



Contact Management System

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Abstract. Contact management is an important part of everyday work. People exchange business cards to try to enter each Other's contact lists. Local businesses provide refrigerator magnets and calendars so they will be called on when a particular need arises. People who use the telephone extensively are selective about who they add to their speed dial lists. Contact management and conversation management are linked. Many busy professionals discourage voice calls and messages, because email enables them to better manage their time, conversations, and contacts. People also spend large amounts of time transcribing voicemail, browsing email archives and writing to do lists - all of these activities are intended to help track the content and status of outstanding conversations. Together, these practices reveal some of the complexities of contact and conversation management. We investigated contact and conversation management by carrying out twenty semi-structured interviews with professionals in assorted fields. Key properties of technologically-mediated conversations identified were: (1) they are extended in time, which means (2) people typically engage in multiple concurrent conversations, and (3) conversations often involve multiple participants. These properties led to a significant memory load for our informants: they spoke of the difficulty of keeping tracking of conversational content and status, as well as the identity, contact information, and expertise of their conversational partners. People respond to these problems by trying to make key aspects of their conversations persistent; however, with current support tools, this strategy meets with mixed success. Building on the findings of our study, we present a new support tool that aids in managing contacts and conversation status.

Keywords. Api call, Contact recall, memory aid, social contact management, Web intelligence, Social Contact Management, Address book, toggle, crud.

1. Introduction

An online address book is a database hosted in the internet that stores names, addresses and other contact information for a computer user. Online Address books allow easy access to the user's friends, family, business associates and others by maintaining their email and other contact details on their computer. Address books can be software based, or accessed online or through a network.

With the development of information technology, the use of digital tools (e.g., digital contact books, e-calendars) has gained much attention nowadays. However, while enabling reliable storage and efficient query support, these digital tools still face several issues. Among these issues, the reliability of data retrieval is significant. To conduct successful searches on data retrieval tools, users must remember sufficient details about the item they want to retrieve in order to construct a query (e.g., terms in a document, the name of a contact). However, psychological research indicates that people are not good at remembering precise details. Instead, they tend to remember diverse memory cues relevant to the item. In modern life, people participate in various social activities and meet numerous people day by day. All the acquaintances form a social contact network (SCN) of a person. The ability to manage the SCN and leverage it to get things done, however, becomes a significant, yet difficult task. The major trouble here is that people find it impossible to maintain the ever-increasing contact information merely using their memory. Various aiding tools are thus exploited. Before the era of computing, it often takes the physical ways like address book writing and note taking, but they suffer from problems like possible loss and inefficient search support. Currently, the focus has been changed to digital contact tools. Though enabling reliable storage and enhanced search support, it still faces several issues.

2. Research Methodology

The main objective behind building this project is to learn how to create a web application using react. React is a technology which is developed by facebook and is widely used in the industry for building the websites. There are two critical aspects to contact management. The first is tracking complex information about contacts' addresses and whereabouts. The second is maintaining

relationships by keeping in touch. Our informants used a plethora of different tools for contact management including: dedicated tools, such as personal address books (both digital and physical), corporate address books and organisation charts; device specific addressing using email address books, speed dials on their phones; other generated information such as fridge magnets or business cards (sometimes stored in rolodexes); hotlists - small sets of important frequently called numbers usually placed in salient locations; ephemeral contact information on sticky notes or on calendars; indirect search - extracting contact information by searching through email or phone records; social search – asking other people who might know.

The first and the most prominent step of establishing a contact management system is to engage directly with the customers seeking a solution to their problem through the product or service the company is providing.

Companies can initiate contact management by implementing one of the following ways.

- You can directly engage with the customer by asking him about the products or services being promoted or advertised by the company.
- You can make cold calling, which includes calling up a particular person and asking him whether they might be interested in the new product or scheme inaugurated by the company.
- You can contact prospects by internal or external references, i.e., known acquaintances, relatives, or friends of a pre-existing customer.
- You can make prospects take online surveys and past track records of the customers' web surfing.
- You can participate in online events and exhibition events where potential customers can give their details and express their perspectives about the product or service of a company.

When the lead has been created by acting upon the strategies mentioned above, it is then time to build on the information. It is strongly recommended to know as much information as possible about a customer's preferences and acquire extensive knowledge about how much money a potential customer is willing to spend. It will convert a customer into ever paying client.

Through this methodology, an organization can outreach more customers.

By acquiring more extensive knowledge about the customers' needs, companies can significantly emphasize the sales and convince their customers to buy from them.

It is often an excellent practice to make financial dealing face-to-face, leading to better interaction between the two parties.

Thereby your visitor has completely transformed into a customer. At this point, it is strongly recommended to register each customer with the company database.

The companies can manage to upsell their all products by accumulating customer feedback regularly. The organization can pay special heed to customer preference and psyche and make their product synchronize with customer needs.

3. Hypothesis

The hypotheses are derived from the criteria suggested by our users in the field study. Communication. The communication hypotheses concern frequency, reciprocity, recency and longevity. First we expected important contacts to interact more frequently with the user. Frequency is defined as the total number of messages exchanged between contact and user, divided by the longevity of their relationship.

4. Method

If you've ever worked with a database, you've likely worked with CRUD operations. CRUD operations are often used with SQL, a topic we've covered in depth (see this article, this one, and this one for some of our recent SQL tips and tricks). Since SQL is pretty prominent in the development community, it's crucial for developers to understand how CRUD operations work. Within computer programming, the acronym CRUD stands for create, read, update and delete. These are the four basic functions of persistent storage. Also, each letter in the acronym can refer to all functions executed in relational database applications and mapped to a standard HTTP method, SQL statement or DDS operation. It can also describe user-interface conventions that allow viewing, searching and modifying information through computer-based forms and reports. In essence, entities are read, created, updated and deleted. Those same entities can be modified by taking the data from a service and changing the setting properties before sending the data back to the service for an update. Plus, CRUD is data-oriented and the standardized use of HTTP action verbs. Most applications have some form of CRUD functionality. In fact, every programmer has had to deal with CRUD at some point. Not to mention, a CRUD application is one that utilizes forms to retrieve and return data from a database.

The first reference to CRUD operations came from Haim Kilov in 1990 in an article titled, "From semantic to object-oriented data modeling." However, the term was first made popular by James Martin's 1983 book, Managing the Data-base Environment.

5. Executing Operations

Based on the requirements of a system, varying user may have different CRUD cycles. A customer may use CRUD to create an account and access that account when returning to a particular site. The user may then update personal data or change billing information. On the other hand, an operations manager might create product records, then call them when needed or modify line items.

During the Web 2.0 era, CRUD operations were at the foundation of most dynamic websites. However, you should differentiate CRUD from the HTTP action verbs. For example, if you want to create a new record you should use "POST." To update a record, you would use "PUT" or "PATCH." If you wanted to delete a record, you would use "DELETE." Through CRUD, users and administrators had the access rights to edit, delete, create or browse online records.

An application designer has many options for executing CRUD operations. One of the most efficient of choices is to create a set of stored procedures in SQL to execute operations. With regard to CRUD stored procedures, here are a few common naming conventions:

- The procedure name should end with the implemented name of the CRUD operation. The prefix should not be the same as the prefix used for other user-defined stored procedures.
- CRUD procedures for the same table will be grouped together if you use the table name after the prefix.
- After adding CRUD procedures, you can update the database schema by identifying the database entity where CRUD operations will be implemented.

6. Description and implementation of Modules

Create module

The create function allows users to create a new record in the database. In the SQL relational database application, the Create function is called INSERT. In Oracle HCM Cloud, it is called create. Remember that a record is a row and that columns are termed attributes. A user can create a new row and populate it with data that corresponds to each attribute, but only an administrator might be able to add new attributes to the table itself.

This module will create the entry of the database when clicked on the submit button after filling the form. To implement this we will be giving the input that is the information that we enter in the datafields which are available in the form which also consist of one submit button which once clicked will trigger an API call to send that data to the backend and store it in the database. We can check the output of it by calling another API to fetch the data in the database to verify that our data is stored or not.

Fig.1 UI of create module

Read module

The read function is similar to a search function. It allows users to search and retrieve specific records in the table and read their values. Users may be able to find desired records using keywords, or by filtering the data based on customized criteria. For example, a database of cars might enable users to type in "1996 Toyota Corolla", or it might provide options to filter search results by make, model and year.

This module will get all the contacts stored in the database. It won't require any particular input as the API responsible for getting all the contacts will get called on the page render itself, which in return will populate the page with all the contacts in a tabular format as an output.

This module have the simplest API call among all the modules as it doesn't require any prerequisite information to fetch the data like unique id.

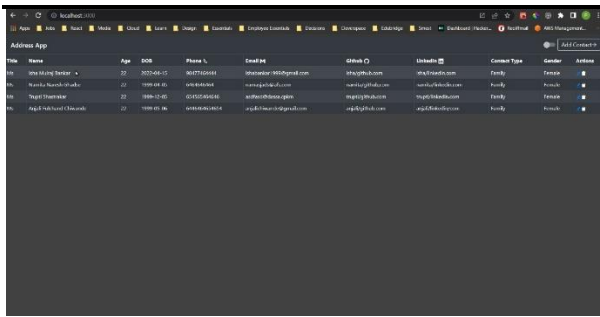


Fig.2 UI of all contact

Read particular module

This module will require a unique id to get a particular piece of information from the database whenever a user wants to update any contact details. Then even that update module will first make a GET API call to first of all get the piece of information to update. Now this module requires an input of id string that is automatically assigned to every contact on its creation, which will be unique throughout its lifetime in the database. Now in our case, once the particular contact information is retrieved from the database, our same create contact form will be used to populate using that retrieved data.

Update module

The update function is used to modify existing records that exist in the database. To fully change a record, users may have to modify information in multiple fields. For example, a restaurant that stores recipes for menu items in a database might have a table whose attributes are "dish", "cooking time", "cost" and "price". One day, the chef decides to replace an ingredient in the dish with something different. As a result, the existing record in the database must be changed and all of the attribute values changed to reflect the characteristics of the new dish. In both SQL and Oracle HCM cloud, the update function is simply called "Update".

This module will allow us to edit the existing contact details and update their information in the database. Again, it will require a unique id of the contact which gets assigned to it on its creation. This will first make a GET API call to read the contact that we want to update, which will in return populate the contact creation forms with the retrieved fields of that API call. Now, the user here can edit the information that he wants to update regarding that particular contact, then again press a submit key to finally make an update API call, which in return updates the information of that particular contact in the database.

Delete module

The delete function allows users to remove records from a database that is no longer needed. Both SQL and Oracle HCM Cloud have a delete function that allows users to delete one or more records from the database. Some relational database applications may permit users to perform either a hard delete or a soft delete. A hard delete permanently removes records from the database, while a soft delete might simply update the status of a row to indicate that it has been deleted while leaving the data present and intact.

This module will delete the particular contact details from the database. It will require a unique id of the contact which gets automatically assigned to it on its creation. Using this key, this module will make a delete API call which will delete that particular piece of contact associated with that unique id from the database. The output of this change will reflect when you make a GET ALL API call; you won't see that particular contact now in the list of contacts available in the database.

Toggle Theme Module

Toggle is basically a component that allows changing the state of the UI of a site. It's actually a checkbox that we will hide with some of our HTML and CSS skills.

Dark Mode

A UI that generally uses a darker color palette.

Light Mode

A long-standing but not immemorial default, in which a UI uses a lighter color palette.

Despite the vociferous support of some, Dark Mode is not held to be superior by all. The preference for either mode is subjective. A user might even prefer to use different modes at different times of day or depending on their location. Perhaps you're browsing Reddit in bed beside your trying-to-sleep spouse who complains about the light from your 32-inch laptop. You just switch modes and, oh my Zsh, Dark Mode saves a marriage, again. Switching between a dark color palette and a light one involves more than just switching between darker and lighter background colors. Most importantly, you need to ensure that colors on both palettes meet contrast requirements for accessibility. Many colors will not be interchangeable between modes. This means that you may need different primary or brand colors for each palette.

This module will enable the user to view our application in a light theme or dark theme. It will basically use a switch which is available in the navbar to toggle the theme of our UI. We are programmatically assigning CSS to it like if we click on it, if the current theme is dark, then it will change to light and if the current theme is light, it will change to dark and when it gets changed to dark, then we have defined dark color for it. We are changing the colors programmatically; we have assigned a click event listener on that switch, so basically on the click event, it first checks what is the current theme and if the current theme is dark, it will change back

to light color that we have defined in the code and if the current theme is light theme then it will change back to darker color which we have written in the code.

7. Conclusion

So far, we've discussed all the critical aspects of the contact management automated system. So far, whatever has been said, it should be taken into consideration that the success of any business, whether a large organization or a small startup, solely relies on the customer's level of satisfaction. Because of these reasons, large organizations significantly emphasize the automated contact management system to reduce the company overhead and enhance their revenue.

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