Digital Bus Pass System

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Abstract –

The Project is aimed to develop an website for social use named Digital bus pass system. This project brings the improvement to the user convenience and access to public transport through digital platform. The passengers could apply, save, and manage their bus passes using this software to achieve no paper tickets and reduced time at stations. The application also promises a secure payment mechanism, route information, thereby providing advanced overall experience. It also offers segmented discounts and concession schemes to various classes of users, such as pensioners, students, and workers. Nowadays to apply the bus pass it consumes more time ,but this application will be helpful to apply the bus pass digitally which save the time of passengers.

1. INTRODUCTION

The project digital passes can also be regarded as an innovative approach in the current context. Not just that, they provide such a basic facility which most people who are on the move are able to use with ease.

Most essential feature of the Digital Bus Pass System is that it offer a variety of pass options tailored to different demographics. Elder leaders and workers on the other hand can also be helped by the facilities by reducing those fares or giving them special passes for their purpose.

The absence of an digital bus pass system is very time consuming as the passengers has to wait in long to apply the bus pass ,so digital bus pass system plays an important role for time saving, or efficient for all individuals. The introduction of digital buss pass system leads to overcome some of these limitations by providing a more affordable, Digitization, and user-friendly alternative for offline pass purchase.

One of the standout features of Digital Bus Pass is the facility to make payments online and also Set up notifications for upcoming expiration's and account activity or Send messages or alerts to users regarding their passes.

2. Review of Literature

2.1 Study of Existing System

1. **Digital Ticketing:** In Maharashtra (MSRTC) we can apply for digital ticketing but there is no any facilities to apply digital bus pass. So passenger face challenges to apply bus pass manually.

2. **Time consuming:** Entire process of applying the bus pass is time consuming be- cause the time taken to collect documents like ID proof and photographs and standing in the long queue is very hectic process

3. **Admin Involvement:** Even though we can generate the bus pass through digitally but user has to go to depot to generate the pass thus only there is involvement of admin.

4. **Manual Document Creation:** In the process of applying the bus pass requires the manually verification of documents thus it consumes a lot of time.

5. **No feature of Notification and alters:** If the bus pass is going to expire then there is no facility to inform the passengers so the digital bus pass system will help to inform the passenger.

2.2 Findings from Literature Review

By understanding and taking overview of above existing bus pass system we have concluded that they have features as listed above. The absence of an digital buss pass system means that people must depend on the existing features, which may not always be very useful, time saving, or efficient for all individuals. The introduction of digital buss pass system leads to overcome some of these limitations by providing a more affordable, digitalization, and user-friendly alternative for offline pass purchase

2.3 Problem Statement

The current process of generating bus pass is very time consuming and become ineffi- cient. Students, Senior citizens and regular commuters often face long queues and delays in receiving their bus passes. Therefore there is a need for digitalizing this process that provides immediate access to essential information and improved document management and enhance user experience additionally bus pass renewals and verification adds administrative burden also the administrative officers will not be available for 24/7 hours thus these manual process for applying the pass is very time consuming.

2.4 Project Scope

The system will focus on improving the overall user experience by providing an interface that simplifies the bus pass generation and renewal processes. The solution will include renewal of

pass, online payment method, 24/7 availability, Online document submission. Transport authorities will be able to easily verify application, track passes and ensure payment is done. This system will send users the notifications regarding their passes accordingly. By offering a user-friendly platform for pass generation, this system can significantly reduce the time and effort required for creating pass, thereby enhancing efficiency and minimizing errors.
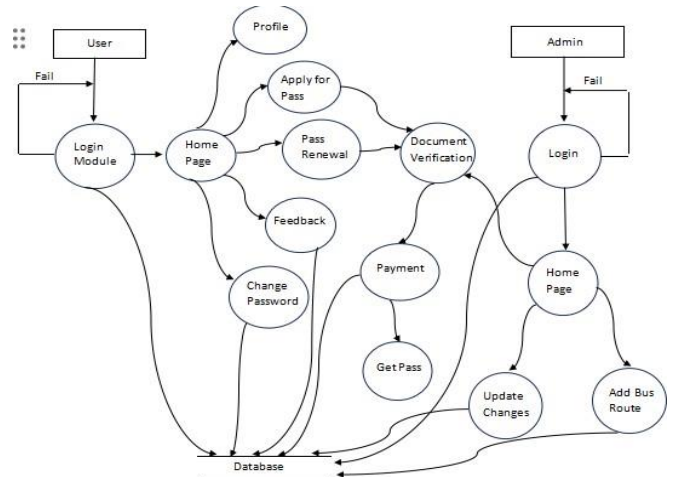
3. Objective of Proposed System

1. **Convenience and Accessibility:** Provide users with a digital platform to easily purchase and access bus passes via mobile application. Ensure the system is user- friendly for people of all age groups.

2. **Efficiency:** Streamline the process of pass purchase, renewal, and validation, reduc- ing the need for physical passes. Minimize time spent on boarding and transactions, improving overall bus pass service.

3. **Security:** Implement secure payment methods and data encryption to protect user information.

4. **Real-Time Updates:** Provide real-time information of pass validity, Pass status.

5. **Accessibility:** Ensuring that the system is accessible to all users which will be accessible for , including those with disabilities, and offering multiple payment options.
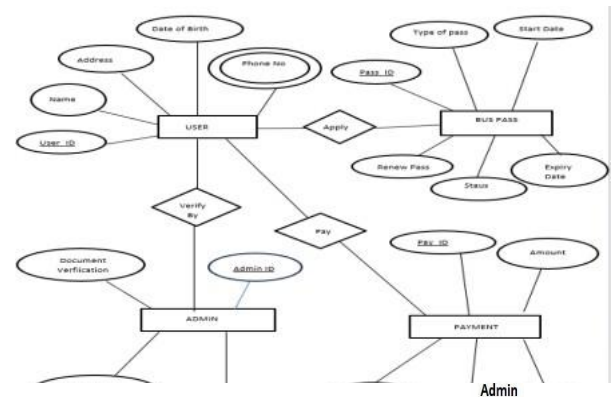
6. **Providing a variety of services:** A digital

bus pass system can provide services such as route and price information, pass renewal, cancellation, and updating.
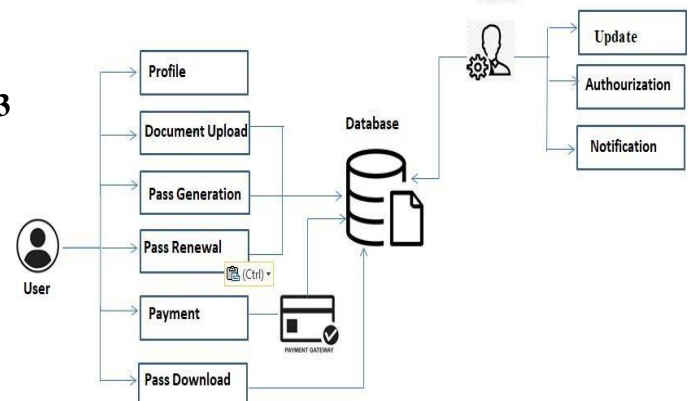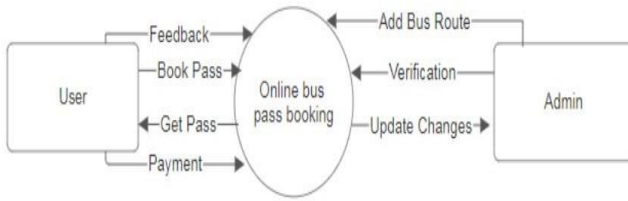
5. Methodology

5.1 Flow diagram

5.2 ER Diagram

5.3

5.4 DFD

5.5 Module of Software System

1. Admin: It will authenticate and verify the user's information.

2. User: They can apply and renew the bus pass.

3. Registration module: In this the user have to fill a valid credentials which contains his/her for creating an account. Once the account is created the users can get their pass easily.

4. Authentication module: Once the users account is created, the users entered de- tails is checked by the admin. Once the verification is done the user will be able to login with the provided id and password for renewing the existing user's bus pass.

5. Bus Pass Is Generated: The entered details by the user's has to be verified by an admin. If the admin identifies the person as an correct person, then a PDF form is generated that is an QR code and this QR code will be sent to the users registered mail id. This code contains the information of the bus pass such as user name, user id, expiration date.

6. Renewal of Bus Pass: For the bus pass renewal user should login with their given ID

No and password. When a user is authenticated, he/she can perform the renewal month of existing pass. Once the payment process is done users pass will be automatically renewed.

6. Requirements

6.1   Software Requirements

6.1.1   Frontend

1. HTML
2. CSS
3. JS
4. Bootstrap

6.1.2   Backend

1. ASP.NET
2. MY SQL
3. Node js

6.2   Software Requirement

1. Windows Xp, Windows 7(ultimate, enterprise)
2. Sql 2012
3. Visual Studio Code

6.3   Hardware with specification

1. Processor: Intel core i5 or higher
2. Hard Disk: Min 256GB or more
3. RAM : 1gb ddr2 ram
4. Motherboard : intel 915gvsr chipset board

7. Application of proposed System

1. **User Management:** Registration and Profiles: Users can create accounts to manage their bus

passes, track usage, and update personal information.

2. **Pass Generation:** Digital Passes: Users can easily generate and download digital bus passes, reducing the need for physical passes.

3. **Payment Processing**: Online Payments: Integration with payment gateways allows users to purchase or renew passes online.

4. **Route Management:** Provides information about bus routes, schedule

5. **Document Checklist and Upload:** Offers necessary required documents list and the ability to upload them directly to the system.

6. **Information Hub:** Serves as a comprehensive resource for users to access information about bus services, policies, and legal requirements related to bus pass generation.

7. **Multi-Platform Access:** Allows users to access the system from various devices, including smartphones, tablets, and computers, for added convenience.

8. Advantages and Disadvantages

8.1 Advantages

1. Less Time consuming

2. Provide fast and easy access

3. Cost Effective

4. Online Payment

5. User Friendly interface

8.2 Disadvantages

1. Digital Literacy

2. Technical Issue

9. Conclusions and Future Work

The digital bus pass system represents a significant advancement in public transportation management, providing enhanced convenience for users, increased digital knowledge. It will also provide the notifications accordingly. By digitalizing the traditional bus pass system, this system not only saves time but also provide better understanding of required specific documents. Additionally, updates facilitate better route planning and service reliability, ultimately contributing to a more sustainable public transport ecosystem.

10. Bibliography

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2. **https://www.researchgate.net/publication/362993588_Smart_Bus_Pass_System**

3. **https://.com/cheersbuddy/Digital-Buspass-System**