**Progress Report**

**- Increment 2 -**

**Group #27**

# Team Members

* Ian Estevez – iae21 – IAE21
* William Hudmon – wsh19a – Hudbone
* Jack Throdahl – jtt20q – throdahl

1. **Project Title and Description**

This project is titled GrouPay. GrouPay is a web application designed to facilitate users in reconciling collective debts, by allowing individuals to join billing groups, in which they can independently contribute to bills owed by themselves and their peers within the same billing group. Users must first make accounts in order to find the other users with which to join the same billing group, set up by a third party such as a landlord (or property manager, company, etc.), after which they can split bills, such as rent or utilities evenly, and/or distribute percentages of the balance due however they decide. This way, users are individually held accountable for their own parts of the total balance due, simplifying the process of collectively managing mutual expenses.

1. **Accomplishments and overall project status during this increment**

During this increment, we’ve accomplished fleshing out a substantial amount of the front-end user experience, both visually and functionally. Now, as opposed to plain whitespace and text on the front-end and a few forms, we’ve created a company logo (with the help of generative AI) which is displayed throughout the site, and all pages now feature buttons, a teal color scheme, and a unifying navigation bar at the top of the window. From the bottom up, the database persists Users, Billing Groups, and the relationships between them (User membership in Billing Groups, percentages of the bill for which a User is responsible, Billing Group Managers, etc.) with the introduction of the new PAYS\_FOR table and a slight overhaul of the BILLING\_GROUPS table.

Next, the main Python (Flask) module of the application has received the implementation of several major pages and features, including session management and keeping track of the account information of the currently logged in user when interacting with the site, the creation of Billing Groups by Corporate Users and their persistence down to the database level, querying for Billing Groups by name, and Private Users joining Billing Groups and the persistence of this relationship down to the database level. Appropriate business logic has been expanded on and strengthened greatly in this Python module to handle the influx of interaction and information being processed by the new pages and features, allowing for a rather intuitive user experience navigating the front end, such as passing information back and forth from the HTML forms to be able to join and manage Billing Groups with in-lined buttons.

Finally, (as previously mentioned) the HTML front end has received a massive visual overhaul and the addition of the site’s main webpages and their accompanying functionality, including the logo assets featured throughout the site, the new color scheme and font family, the functional buttons passing information back to the main Python module, a proper dashboard to view a User’s associated Billing Groups, a search page to find and join Billing Groups, a Billing Group creation page for Corporate Users, a Billing Group management page for Users to assess and interact with the contents/details of a Billing Group, and sign-out functionality to end a User’s session. Although the aforementioned pages may not have the entirety of their functionality implemented, the basis for these features are present, and are in progress as of 11/15/2024.

1. **Challenges, changes in the plan and scope of the project and things that went wrong during this increment**

The most challenging aspect of this increment was generally finding a solution to having in-lined buttons on the forms that allow a user to access the details of a Billing Group from the Dashboard, or join a Billing Group from the Search page. Figuring out a way to have a visually appealing button that also takes information being passed to the HTML page, in order to pass it back to the Python module to affect change in accordance with user input, such as figuring out which Billing Group a User is attempting to join from which “Join” button they click on the Search page, was fairly daunting. Moreover, changes to the MySQL database schema in the “setup” Python module obviously rendered any current local database states unusable, which took some time to realize, as all of our group member’s machines had already set up an obsolete version of our schema, causing issues. The solution was, of course, to simply enter the local MySQL servers, drop the database, and re-run the project, but this was unclear for some time. Other than that, this increment went fairly smoothly in terms of code and feature development.

As for changes to the initial plan and overall scope, both the plan and the overall scope of the project remain unchanged, although we are moving towards a solution for eventually distributing the back-end, possibly moving away from a MySQL implementation in the future.

1. **Team Member Contribution for this increment**

* Ian Estevez:
  + Progress Report: Primarily wrote all sections of the progress report except for Stakeholder Communication, with input/suggestions from and discussion with William.
  + Requirements and Design Document: Gave input/suggestions and discussion for the sections of the document relevant to Increment 2.
  + Implementation and Testing Document: Primarily wrote the sections of the document required for Increment 2, with input/suggestions from and discussion with William.
  + Source Code: Implemented main site overhaul, including asset creation, color scheme, fonts, buttons, forms and tables, and formalization of site layout, including implementation of Registration, Login, Dashboard, Billing Group Creation, Billing Group Search, and Billing Group Management pages, and all of their accompanying current functionality; implemented session management, signing out, differential access to features, database table recording relationships between users and billing groups, all current business logic in the main Python module handling session and form information.
  + Video: Appears in and contributes to discussion within video; filmed, saved, and submitted video.
* William Hudmon:
  + Progress Report: Gave input/suggestions and discussion for the sections of the document relevant to Increment 2; Wrote the entirety of the Stakeholder Communication letter.
  + Requirements and Design Document: Primarily wrote all sections of the Requirements and Design Document, with input/suggestions from and discussion with Ian.
  + Implementation and Testing Document: Gave input/suggestions and discussion for the sections of the document required for Increment 2.
  + Source Code: Researched solutions to distributing MySQL database to another platform.
  + Video: Appears in and contributes to discussion within video.
* Jack Throdahl:
  + Progress Report: Absent for the drafting of this document; no contribution.
  + Requirements and Design Document: Absent for the drafting of this document; no contribution.
  + Implementation and Testing Document: Absent for the drafting of this document; no contribution.
  + Source Code: No current further contribution to the source code.
  + Video: Absent for the recording of the video; no contribution.

1. **Plans for the next increment**

By Increment 3, we plan to have the final pages and features of our application fully developed and functional, including the following: a messaging system between Private Users (and between Billing Group members and the Group Manager), an invite system allowing Users to invite other Users to billing Groups they are associated with, a friend request system allowing Users to send/accept Friend requests to/from other Users (allowing a User to message another outside of a Billing Group), a User Search system and web page allowing Users to search for other Users by name and send Friend requests or invites to Billing Groups, a Profile page allowing Users to view or change select details of their accounts, an appeals system allowing Users within a Billing Group to contact/message the Group Manager, a ledger detailing records of previous payments for each Billing Group, a payment system allowing for the simulation of a User conducting a transaction such as involving paying money towards the bill, and a Billing Group Management system allowing Group Managers to change the bill amount and percentage distribution among members, and add/remove members from the Billing Group. Moreover, we plan to have the MySQL database back-end distributed, such that it no longer operates locally on the client machine, and instead can be accessed from anywhere, meaning the data is stored server-side, while being read from and interacted with by individual clients through their web browsers.

1. **Stakeholder Communication**

Dear Stakeholders,

We have successfully implemented key features for individual users, enabling account registration with unique usernames, secure passwords, and the ability to store personal information in a MySQL database. Once registered, users can log in, search for billing groups, and create billing groups. These groups offer collective payments while delivering a seamless way to communicate with the group creator regarding balance redistribution. In addition to individual user capabilities, we have introduced functionalities for corporate accounts. Companies can now register under their organization name, create multiple billing groups, and assign shared expense percentages among group members. Furthermore, companies have full control over their groups, including the ability to add or remove users, ensuring effective management of their billing groups. As we progress, our focus will remain on enhancing the user experience by finishing the user search, friends list, and messaging portions of the app.

Your feedback and insights are invaluable as we move forward, so please contact us with any questions you may have.

Regards,

GrouPay Development Team

1. **Link to video**

<https://youtu.be/r9TVUV40094>