University of Regina | Faculty of Engineering and Applied Science

Software Systems Engineering Capstone Project Report Document

Pencil

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Section 1 - Project Description

1.1 Project
Pencil

1.2 Description
Pencil is a software as a service application (SaaS), that simplifies the complicated task of customer scheduling. By allowing business owners to easily create their own online schedule, potential customers can see available time slots, and book desired appointments. Furthermore, users are able to use Pencil to find other businesses that are also using Pencil, making it a one of a kind business aggregator.

1.3 Revision History

Date	Comment	Author
2019-10-30	Initializing the document, populating section 2	Paul Hewitt
2019-11-22	Populating document for Project bazaar	Ian Quach

Section 2 - Overview

2.1 Purpose

We are beginning to see more and more entrepreneurs and small businesses pop up everyday. It is important that this market is supported by scaleable, and simple technology. Pencil provides any industry that requires scheduling with a platform that is enjoyable for both customers, and business owners alike. Applications that currently exist lack key features that are necessary for an enjoyable experience.

Pencil we include gamification features, SMS alerts, third party integration (Social Media, Square Payments), and customer tracking. The gamifications aspects help motivate continual involvement and use by the customer with the business. Maintaining a customer's persistent memory allows the business to track their needs and wants.

The intended audience of Pencil is both business owners and their customers. Large, and small businesses alike will be able to leverage the vast array of features designed to streamline the scheduling experience. Customers will be able to use Pencil to find specific businesses in their area, and then book appointments with each one. Business owners will have additional access to tools in order to keep track of, and reward their customers. These features will be encapsulated away from the customer, included only in the business owner dashboard. It is hoped that one day Pencil's data could be available in API form, allowing developers to work with, and manipulate the data, similar to services such as Google Calendar.

2.2 Scope

Pencil is an all encompassing customer scheduling, and management application. On top of this, it will work as a business aggregator, working like a phone book, in which users can search for businesses, and then book desired appointments. All the data used in Pencil will be user generated, and it does not pull in any outside business data. Data will be tagged by the user, in order to be searched more efficiently. Pencil will integrate with certain third parties, in order to streamline the user experience. Social media integration will function as user login and account management. Square can be integrated to handle payments. Amazon SNS will be the platform used to send out SMS messages to customers.

2.3 Requirements

Pencil needs, based off of our interview with our client, to be a lightweight easy to use client. Since the client will be a nontechnical person it also needs to be very low maintenance which requires sound software development principles. The customers will also need to be able to access the clients services at all times to book appointments so in tandem with that a web application that is accessible anywhere serves those needs. The entrepreneurs will also need a secure login for their users as personal information may be stored on our service. Another important feature is the gamification elements which support the users to remain with the business. Social media integration will also help bolster the continued support from the customer. On the UI/UX front the web application will need to be modular or easily configure to fit the client's needs quickly. A separate dashboard for both customers and owners is

necessary.

2.3.1 Estimates

#	Description	Hrs. Est.
1	UI/UX prototyping	
	Complete Frontend design	
	Social Media Integration	
	Gamification aspects	
	Gamified Notifications	
	AWS setup	
	Secure login	
	Total:	

2.4 Business Model

The business model for Pencil will be a ‘Freemium’ business model. You are able to use a free version of the application but it will lack certain quality of life functionalities. Using the premium version will include all of those features.

2.5 Competitive Advantages

Currently the main competitors consist of SquareSpace and YouCanBook. SquareSpace offers a template based website builder than can be used to book clients into a calendar and take payments. Beyond the use of a basic day planner it does not offer any of the innovations that Pencil offers. No SMS alerts, third-party integration, customer tracking, or gamification elements. YouCanBook is a bit more robust and friendlier on the UX department. YouCanBook offers SMS alerts and third party integration, like Facebook and Instagram. While it does offer quite a decent scheduling application there is still no customer tracking. Pencil intends to offer all of that with the addition of contactless booking. The gamification will motivate clients to continually use the business earning rewards that the business owner can dictate. The customer tracking allows for a persistent memory of the client’s needs and wants so there is no guesswork if the client gives vague requirements.

Section 6 - User Stories

6.1 Basics

Customer

- As a customer I want my own login information
- As a customer I want to be able to see appointments offered by a service
- As a customer I want to book my desired appointment
- As a customer I want to receive notifications about my appointment
- As a customer I would like to prepay for my appt
- As a customer I would like to rebook easily
- As a customer I want to be able to make changes to my appointment or cancel if necessary
- As a customer I would like a way to contact the service provider
- As a customer I would like to be rewarded for reusing a serviceAs a customer I would like to see the various services offered around me

Service Provider

- As a service provider I would like to create appointments to be filled by customers
- As a service provider I would like these appointments to be customizable and flexible
- As a service provider I would like to be able to contact my customers
- As a service provider I would like to accept payment
- As a service provider I would like to track all existing/previous customers
- As a service provider I would like to offer rewards
- As a service provider I would like to limit who can book

6.2 Andy/ChungCuts

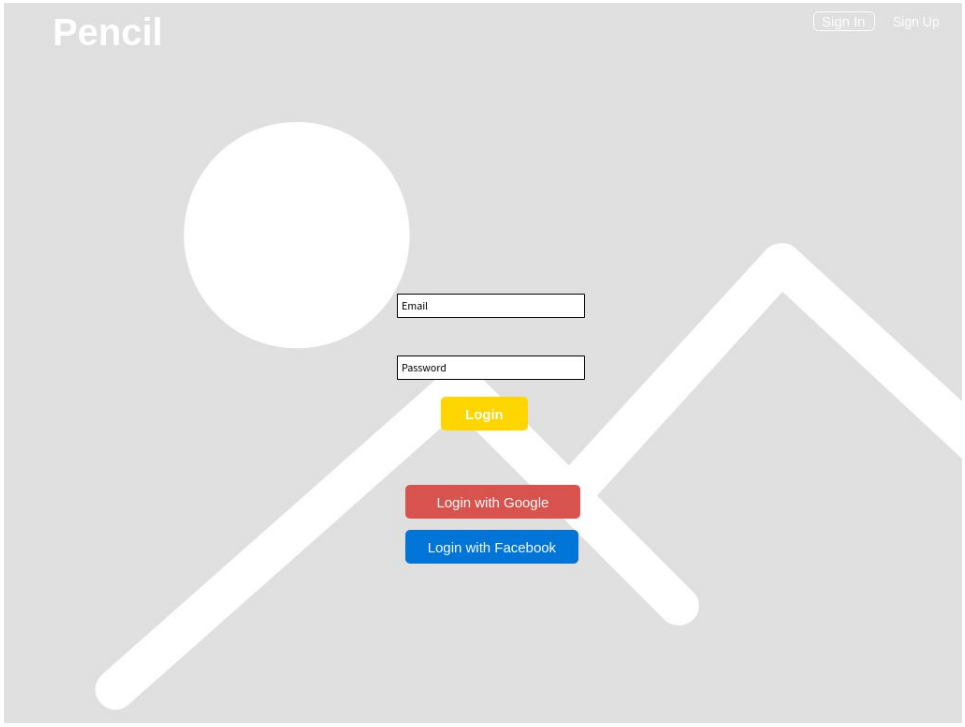
- No login for users
    - Slow and tedious. Users should be able to book quickly, and efficiently.
    - Can use Phone Numbers to verify the users
    - Use Phone numbers to track the users
    - First, Last, and Phone number should be the only required fields
- Ensure different ‘types’ of time slots
    - YouCanBook only has one type of time slot
    - Would like to see:
        - Regular Appt
        - Hair Dye
        - Lunch
        - Personal
        - Etc.

- Be able to have control over his employees schedule as well
    - Essentially have some sort of hierarchy system in place
    - Owner of the business could have admin rights
    - Employees could have their own pages/schedules, the owner should have control over them
- User Tracking
    - See how many times someone has been in that month, how many times total, etc
- Be able to pre pay for appts
    - Would be great for last second cancels or no shows
- Automatically send reminder texts to customers
    - Can set and forget
    - Send a text one day before, one hour before, etc

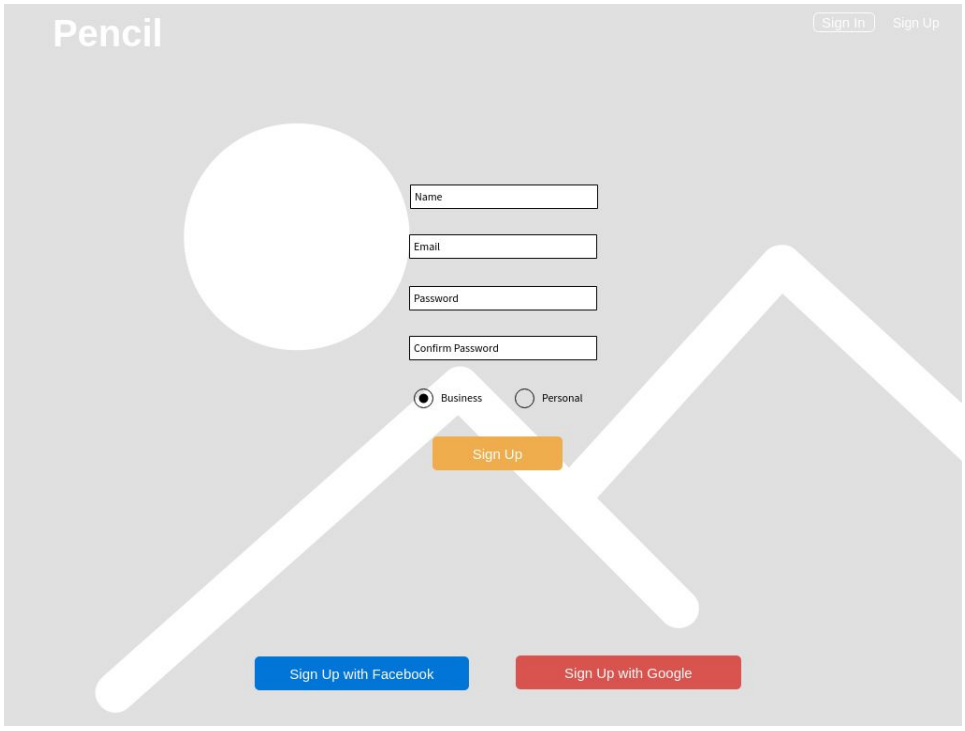
Section 7 - User Interface Design

7.1 User Interface Design Overview

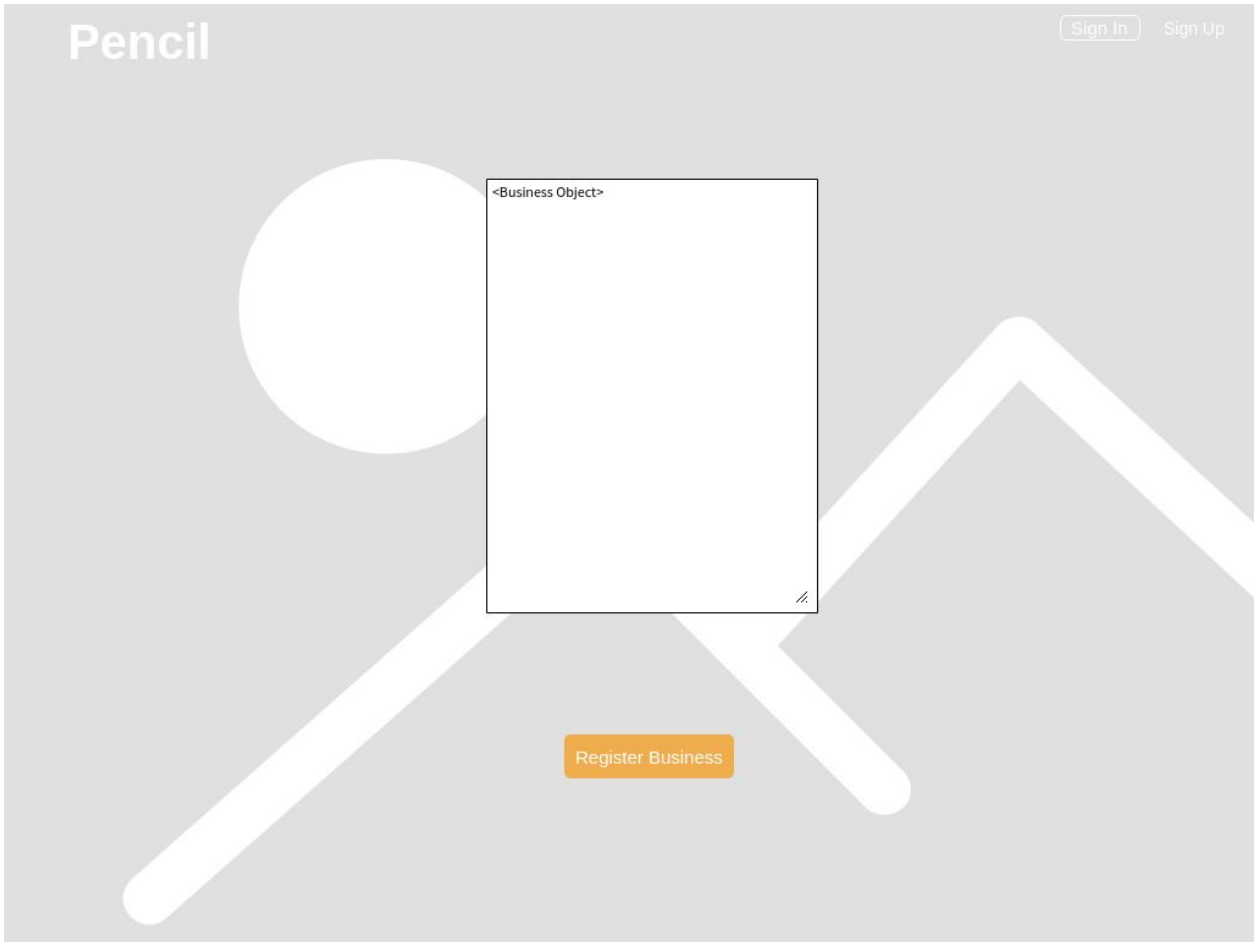
Customer sign in



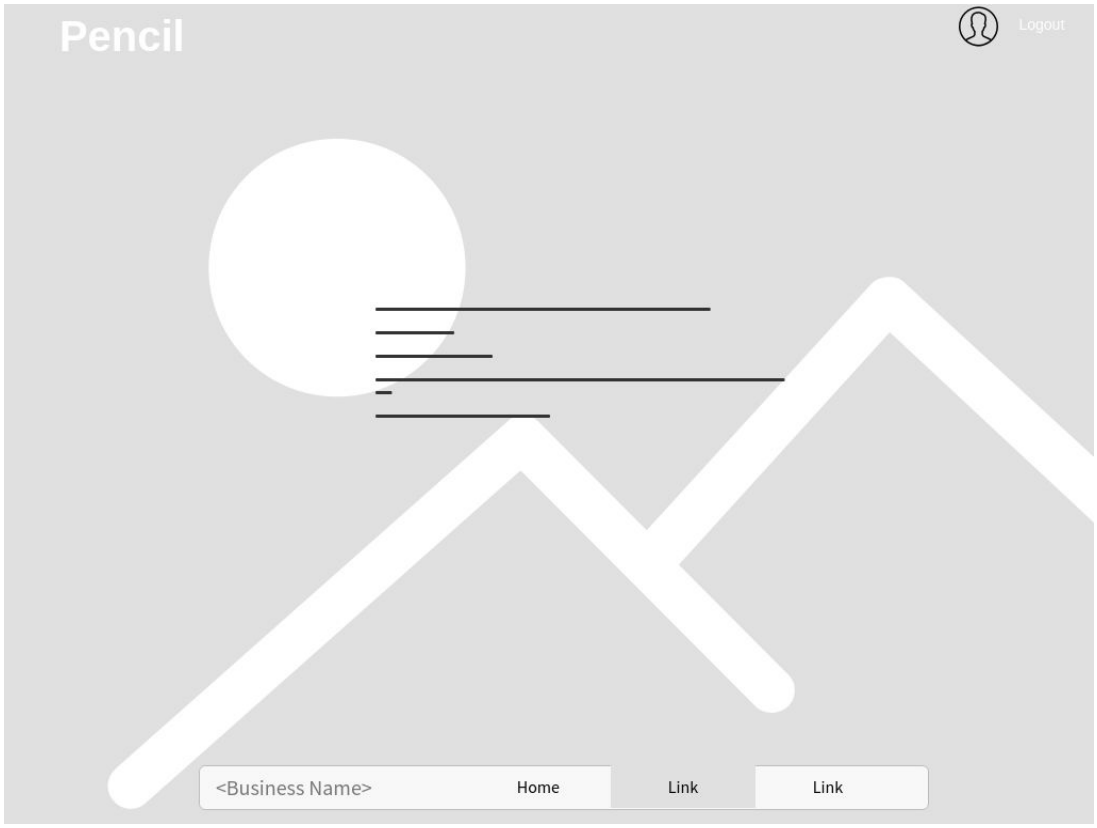
Customer sign up

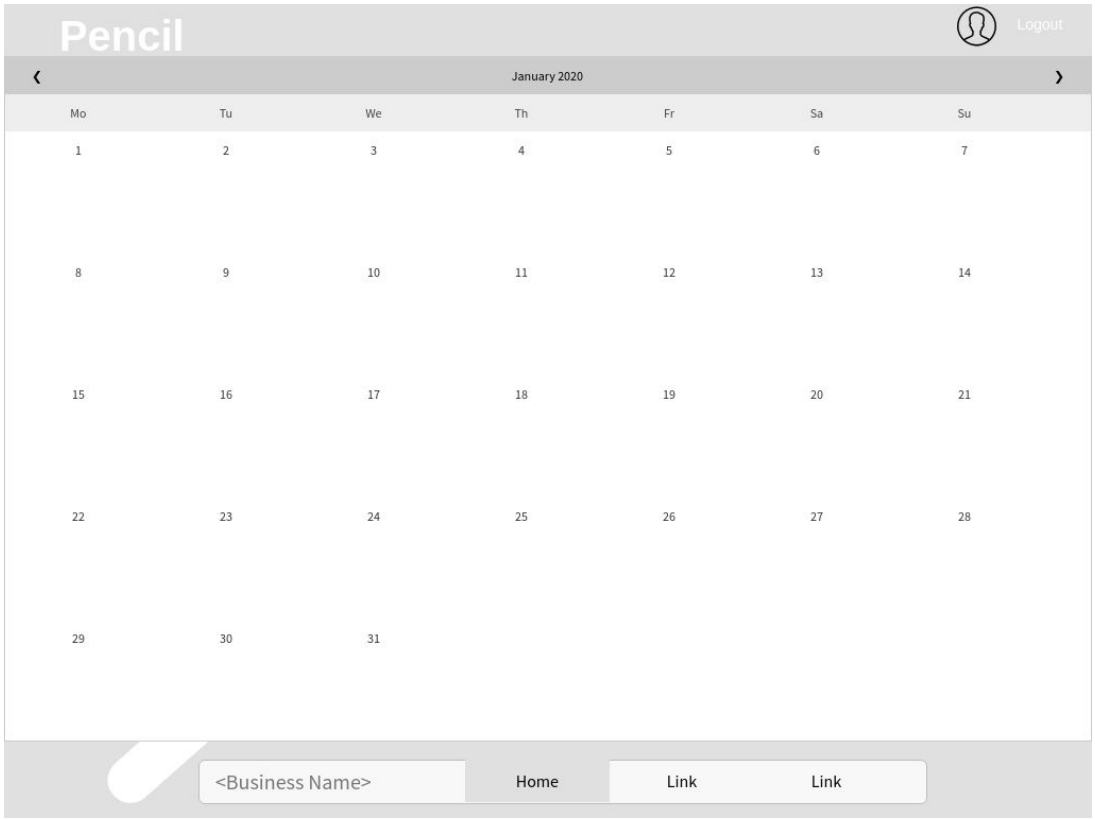


Business sign up

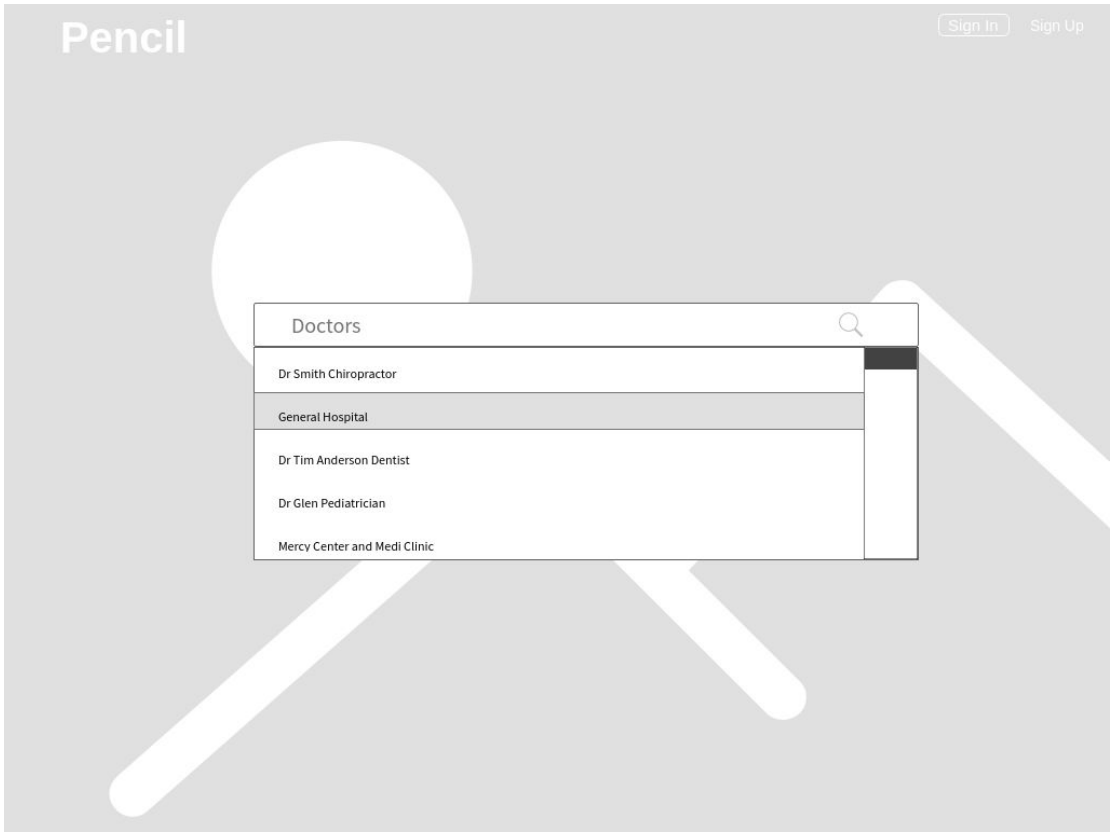


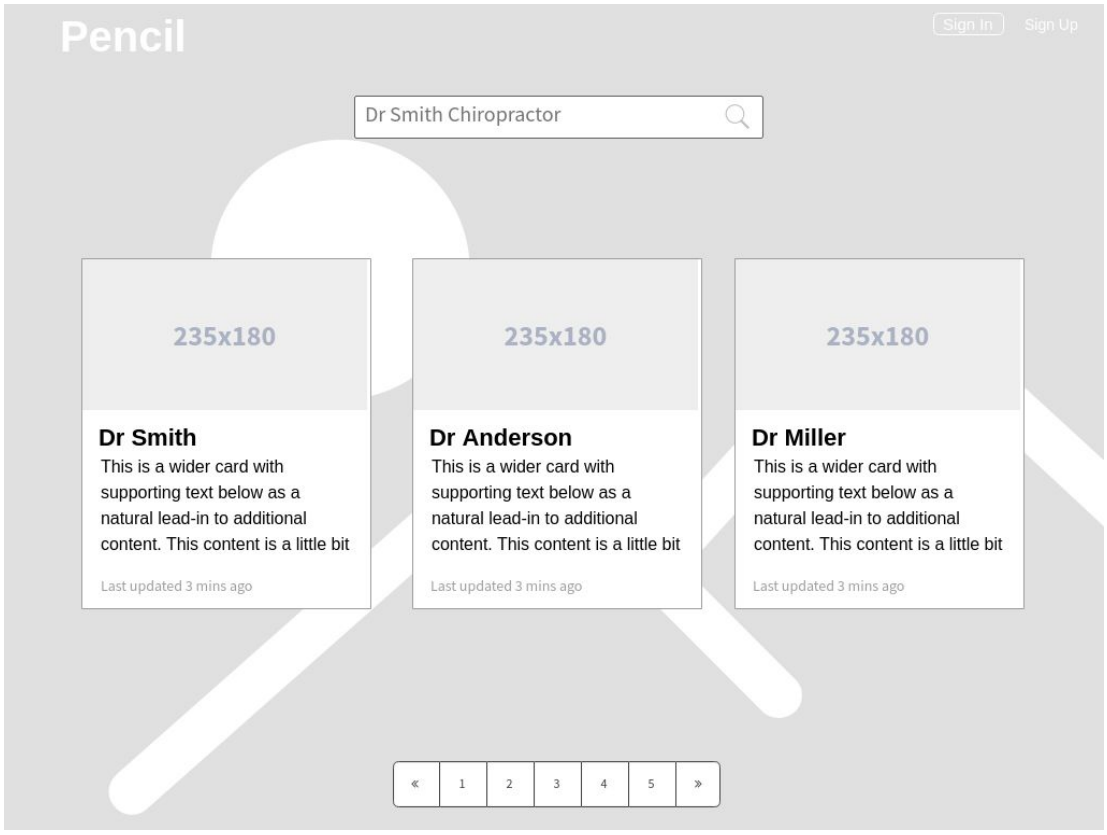
Owner view/owner tools





Search


Pencil
Sign In
Sign Up
Doctors
Dr Smith Chiropractor
General Hospital
Dr Tim Anderson Dentist
Dr Glen Pediatrician
Mercy Center and Medi Clinic


Pencil
Sign In
Sign Up
Dr Smith Chiropractor
235x180
Dr Smith
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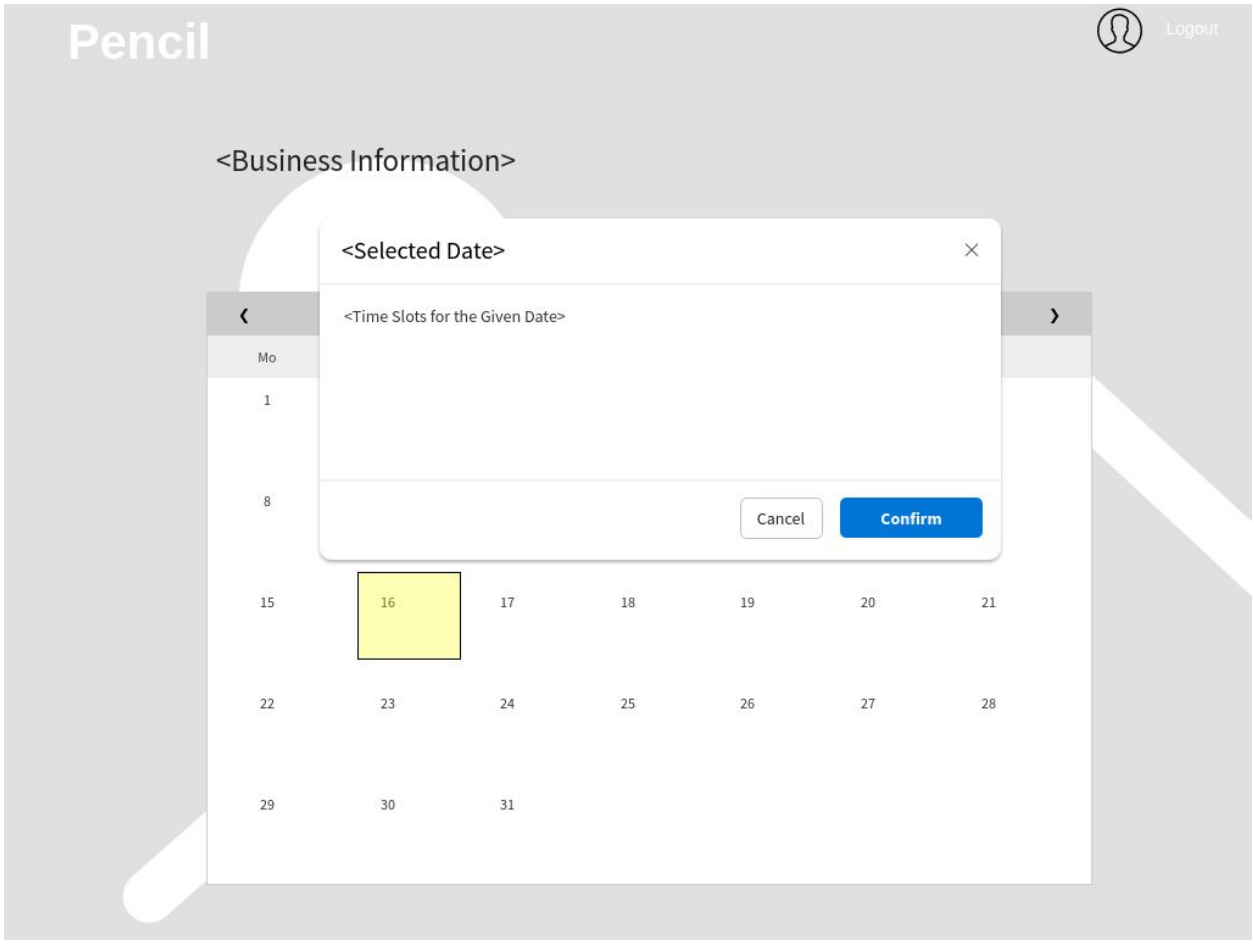
Last updated 3 mins ago
235x180
Dr Anderson
This is a wider card with supporting text below as a natural lead-in to additional content. This content is a little bit
Last updated 3 mins ago
235x180
Dr Miller
This is a wider card with supporting text below as a natural lead-in to additional content. This content is a little bit
Last updated 3 mins ago
« 1 2 3 4 5 »

Time Picker Modal



Section 10 – References

Andy Meeting - 1