (Gantt Chart) | | | | 16 | |
| 3.1 | Split Nexus App Explore by User | | | | 17 | |
| 3.2 | Flowchart Diagram for Split Nexus App | | | | 20 | |
| 3.3 | Flowchart Diagram for Split Nexus App Login | | | | 20 | |
| 3.4 | Use Case diagram for Expense Enigma App | | | | 21 | |
| 3.5 | Level 0 DFD of Expense Sharing App | | | | 23 | |
| 3.6 | Level 2 DFD of Expense Sharing App | | | | 28 | |
| 4.1 | User/ Admin login Credentials form | | | | 31 | |
| 4.2 | Initially user select Mode Preference | | | | 32 | |
| 4.3 | HandiTech Mode Selected | | | | 32 | |
| 4.4 | Select Role either: User, Admin | | | | 32 | |
| 4.5 | Admin Entered Correct Credentials | | | | 33 | |
| 4.6 | Admin Entered Wrong Credentials | | | | 33 | |
| 4.7 | Admin Dashboard | | | | 34 | |
| 4.8 | Admin-user Dashboard | | | | 34 | |
| 4.9 | Forgot Password Module | | | | 35 | |
| 5.1 | Password Reset Link Generate | | | | 36 | |
| 5.2 | Email Reset Link Generate | | | | 36 | |
| 5.3 | Reset Password | | | | 37 | |
| 5.4 | Password Updated Successfully | | | | 37 | |
| 5.5 | User Expense Dashboard | | | | 38 | |
| 5.6 | Adding expense alert | | | | 38 | |
| 5.7 | New Expenses Added successfully | | | | 39 | |
| 5.8 | Graphical Expense Analysis | | | | 39 | |
| 5.9 | Expenses Spreadsheets View | | | | 40 | |
| 6.1 | User Profile Page | | | | 40 | |
| 6.2 | Financial Features | | | | 41 | |
| 6.3 | Help and Support Page | | | | 41 | |
| 6.4 | Raise Query Support | | | | 42 | |
| 6.5 | Dark Mode Enabled Feature | | | | 42 | |
| 6.6 | | Logout Expense Enigma Services | | | | 43 | |
| 6.7 | | Guest (Explorer Mode) Split Nexus Services | | | | 43 | |
| 6.8 | Guest User Prompt for Initial Budget | | | | 44 | |
| 6.9 | Guest User Budget | | | | 44 | |
| 7.1 | Guest User Expenses | | | | 45 | |
| 7.2 | Search Guest User Spending by Unique Guest user id | | | | 45 | |
| 7.3 | Privacy Policy for Guest user | | | | 46 | |
| 7.4 | Guest user Question mail to email id | | | | 46 | |
| 7.5 | Guest user unlocks ‘Reveal Hidden Mode’ for expanded features. | | | | 47 | |
| 7.6 | | | | Report Mode for User expenses | | | | 47 | |
| 7.7 | | | | User login for Reports | | | | 48 | |
| 7.8 | User invalid email Error (if user does not enter registered mail) | | | | 48 | |
| 7.9 | | | | 49 |
|  | | | |  |
|  | | | |
|  | | | |
|  | | | |
|  | | | |
|  | | | |
|  | | |  | | | |
|  | | |  | | | |
|  | | |  | | | |
|  | | |  | | | |