LOGIN TO WORK WITH PHOTO VERIFICATION

Software Engineering Project

Team Members
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Photo Check-In

15mm

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Team Profile

Domingo Martínez Jr. – Strong in Mathematics and programming. B.S. in Mathematics from UT Austin, 4.0 GPA in all computer science classes. Good organization skills. Currently taking software engineering, systems programming, and algorithms & data structures. Already took Java, programming in Unix, and computer organization & assembly. Also has experience with Visual Basic for Applications.

Francisco Gonzalez – Fine in programming. Associate degree in Computer Science from STC. 3.54 cumulative GPA. Currently taking software engineering and algorithms & data structures. Already took Java and programming in Unix.

Lauryn Brough – Experience in public speaking and light design work. Previous Beta Development Team Lead and Current Machine Learning Researcher. 3.8 GPA, currently taking algorithms & data structures, software engineering, and computer networks. Already took Java, programming in Unix, computer organization & assembly, and systems programming.

Project Description

Many businesses need a reliable way to track the hours worked for each employee. It should be difficult for the average employee to cheat the system. Existing solutions to this problem include using timecards, id cards, and fingerprint recognition. Business owners may be interested in purchasing a cheaper and/or safer login system that automates the tracking of hours worked.

Our solution is to create a web application that requires a login from an administrator to enable other users to login. Each time a user logs in, a camera takes a picture of the user and sends it to an administrator through email for verification. The same can be done for logging out, but we leave the users responsible for not sharing their password with anyone else. An object, such as a clock or calendar, in the background of the picture can help prevent cheating the system. Finally, an administrator can access a table of everyone's times and make any edits if needed.

Functional Features:

1. Create an account and become an administrator by paying through Stripe
2. The administrator creates accounts for each employee with a temporary password
3. The administrator can create more administrators
4. The employees change their password on 1st login and can change it at any time by clicking a link before login (should be able to navigate back to home)
5. An administrator must login 1st and enable/disable a mode to allow other users to login, which also performs a logout for the administrator
6. If someone forgets their password, a temporary link can be emailed to allow the creation of a new password for the user with the corresponding email address
7. When an employee logs in, a success message appears temporarily, and a picture is taken of the user and sent to an administrator via email for verification
8. A login can be flagged if the camera fails to take a picture or fails to send the email, but the time is still recorded in red font and a message lets the user know
9. An administrator can login to view a table of everyone's login and logout times for any time period (the table will also show the total hours worked on that day for each user)
10. An administrator can edit a user's login and logout times (an edit will change the font to bold)
11. When a user logs out, there will be a message stating if they are sure they want to log out, which allows users to know if they are already logged in
12. An administrator can disable the photo verification for any user, but the camera will still take the picture
13. An administrator can randomize if a user needs photo verification

Costs of Development:

The cost of the software will be cheaper than paying for fingerprint recognition. A one-time payment of $20 is competitive with other products, and a periodic charge of $1 per month is reasonable to pay for the hosting. The business must have a camera connected to a computer or purchase one for the software to work with photo verification. Most businesses already have a camera. A webcam can cost as little as $10.

If we have at least 7 businesses purchasing the software, then it is affordable to host on Heroku in the long run because it costs $7 per month. Our first 2 years can be free because we each have the GitHub classroom student discount available. The cost of development is $7 per month to host on Heroku after the first 2 years. The cost of deployment can be $0 if we self-advertise.
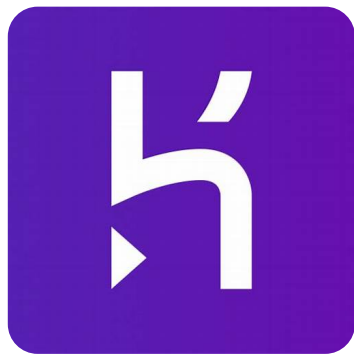
Plan of Work

Domingo Martínez Jr. – Features 7, 9, and 10

Francisco Gonzalez – Features 1, 2, 3, 6, 7, and 11

Lauryn Brough – Features 4, 5, 7, and 8

The plan of work is subject to change, and we can help each other to complete any feature. In the next few weeks, we hope to implement most of the features we described except maybe the automatic picture taking + emailing. We can all contribute to feature 7. Disabling or randomizing the photo recognition is not a high priority. We might need to improvise on how the photo verification will work. Another way for it to work is to require the user to take their own photo using the computer's camera and upload it within a time limit after logging in.