Problem Identification

Mr Ademola owns a hotel in Nigeria known as Esteem Royal Suites, customers can only book rooms by being face to face with the receptionist. This is inefficient as days when rooms are fully occupied customers are unaware so they would have travelled the distance to receive bad news. He currently has no website for his hotel and in a technological age the use of a website would allow him to boost sales and increase marketing therefore attracting more customers.

This website would be able to display available/unavailable rooms, take inquiries via email, allow users to create accounts in which their information would be saved, display guest testimonials with their ratings of the various rooms.

Stakeholders

The main clients of the website would be Mr Ademola being able to how sales are going through viewing the availability of rooms and his customers being able to view and book rooms, customers can create accounts in which their data would be stored i.e., card information, preferences, name, age etc. The website would provide Mr Ademola with flexibility as customers are now able to book rooms instantly without making physical contact, this allows Esteem Royal Suites to operate as an E-commerce.

Customers aged 18 and above are now able to conveniently book rooms for leisure and share the link around to their friends, this would increase the promotion of Esteem royal Suites therefore attracting more customers for the business. When customers create accounts, their details are stored then automatically applied when they book rooms.

Customers can reserve rooms for specific dates, they would have the opportunity to give testimonials and ratings on rooms therefore giving Mr Ademola an idea of how customers feel about the hotel.

Investors can view the overall performance of the business by viewing the best-selling rooms, customers opinions

Why it is suited to a computational solution

This problem requires computational methods of implementing solutions. This is a website that allows users to create accounts and store details to use for future reference, also to provide Mr Ademola with statistics on how his business is doing. A database software would be needed to store the data of the individuals and provide updating statistics to Mr Ademola.

Computational methods the project uses:

Problem recognition

The main problem is finding a way to store and produce data that can be translated in various forms to aid Mr Ademola and his customers. The data stored in the website can be accessed either by the customers or Mr Ademola considering they have the required access to the website database. Furthermore, the website should be able to see the available and unavailable rooms which again can be tackled with the help of a secure back-end and database.

Problem decomposition

This project can be decomposed into the following steps:

1. Collecting data
2. Storing data
3. Allowing data to interact with the website
4. Displaying data

Data mining

User data will be collected to generate statistics for Mr Ademola, surveys can be done to help Mr Ademola specify what areas of his business needs to be improved or completely scrapped.

Thinking ahead

Identifying the data that’ll need to be collected and inputted in the right format to generate the best possible output, certain parts will be reusable in different sections of the program.

Logical Approach:

After critically analysing the said requirements of the software and the problem that are needed to be tackled, I decided to draw up a rough solution blueprint of the website such as what kind of programming languages that I think would be used as I proceed forward in the project.

Concurrent Approach:

I decided to keep a concurrent approach to the project working on multiple tasks simultaneously as to keep the completion time as short as possible and to complete the most work I can because some tasks are related to each other so having a concurrent approach makes the process faster and quicker.

Procedural Approach:

I decided to go with a hands-on approach for the project as I wanted to learn as much as I can while working on the project thus, I’m planning to implement procedural thinking to the project as well learn through my mistakes. I believe I have much to learn in some of the module of the project which would be a great learning curve for me but learning about them as I tackle them would be a great approach.

Interview

Interview questions

These are the key questions I asked the stake holders and doing this gave me a broader view on what I could implement into the design of this project.

Owner of hotel

Mr Ademola answered the following questions.

1. Do you think you can acquire more customers?
2. What aspects of the website would be beneficial to you?
3. Do you value design or functionality?
4. Are you comfortable with using a computer?
5. What’s your main aim of the website?
6. Do you want the website to have any additional features?
7. What design aspects do you have in mind of the website?
8. Which devices should be able to access the website?
9. How do you want the customers to reach you?

Leave any additional comments here:

Question one asks if the hotel is currently being as efficient as possible, and this shows why the use of the website would benefit Mr Ademola in his enterprise.

Question two and three identifies what Mr Ademola wants the website to do and it give me the developer a guide to work towards. It also specifies what Mr Ademola values on the website either its functionality or its design.

Question four assess if the stakeholder can operate the hardware the project is going to work on, this is important because if he isn’t able to use a computer the project would need to be developed on a hardware comfortable for the stakeholder.

Question five inquiries about another use of the website as it can be used as a way for Mr Ademola to gain more outreach and improve his business.

Question six asks about the additional features Mr Ademola is looking for if he has some in mind which he wants in his website.

Question seven identifies the design aspects Mr Ademola is looking for in the website if he has come kind of colour pallet he has in his mind

Question eight asks if Mr Ademola wants the website to be available across different website or he wants it limited to desktop only.

An additional space is left for stakeholders to make any comments that the questions may have not targeted.

Hotel management team

The management team answered the following questions.

1. What statistics would you want the website to produce?
2. Do you want customer testimonial emails?
3. How would the information gathered from statistics and testimonials help better the business”
4. How would you want to access this information?

Leave any additional comments here:

Question one asks the management team what specific functions they want the website to perform

Customers

Mary and Susan who regularly come into the hotel to get some away time from their homes answered the following questions.

1. Are you satisfied with the current state of the hotel?
2. Would you prefer online methods of booking?
3. If yes, what functions would you want implemented on the website?
4. Would your visits to the hotel increase if these functions are implemented?
5. Would you trust your details being stored on the website and what type of data?
6. Would you approve of your data being collected and used for research?
7. Have you booked rooms online for a different hotel?

Leave any additional comments here:

Question one, two and three showcases the current satisfaction levels of the stakeholders. This is important because it declares if this project is essential, and it gives customers the opportunity to implement their ideas into the website.

Question four shows if the development of the website would improve the current return rate of customers who will have a more convenient way to book rooms.

Question five and six asks if users give consent to their data being used to generate statistics and for Mr Ademola to use. It also gives users the option to state what type of data they would want collected by the website.

Question seven asks if customers are comfortable in using websites to book rooms this would make operating the website easier for them as they already have experience

An additional space is left for stakeholders to make any comments that the questions may have not targeted.

Interview responses

Owner of hotel

Mr Ademola

1. **Do you think you can acquire more customers?**

“Yes, I believe the current number of customers booking rooms could be improved, so I am looking for ways to do so”.

1. **What aspects of the website would be beneficial to you?**

“I would want to view the availability and unavailability of rooms and anytime via a portal, also I would want to view the opinions of customers which in hand would help me better the business for them”.

1. **Do you value design or functionality?**

“I value functionality because I want the website to function in a simple and effective way making it easier for customers to make bookings and to store their data even if the user is someone with little technological knowledge”.

1. **Are you comfortable with using a computer?**

“Yes, I am”.

1. **What’s your main aim of the website?**

“To allow customers to book and store their data conveniently retaining and attracting new customers”.

1. **Do you want the website to have any additional features?**

“Yes, I think having some kind of features that can add to the accessibility of the website would be great idea. I don’t have anything specific in mind but something like dark and light mode would be great”

1. **What design aspects do you have in mind of the website?**

“I want the website to have a professional look meanwhile maintaining all of its functional quirks it should give a good impression that we are a professional business”

1. **Which devices should be able to access the website?**

“I would want the customers to either access the website by desktop or phones so the website should be available on both of these platforms.”

1. **How do you want the customers to reach you?**

“I would like the customers to reach me through emails because it would make it easy for the team to manage them at ease”

Analysis

Mr Ademola is comfortable with the use of computers meaning this project would be used by him to the maximum capacity. He wants the website to function better than it looks meaning he cares more about the collection and storage of his customers data which can be used to benefit the hotel. His main aim is to provide convenience to the customers and the management team. He wants some additional features in the website as well so it opened up opportunity for me to experiment with different features. Furthermore, he wants the website to have a professional look while having all the functionality. And he wants the website to be available across different platform as well which would greatly increase the target audience for the website.

Hotel management team

1. **What statistics would you want the website to produce?**

““We would want to view the statistics of which rooms are being booked, how often they are being booked, customer preferences, customer ratings on rooms, frequent customers”.

1. **Do you want customer testimonial emails?**

“Yes, it would give us an idea on what customers think and what to improve in the hotel”.

1. **How would the information gathered from statistics and testimonials help better the business”**

“It would provide us with data we normally wouldn’t have gathered in an efficient manner, allowing is to conduct proper internal development to improve our services”

1. **How would you want to access this information?**

“Via portal only accessible by the management team with the right password”.

Analysis

The hotel management team want to access the data via a portal which will require a specific password only given to those in the management team. This portal will provide them with customer testimonials, room ratings, what rooms are being frequently booked, how often customers return and customer preferences. This would allow the hotel to operate as a more functional business taking on board the ideas of its customers and implementing them. It’ll also give the hotel a rough view on how they are operating in different time frames.

Customers

Mary

1. **Are you satisfied with the current state of the hotel?**

“It’s ok, there could be a few improvements”

1. **Would you prefer online methods of booking?**

“Yes, they would make my experience of coming to the hotel much better. I have been unfortunate enough to experience driving all the way to the hotel, getting there and finding out there are no available rooms. That was a dreadful day”.

1. **If yes, what functions would you want implemented on the website?**

**“**I would want to save my payment information on there making it quick and easy to make bookings, also I would want to save all the information required at the till to book a room i.e., name, age, gender and room preferences”.

1. **Would your visits to the hotel increase if these functions are implemented?**

“Yes, I would visit the hotel frequently if I can easily book rooms”.

1. **Would you trust your details being stored on the website and what type of data?**

“Yes, Mr Ademola is a trustworthy man and I’m sure whatever data is gathered will be used to benefit my experiences in the hotel”.

1. **Would you approve of your data being collected and used for research?**

“Yes”.

1. **Have you booked rooms online for a different hotel?**

“Yes, I am comfortable with making online bookings”.

Susan

1. **Are you satisfied with the current state of the hotel?**

“Yes, the hotel is perfect the way it is”.

1. **Would you prefer online methods of booking?**

“No, I prefer the traditional method of coming into the hotel and booking a room. If a website was to be built, I wouldn’t know how to operate it except a guide was provided. I am sure there are others who would require a guide to utilise the website to its full potential”.

1. **If yes, what functions would you want implemented on the website?**

“None”.

1. **Would your visits to the hotel increase if these functions are implemented?**

“My visits to the hotel will remain the same as I would not be utilising this feature”

1. **Would you trust your details being stored on the website and what type of data?**

“I am not really a fan of storing my data online”.

1. **Would you approve of your data being collected and used for research?**

“I don’t mind it being used for research, but it depends on how long the data is stored for as I am not comfortable with storing my data online”.

1. **Have you booked rooms online for a different hotel?**

“No”.

Analysis

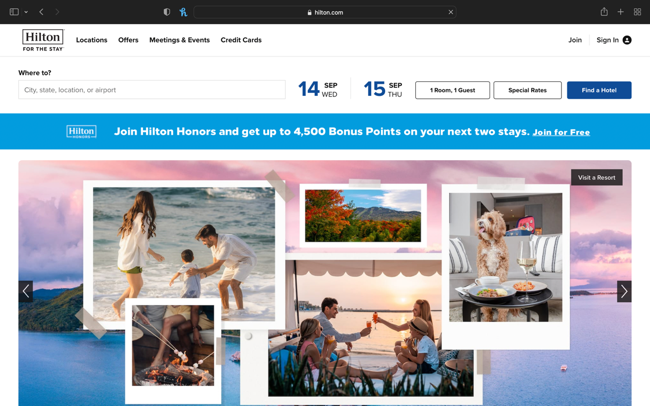
Mary and Susan are two different types of customers, Mary would prefer a website because she is more technologically advance and would utilise the website to the best of its functionality. However, Susan is a more traditional customer who prefers physical contact and even though it is seen as less efficient. She implied a guide be created for those who aren’t as technologically advanced as Mary because some people require extra help with technology. This question provided insight into the different types of customers visiting the hotel, those who are comfortable with the use of a website and those who are not. This places emphasis on creating a simple but effective website so it can be utilised by everyone.

Research

Similar solutions

Hilton hotels

Overview:

Graphical user interface, website

Description automatically generated

Graphical user interface

Description automatically generatedGraphical user interface

Description automatically generated

Graphical user interface, application

Description automatically generatedA screenshot of a computer

Description automatically generated

Hilton consists of a simplistic design which allows users of all technological backgrounds to easily operate the site and maximise its full potential. They have a fast room availability checker on the home page which allows users to search for a location, set the dates they are looking for, adjust the number of rooms needed or guests attending and search for rooms. Available rooms which fit the descriptions of the users’ search will be displayed allowing the user to book and enjoy. I have found the statistical side to Hilton’s website lacking, they have no management sign in hub which would display the data gathered from the customers’ testimonials and trends with room bookings.

Parts I can apply to my solution:

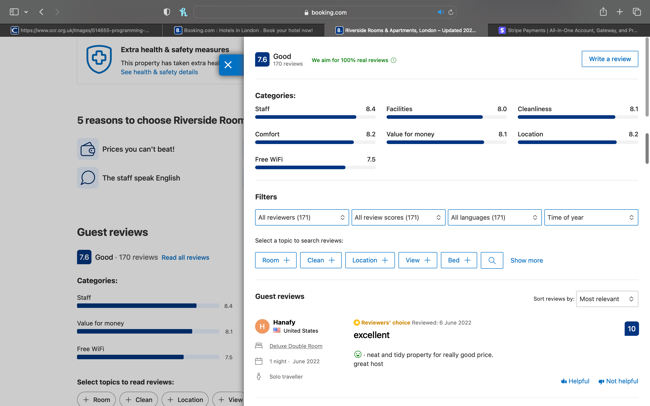
Hiltons landing page is like my solution, but my project will emphasise on the statistical benefits of a website which would allow my stakeholder to operate efficiently and maximise his profits. Hiltons front page design can be implemented into mine as they have a simplistic design which allows users of all technological backgrounds to utilise, this is something that would increase the usage of the website I am going to create. Their customer support section also has a sleek design which I would like to implement into my project.

Booking.com

Overview:

Graphical user interface, website

Description automatically generatedA screenshot of a computer

Description automatically generated

This sitter has a settings section which allows users of different countries to select their payment method allowing people from all over the world to book rooms. Booking.com has a distinct focus on the customers testimonials and ratings this allows for better knowledge of the experiences of customers. This part of the site is very essential to one of the main parts of my program which is statistics that can benefit the business and the experiences of customers. Also booking.com uses filtering to a good degree which shows various entities.

Parts I can apply to my solution:

Booking.com places emphasis on their customer testimonials which allows which I can apply to my program to benefit the statistical end of my project. With these testimonials I can create accurate data that can be used by the management team to further the business. The menu section which allows users to change their payment option would also be beneficial as users from all over the globe will be utilising this site and a stress-free payment method would be crucial.

Stripe

Overview:

A screenshot of a computer

Description automatically generated

Stripe is a payment processor that allows firms to attach their software to their websites and checkout with ease. The payment processor will be a vital part to my program as it saves the time and efforts of creating a whole new processor from scratch, I would need to link this to my program making sure it is compatible and can run with ease alongside the main program.

Limitations of the Proposed Solution:

Cost:

After going through all the interview questions and looking at example website. I feel like Mr Ademola wants all the features of proper business website and thus I feel like its going to negatively affect the budget of the website.

Management:

I feel like there a lot of modules and features to work on in the above-mentioned solution model thus management can be an issue as we proceed further into the development of the website. Integrating all the modules and working on them together can create a slight management issue but this is nothing which can’t be sorted with a little bit of planning.

Requirements

Software and hardware requirements

Hardware

A device capable of running the website on a standard web browser. The device is required to have a compatible software that would allow the collection of data. The standard peripherals would be a mouse, keyboard and monitor.

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| --- | --- |
| **Requirements** | **Explanation** |
| Desktop/Laptop | We should have a working laptop/desktop in order to work on the website to run all the required software and programs. |
| SQL supported Device | The device should support SQL connection and working if we are to save data collected form the website on the device |
| Peripheral Devices | We should have all the required peripheral devices such as mouse, keyboard, monitor etc to make the website and to interact with it. |
| Internet Connection | We are going to need a stable working internet connection to work on the website as website is internet based application. |

Software

Windows, MacOS or Linux – These operating systems support the use of Python, HTML and CSS.

HTML and CSS interpreter – The frontend of the website would be designed using this tool.

|  |  |
| --- | --- |
| **Requirement** | **Explanation** |
| VS Code | For coding and managing the project I’ll be using VS code as I’m well versed with is interface so its going to be easy for me to navigate around. |
| HTML | For making the structure of the website I’ll be using HTML as it is mostly used for website structure. |
| CSS/SCSS | For adding design/colours into the website I’ll be using CSS which is commonly used to add style to the website. |
| JavaScript | Adding in page dynamic features and making changes to the same page I’ll be using JavaScript. |
| Xampp | For hosting the website on a local Sever and making changes to the live website I’ll be using Xampp |
| Internet Browser(Google Chrome) | For all my research and hosting my website locally I’ll be using an internet browser either Google Chrome or Opera. |
| PHP | To make the website dynamic and work with the Database I’ll be using PHP. |

Xampp– The backend of the website would be designed using this tool.

PHP – An extremely popular scripting language that is used to create dynamic Web pages.

Stakeholder requirement

Design

Functionality

Success Criteria

|  |  |
| --- | --- |
| **Criteria** | **How to evidence** |
| Main front page | A screenshot of the front page |
| Simple design | Screenshots of the different pages and storyboarding the pages |
| Simple calibration design | Screen shot showing the calibration process Storyboarding the pages |
| An adaptable site that changes to fit the device | Screenshot showing the different ways the website displays on different devices |
| A login in page for user | Screen shot of the user login hub and a test plan to check if the page is working or not |
| A login page for hotel management team (only accessible by a specific password) | Screen shot of the hotel management login hub, a screenshot showing the error displayed when the user enters the wrong and correct password |
| A hub that shows the accounts of customers | Screenshot of the hub and a proper testing plan to test that the hub show s all the accounts of customers |
| A customer support hub | Screenshot of the hub with a testing plan to show that he customer support is working ant eh email are successfully being delivered. |
| A hub that shows customer testimonials | Screenshot of the hub and to see all the testimonials are being displayed on the website |
| A hub that shows statistics gathered from customers | Screenshot of the hub and test plan to make sure that all the statistics gathered by the website are correct |
| A point tally system for frequent customers | Screenshot of the hub showing the points gathered by customers |