PrintAbility

Print shop

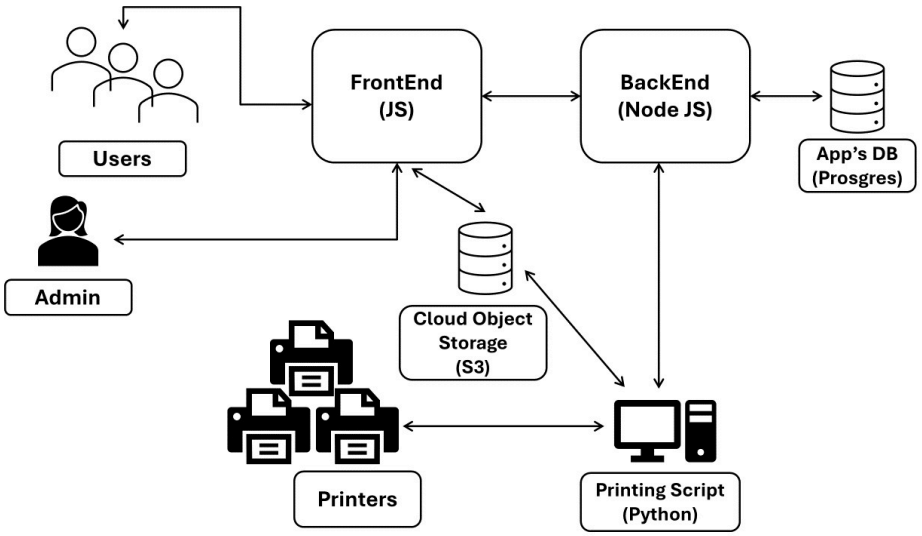
Description of the main goals of the application

1. The application will provide a convenient and fast printing service for a network of printers.
2. The application will provide great tools to manage and monitor the network of printers.
3. The application will enable various companies and users to have web access to authorized printers.

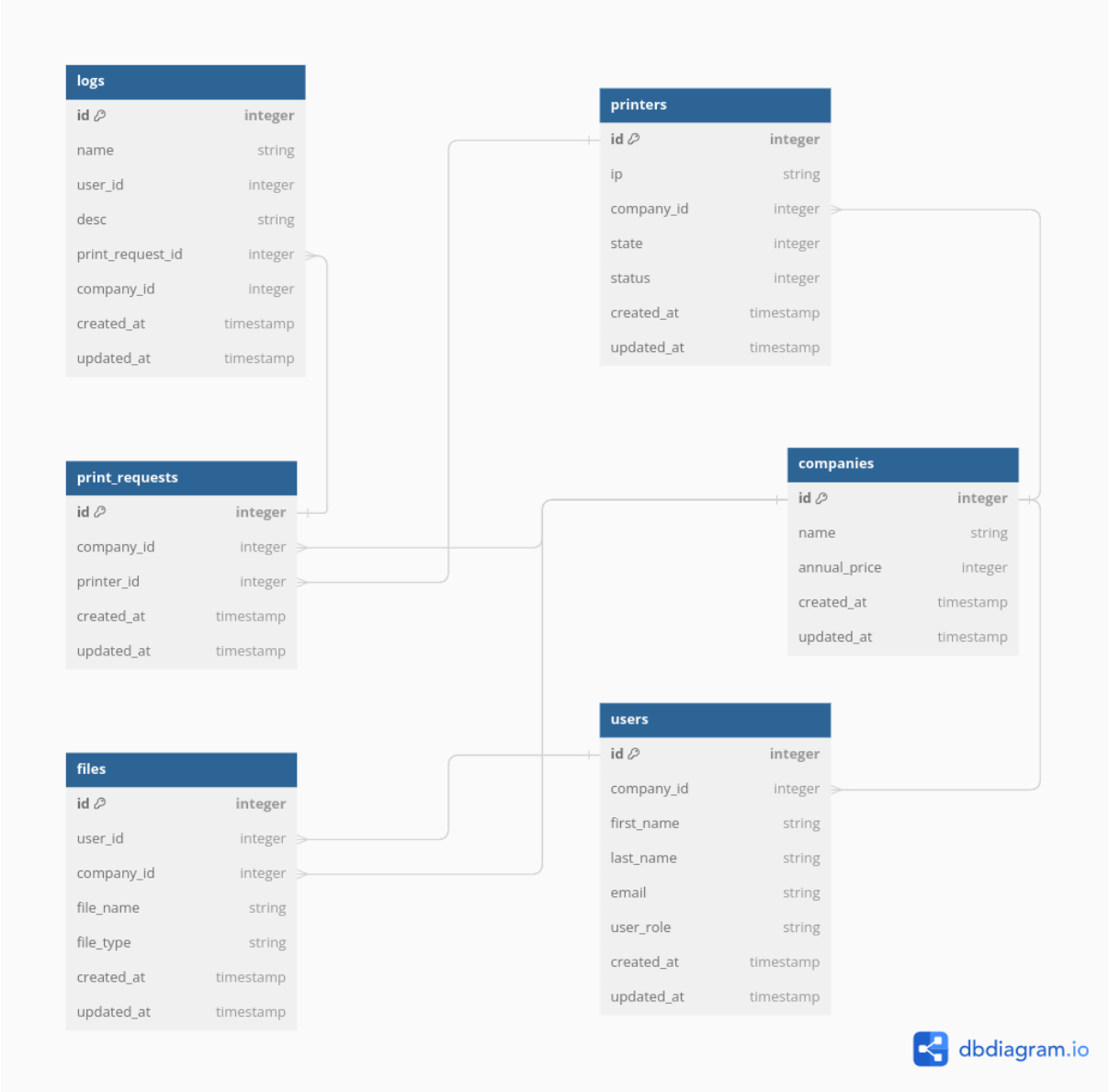
Tech spec

- General information
    - The agent will operate on Windows systems.
      Will be developed on Windows machines.
    - We will work on a network of 1-2 computers and 1 printer.
    - We will also test on a network of a few computers and 2-3 printers.
- Programming Language:
    - Agent - will be developed in Python.
    - Application server - will be developed using Ruby / Node.JS as the primary programming language, and Ruby on Rails as a framework.
    - User interface - Vanilla JS (ES6), HTML, SCSS.
- Database Management System:
    - PostgreSQL.
- APIs:
    - OpenPrinting CUPS - https://openprinting.github.io/cups/
    - Stripe - https://stripe.com/
- Version Control:
    - Git will be used for version control, allowing collaborative development and easy tracking of code changes.
- Deployment Platform:
    - The application will be deployed on AWS (Amazon Web Services) for reliable hosting and scalability.
- Authentication and Authorization:
    - OAuth 2.0 will be employed for user authentication.

Architecture description



DB Architecture



Users stories

Our customers will be addressed as Clients, and the customers using the printers will be Users.

New company self-onboarding

Description: *This feature allows a new company to be created, configured, and ready to go, by following a process with a few steps.*

Installation process stages:

1. **Downloading agent to a computer in the client's network: (high priority)**
    a. The client follows an intuitive guide for installation.
    b. The client downloads our setup agent - from a link provided by us
    c. Once downloaded - the client must run the download file.
2. **Setting up the first printer: (high priority)**
    a. After setup, the user should be able to perform a test print to ensure the printer is functioning correctly.
    b. Upon successful setup and testing, the user should receive confirmation that the printer is ready for use.
3. **configure the printer platform: (high priority)**
    a. Clients can print files without charge from the dashboard.
    b. Clients can set and modify the pricing structure for print jobs.
    c. Clients can enable or disable color printing, as per the organization's requirements.

BYOD - Opening Printable app

1. **Open App: (high priority)**
    a. The user scans the QR code which is displayed on the printer - this will display a link to our web app.
    b. The user opens a link to our web app.

Local PC - Opening Printable app

1. **Open App: (high priority)**
    a. Users must be connected to the Wifi of the client's company.
    b. The user opens our app via Google Chrome browser.

General printing process

1. **Printing files as a user (high priority)**
    a. **Description**: The user begins the printing process by clicking on the "upload file" button.
    b. **User Interaction:**
        i. Locates and selects the "upload file" option.
        ii. Chooses a file from the file explorer on their device.
        iii. Initiates the printing process.
2. **Selecting Printing Location: (low priority)**
    a. **Description**: If multiple locations are available under the company, the user must specify the location from which they want to perform the printing.
    b. **User Interaction:**
        i. Choose the desired printing location from a list of available options.
3. **Setting Printing Preferences: (high priority)**
    a. **Description**: The user customizes printing settings, including double-sided printing, page size, color preferences, and more.
    b. **User Interaction:**
        i. Configures printing preferences based on their requirements.
4. **Calculating Printing Cost: (high priority)**
    a. **Description:** The system calculates the cost of the print job based on selected preferences and other factors.
    b. **User Interaction:**
        i. Views the calculated cost of the print job.
5. **Confirming Print Submission: (high priority)**
    a. **Description:** The user confirms the print submission, indicating their readiness to proceed with the printing.
    b. **User Interaction:**
        i. Acknowledges and confirms the print job submission.
        ii. The print server will identify an available printer that is not currently in use and transmit the print job to it.

6. **Entering Payment Details: (high priority)**
    a. The customer will confirm the payment
    b. Upon clicking the payment confirmation, the customer will be directed to the transaction API server
    c. User Interaction:
        i. Enter the necessary payment details for processing.
7. **Print Status Tracker: (mid priority)**
    a. Description: Upon completion of printing, a notification is sent to confirm the print job's completion. Users may also have the option to provide feedback.
    b. User Interaction:
        i. Receives a notification indicating the successful completion of the print job.
        ii. May provide feedback if the option is available.
8. **Previewing Print Job: (low priority)**
    a. Description: Users have the option to preview the print job before confirming the submission.
    b. User Interaction:
        i. Views a preview of the print job to ensure accuracy.

Competition:

Princh - https://princh.com/

- Main differences between our idea and Princh's
    - **Installation** - to use Princh, customers must make an appointment with Princh IT person, who will set the software onto the printers and computer network.
    - **High customer service**:
        - Customers get the installation and any needed updates remotely and need to do nothing on their own.
        - Fast human service.
        - Knowledge base and documentation.
    - **Scan & Copy** - Princh allows its users to print, scan, and copy.
    - **Local PC**- Princh allows local PC printing.

- Main similarity between our idea and Princh's
    - **No onboarding printing**- allows you to print files from your own device in guest mode after payment is made successfully.
    - **Payments API**- payments are also made via another service provider API.
    - **Payments** - An annual subscription that includes everything and all printing revenue goes to the client
    - **BYOD** - both allow BYOD printing.

Phase 2 - More than MVP

1. **Security**
    a. Downloading an agent to the customer's network should be protected and prevent external access to our server from our agent.
    b. Sending print jobs should be secured as it happens as web requests.
2. **Signing in with a Google account**
    a. Allowing printers users to log in with their accounts to have print history.
    b. Personal Wallet- allowing users to buy several prints instead of payment for each print.
3. **Printer prioritizing** - choosing to prioritize a printer over others in the same network when other printers have more printing jobs to execute, and the printer is close geographically to the user's location.

4. **User Registration and Login/Logout:**
    a. **Registration:**
        i. **Description**: This state involves a user registering under a specific company. It requires the user to log in with three identification details: company code, username, and an initial (temporary) password provided by the company.
        ii. **User Interaction:**
            1. Enter the company code, username, and initial password during the registration process.
            2. Submits the information for verification.
            3. After the first login, the user is prompted to set a new, personalized password.
    b. **Login:**
        i. **Description**: This state involves a user entering identification details including the company code, username, and password.
        ii. **User Interaction**:
            1. Inputs the company code, username, and password.
            2. Submits the information to authenticate the user.
            3. Gains access to the app's features upon successful login.
    c. **Logging Out:**
        i. **Description:** This state involves the user logging out of their account, and terminating the current session.
        ii. **User Interaction:**
            1. Accesses the logout or sign-out option.
            2. Confirms the decision to log out.
            3. Exits the app or is redirected to the login screen.