Online Ticket System

BSc (Hons) Computer science

Module: 3

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Introduction:

This report will outline a system project for local trains that allows users to book local train tickets and get ticket receipt online.

Aims and Objectives:

The main aim of this report is to design and implement an app (s-ticket) that will allow users to do the following:

1)Book a ticket online.

2)check availability of trains.

3)view available trains.

4)get a ticket and receipt online.

5)have a 3d secure payment method and offer various payment methods.

Overview:

This report will outline the different points which are Requirement gathering and analysis, Design, Implementation, testing and conclusion.

– Requirements Analysis: this will involve requirements that are important for online train ticketing system app this will include user requirements, functional and non-functional requirements software and hardware requirements will also be discussed

-Design: this will include things highlighted in requirements analysis being implemented in actual ticking system which may include flowchart diagrams (……………...)

-Implementation: this will include a ticket system which will require different database which will store different times of local trains, availability, and different payment method, this will also include software / hardware that are used for this process/

-Testing: this will discuss any methods used for testing and the results

-Conclusion: this will provide a conclusion of report which will include any future work that could be undertaken and any social/ legal issue with it and any problems which were encountered through this phase.

INTRO:

Requirements analysis is a process used to meet the demands and expectations of a new product. It involves communication with the stakeholders to define expectations, and document all the key requirements that are required by the product end user such as consumers. This also aims to recognise the user requirements, system requirements and functional and non-functional requirements for the ticketing system app.

User requirements:

Secure login function: this ensure that only authorised users can log in to make a reservation this will include the admin access to train officials.

Train reservation: this will allow authorized user to make a reservation on a train journey.

Pay function: this will allow users to pay with various payment method which includes credit/debit cards, PayPal and cashapp!

Admin access function: this will allow only admin users to make changes in trains destination etc.

System requirements:

Workstation which includes CPU, monitors and secure internet connection and a secure database is required.

Non-functional: these are the system attributes such as usability, security etc.

Use of encryption to avoid bots from booking tickets.

Should accept different payment methods.

Should include security feature in form of username and password to protect user data.

this system will have quick response rate alongside user friendly interface.

Functional: functions/feature a product must have for users to be able to accomplish their task / work.

Booking system needs to be associated with a single account.

Booking confirmation and receipt should be sent to user for them to show it to staff member.

Booking system should only allow users to book trains when they are available.

The second phase for online ticketing system is analysis phase. (The scope, budget, and time estimation for a project fully depend on how complete, clear, and relevant the requirements are. Standish Group’s 2018 CHAOS Report even lists incomplete requirements as one of the most common reasons for IT project failure).

Software engineers work with a range of system stakeholders which include managers and any end users of the product to find out about the application domain, the services that the system should provide, and the performance of the system. This process is mainly divided into 4 important points which are discovery, classification and organization negotiation and specification. One main problem with software elicitation is that most stakeholders do not know what they want, or they may have conflicting requirements which makes it impossible for developers to understand the user requirements therefore requirements gathering method is used to make sure end users’ requirements are met. These include group interviews and questionnaires/surveys.

Group interviews: these usually are similar to 1-1 interviews there are more people / groups are involved.one reason why group interviews are better is because it saves a lot of time therefore you are able to get opinion of more stakeholders in short amount of time. These can also be used to add new concept / ideas for the online train ticketing system. The discussions in focus groups are relaxed, and often participants enjoy sharing their ideas and perceptions. (Krueger and Casey 2009) suggesting that stakeholders will be more willing to give their opinions.

Questionnaires/Surveys: Questionnaires, or surveys, allow an analyst to collect information from many people in relatively short amount of time.as a railway company is likely to have thousands of stakeholders it will be easier and cost effective to get their input using questionnaires/surveys for system requirements .furthermore According to BBP Learning Media (2009, p.76), ‘the questionnaire is the primary tool of marketing research, a device for delivering questions to respondents and recording their answers’

Ethical/social issues: one main ethical issue with focus group that doesn’t exist in 1-1 interview is that some participants may not be able to voice their opinion freely this applies to people with introvert personality therefore they may not feel comfortable giving their opinion in group setting which will mean the information that is obtained is not representative and therefore the investment may get wasted however one way to overcome this is to do anonymous online questionnaire therefore meaning that people will be comfortable to give their opinion.one other problem with focus group is that it may not be representative of whole company if the sample is small therefore meaning that data that is collected may not be reliable one way to overcome this is by having a large sample of stakeholders that is representative of the company furthermore moderator bias also exist in focus group They may, intentionally inject their personal biases into the participants' exchange of ideas which may effect the requirements gathering of a system.

One issue with using online questionnaire is that it may not be representative as someone people physically impaired May not be able to fill in the questionnaire which may lead to inaccurate gathering , furthermore elderly may find hard to use devices such as laptop to fill in the questionnaire which may mean it isn’t representative of company as elderly people aren’t included which may lead to waste of investment /one way to overcome this is to offer 1-1 interviews with people who are disable or elderly to get the requirements gathering.

FLOWCHART

In order to show how the app is supposed to work the flowchart diagram was produced. This type of chart was the best fit for the project because the app isn`t very difficult and hence won`t require anything that flowchart can`t show. Also flowchart is easily readable by anyone and any person that has an access to it and need to understand how to app works from inside will be able to do so.

The flowchart that was produced has some necessary checks at the very beginning, it checks whether device is connected to the internet and if departure and arrival stations exist. After that the route has to be calculated and the price for one person of every train that has to be taken is displayed. Then the user has to choose how many people does he want to buy the ticket for and then the full price of all the tickets is displayed. User can add another journey and repeat everything or go straight to checkout where he is going to enter his personal details, such as email and billing address and banking details. Banking information is then checked and if it is okay and user has enough money on his bank account, he is charged and all the tickets are displayed on the screen and sent on his email.