Travel Expenses and Reporting

1. Introduction

Travel Expenses is a web-application designed to allow it's users to submit and validate travel expenses, travel reports and allow rudimentary communication between employees and their superiors. System has three levels of authorization to it:

Travel Expenses software allows it's user, depending on his authorization level, to

1. Add new travel expenses to system
2. Edit travel expenses. Editing rights depend both on the level of authority user has as well as the expense status.
3. Add receipts to the system
4. Validate said travel expenses
5. Allow said expense to contain several sub-expenses (called either 'rows' or 'expense rows')
6. Edit user authorization level
7. Allow changing password for user in case user forgets or loses his password (user being usually the employee)
8. Allow supervisors to give feedback concerning the submitted expenses
9. Allows users to attach comments to the submitted expenses
10. Lists submitted expenses, expense rows and Expense-dependent receipts.

As you can see, TravelExpenses is a powerful tool for managing inter-company book keeping and allowing more flexible and fast employer-employee communication and feedback.

Requirements

User: Since the application is a purely web based and quite small, it doesn't pose client requirements aside compatible web browser (such as Google Chrome or Mozilla Firefox) and sufficiently fast Internet-connection. Software has been observed to work well with 10Mbs Internet-connection.

Overview of TravelExpenses

TravelExpenses software has been implemented using Java programming language, using Spring development environment. Application has three distinct levels of participation:

1. User-level: This level is meant to for employees who make up bulk of user-base. Users may submit expenses and scans of receipts linked to these expenses. Users are allowed to edit submitted expenses as long as they have SAVED-status (haven't been sent to supervisor).
2. Supervisor: Supervisors are either employers or superiors of ordinary users and aside features showed above, have right to modify expense status as well as do generate new passwords for User-level users in case said password is either lost or compromised for any reason.
3. Admin: Person, whose purview is to keep system working.

- User-level represents common employee in the field. While all user roles are capable of same basic tasks (creating and submitting expenses), Users have most limited access to the system.

- Supervisors can do what Users do and on top of that can validate expenses.

-Admin can do what Users do and also manage accounts.

2. Testing

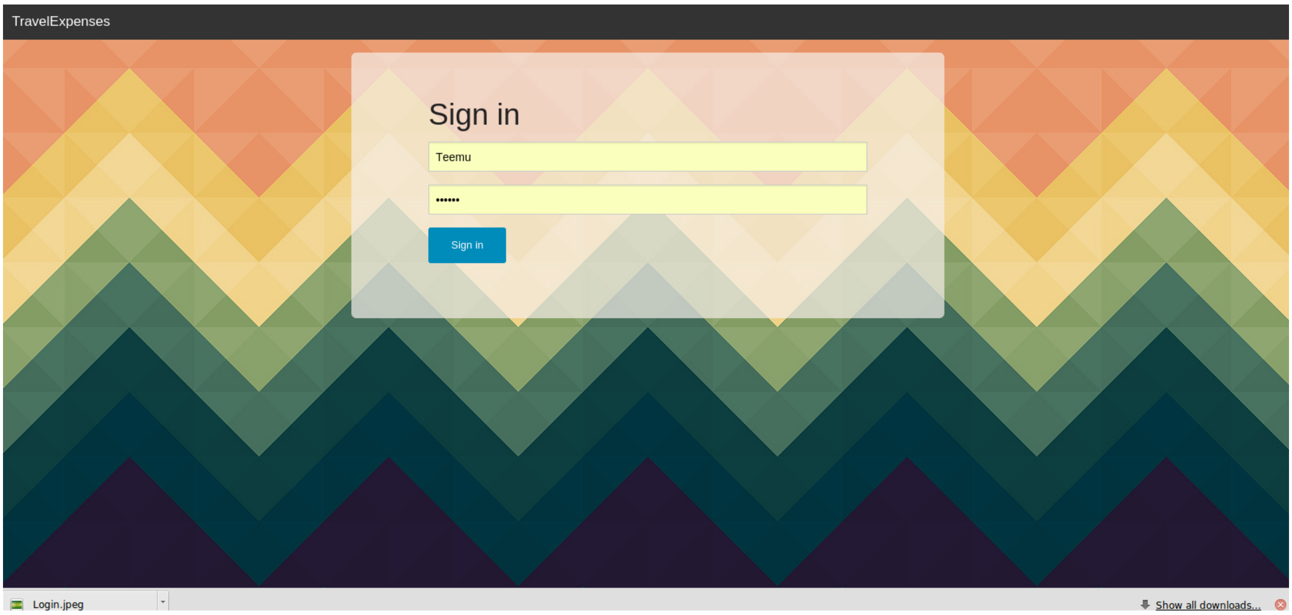
Testing was done using several different techniques:

1. First of all there were Selenium-tests for system testing. Test-cases included
    - Signing in
    - Approving expenses by a Supervisor
    - Listing sent expenses (Supervisor)
    - etc.
2. There were integration testing done using Spring-test component which was used to test most of the things used in application such as controller- and service-class functionalities and how they meshed together. Test-cases include
    - Seeing that expense paging works correctly
    - That expeses can be view correctly
    - That expense rows cannot be added with inappropriate date
    - etc.
3. Finally there were Mockito-tests. These tests were used to test that saving a user when adding a new account worked out correctly.

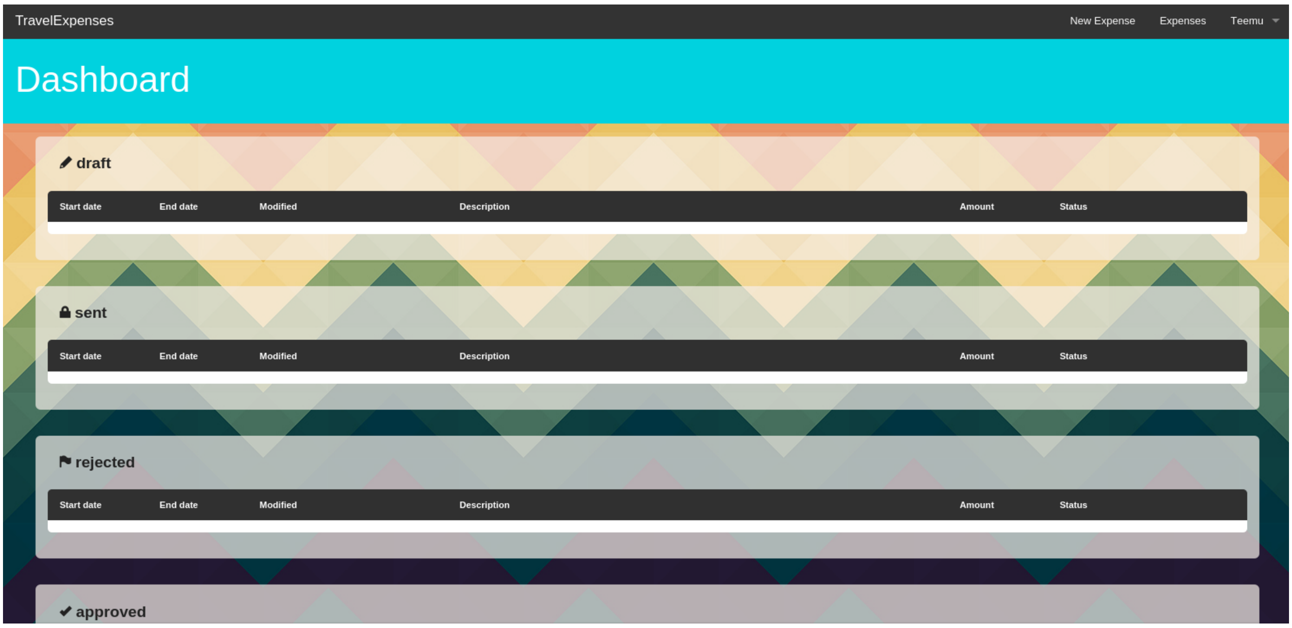
It is worth noting that I laid down just few of the tests written for the application. Full listing of all the tests done over time of development would take too much room in this document.

3. Use of TravelExpenses

Getting started with TravelExpenses doesn't require anything from ordinary users except requesting an account to be created by Admin-user, assuming one hasn't been already been created for him/her. Aften having logged with you user information in a page depicted below



You should find yourself in a page similar to the one below:

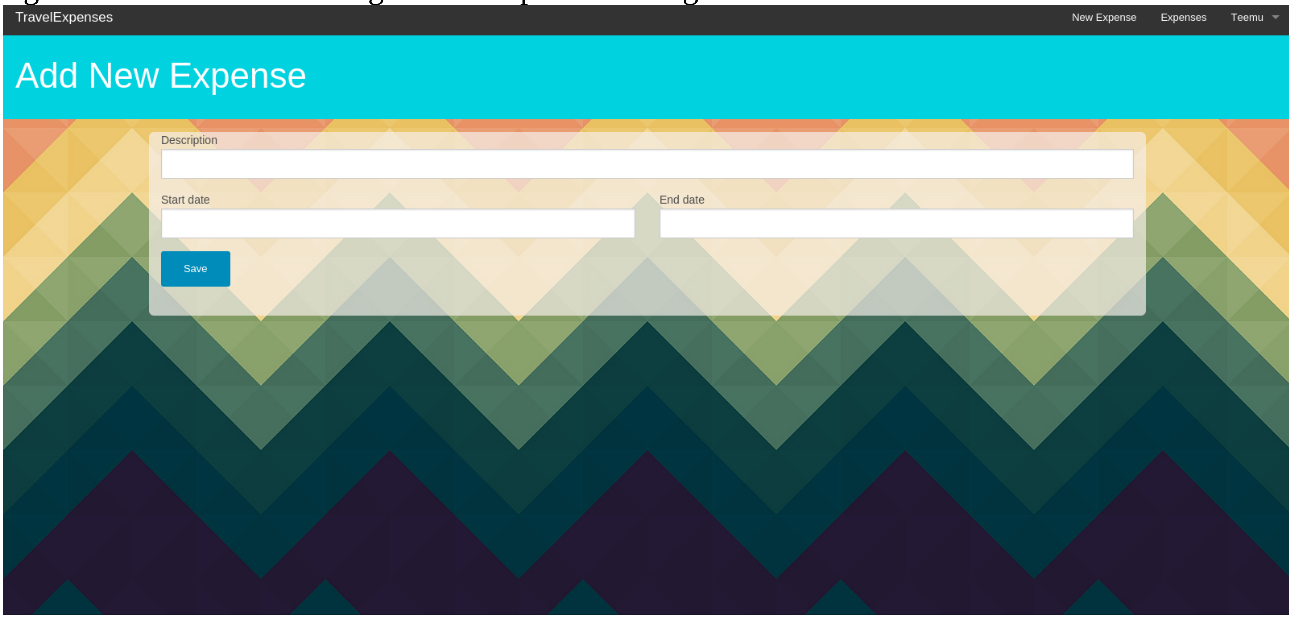


Exact outlook of the page might differ so from but it should look something like this. This is our

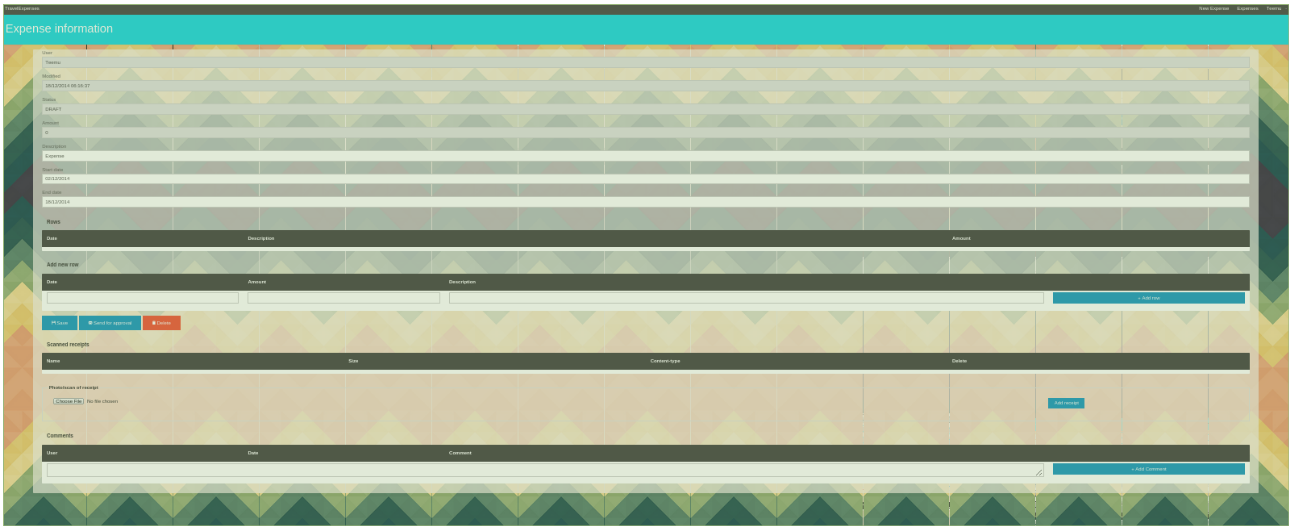
Main Page. Now on, unless we specify otherwise, we assume in this manual that you are on this page.

3.1 How to add new expenses and rows within them

In order to add an expense to the system, click “New Expense” text in the navigation bar in upper-right corner of the site. Doing this will open following view:



In order to create an expense, you need to specify time interval this expense was accrued by defining both starting and ending dates as well as adding short description of this expense. All fields are mandatory. Dates can be submitted either by hand (in form of dd/mm/yyyy) or by left-clicking the field once and using the opening calendar to choose the date.
After necessary information has been submitted, click “Save” button. The opening screen should look like this:

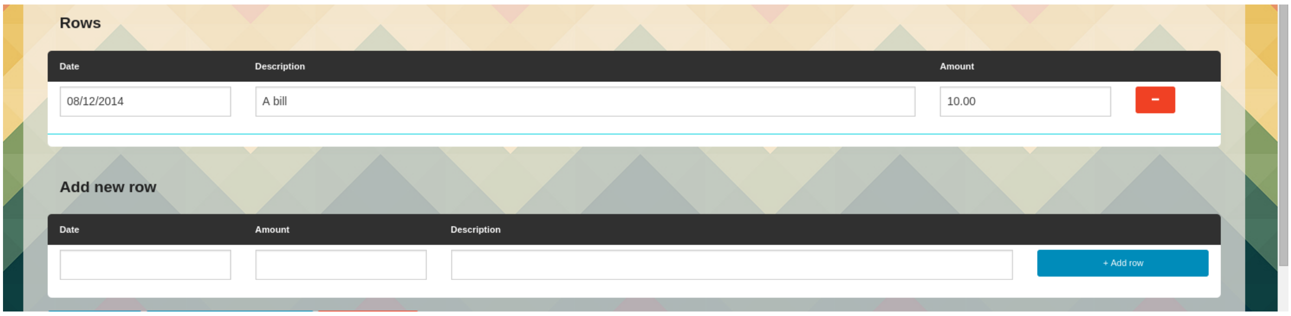


The page, from top to bottom contains:

1. General expense-specific information such as who submitten the expense, it's modification date, expense status, it's aggregate size, description and the time interval for the expense.
2. Expense rows. If you have just created a new expense then this is empty but in properly filled expense you will have one or more rows. We will return to this later.

3. Next section of the page is for adding rows to the expense. Each of these rows contains single cost (such as restaurant bill). You can add as many rows as you want and the system will keep track of aggregate cost of rows in Amount-field.
4. Below expense rows is feature for adding receipt scans to the expense.
5. User can also add comments to the expense (this should not be mixed with expense description). This portion allows for more detailed break-down of expense as well as other observations relevant to said expense.
6. Finally there are button for
   A) Saving expense after it is modified
   B) Sending said expense for approval and
   C) Deleting said expense

Modification and deletion of expense and it's rows is detailed furter in this manual. Comments howerver cannot be removed and the only way to get rid of them (should the user want it), is to remove entire expense and start anew.
Now that we have detailed how to add an expense, it is time to detail addition of expense row. Expense row addition is simple: In the expense-specific view (or page as is said more commonly) you only need to fill when this particular cost was accrued, size of this cost and finally a short description of this cost. Like with expenses, all the form fields need to be filled in order to add a row. Here is a screen-shot after addition of a row to an expense:



However, if user tries to give inappropriate date (one that doesn't fall in the time interval defined in creation of the expense) or skip from filling field, there is an error message and the row will not be added to the expense.

3.2 How to modify submitted expenses and their rows

If an expense is unsubmitted (has DRAFT as status), it and it's rows can be modified. Exception to this rule, however, is information pertaining it's modification date, status, aggregate sum of expense and the owner of the expense. These fields are colored gray to differentiate them from changeable fields.
Modification and both expenses and their rows is done by changing the information in the fields and then pressing "Save" button in the bottom of the screen (with the icon of a disk on it). This is, assuming that the modified information is valid. Attempting to submit inappropriate input (such as row date that doesn't fall in the time interval defined during creation of the expense) causes an error message and refusal to change the information.

Expense modification is also possible when supervisor rejects submitted expense. Modification works as detailed above.

3.3 How to delete submitted expenses and their rows

Now expense can, if you have USER-privileges, be deleted as long as the expense has DRAFT as status. This means that expense hasn't been sent to the employer for validation. If the expense has any other status (such as SENT), it cannot be removed from the system.

However we assume that Expense hasn't been submitted yet. In order to remove expense in question you need to go to the expense edit view. To do that you can either

1. Click Edit-button of the expense you want to edit or
2. Click “Expenses” in the nav-bar and click Edit button there.

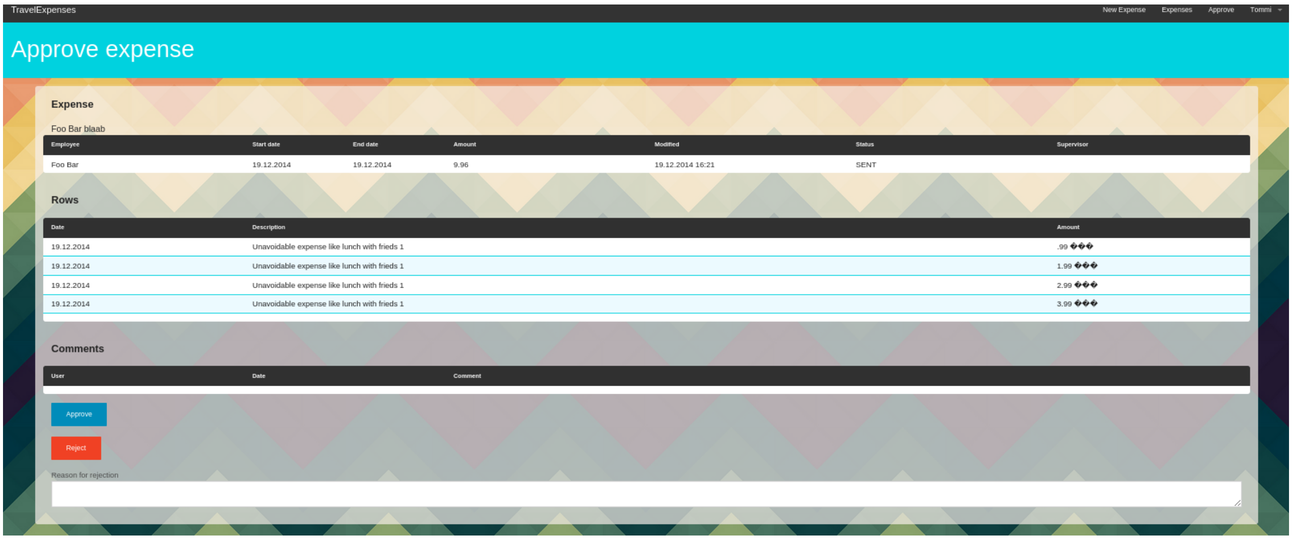
In both cases you end up in the same view as when creating expense in the first place and there you can click “Delete” button if you want to destroy whole expense. If you want to remove just expense row, instead of whole expense, click red button at the right end of the row.

3.4 How to validate submitted expense

Now that the expense has been sent to supervisor, it needs to be validated. We use term “validated” bit broadly here since in this context we use it to also denote rejecting inappropriately prepared expense. This particular feature is supervisor-specific feature, unlike those we have dealt with thus far.

If you (as a supervisor) want to examine submitted expenses, you just need to choose “Approve” from nav bar. This will open you following view:

Clicking examination button( ) of an expense will open next view:



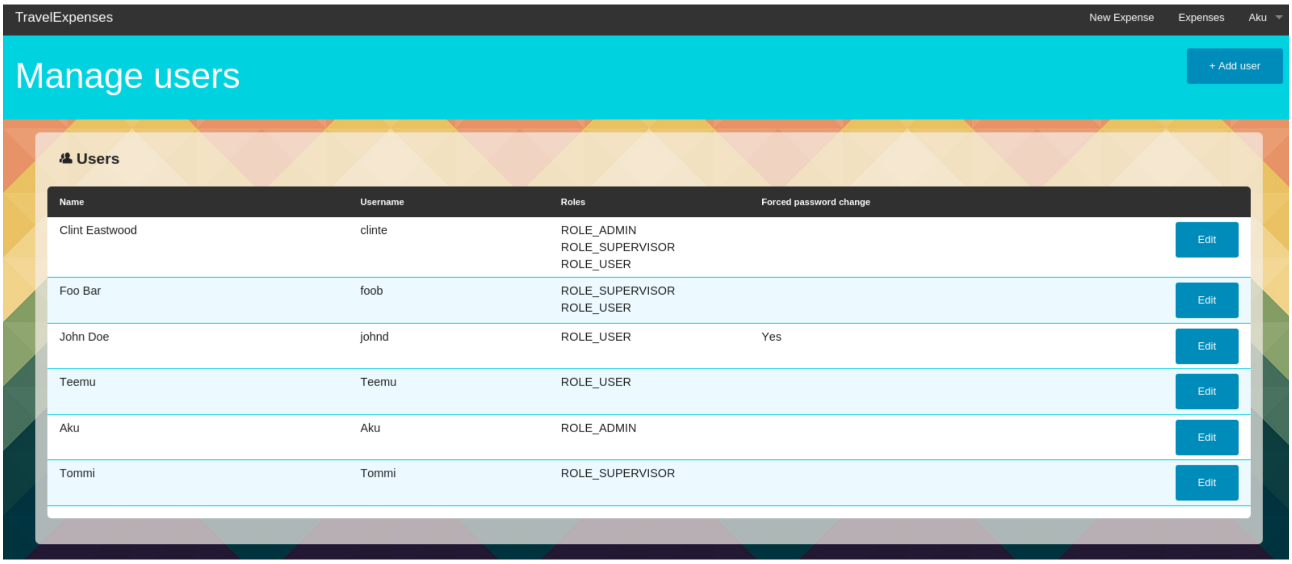
Now you as a supervisor have two options open for you.

1. You can approve the expense submitted to you or
2. you can reject it and send it back to the submitter, along supervisor's reason(s) for rejection. These justifications are mandatory.

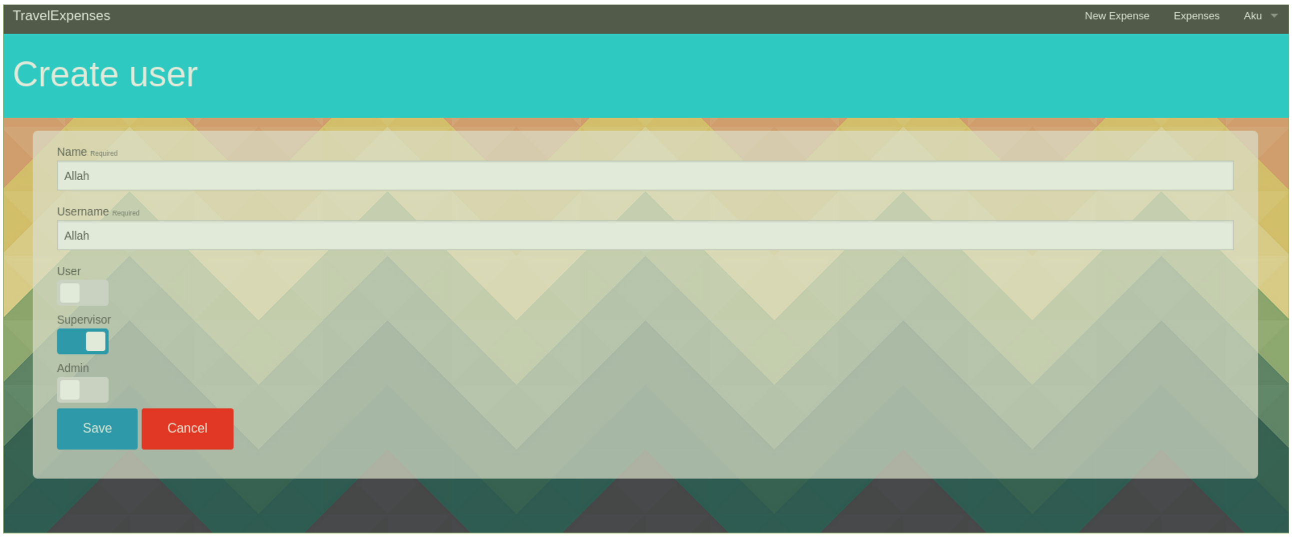
Whatever the choice, you will be taken back to the listing of waiting submissions.

2.5 Managing users

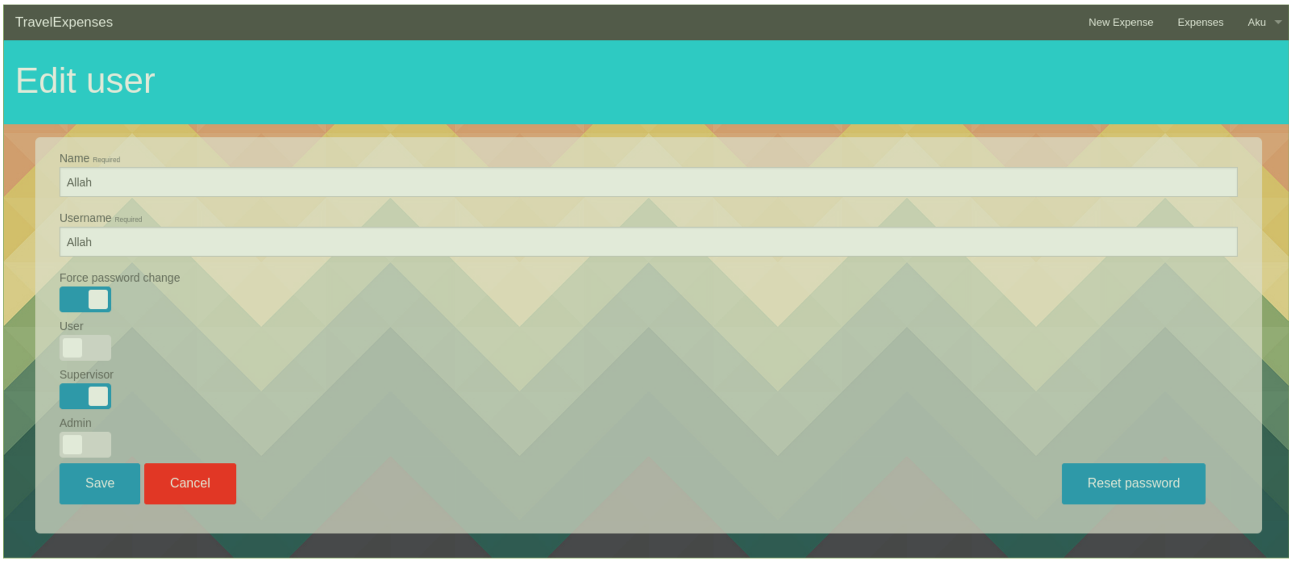
Managing users is Admin-specific feature and contains functionalities for adding users and editing their privileges. If you (as an Admin) want to do either of these things, you need to choose "Manage users" from dropdown menu under you account name. You will then be taken to following view:



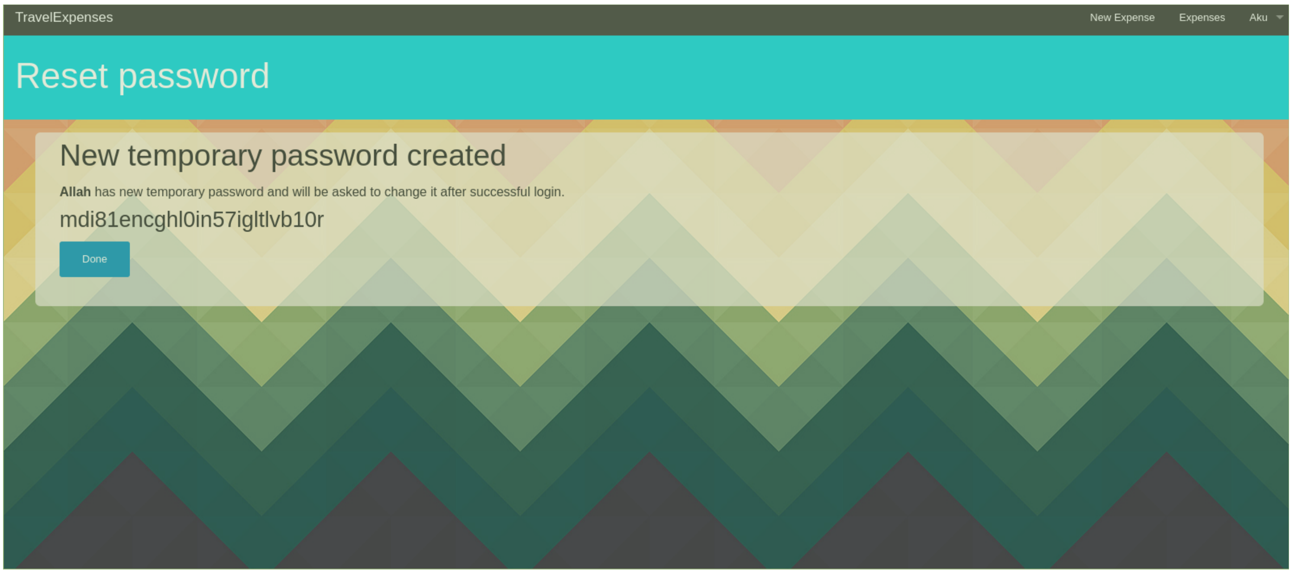
If you want add user, choose appropriate button from Manage user-bar (or area) and click it. You will now see following sight:



Fill username and name for user to be added and press “Save” button and you will be taken to former view. Now, user that has been created doesn't yet have a password to his/her account. To do that, press Edit-button and in following view



Press Reset password-button. This action will force a password creation. The view should look something like this now:

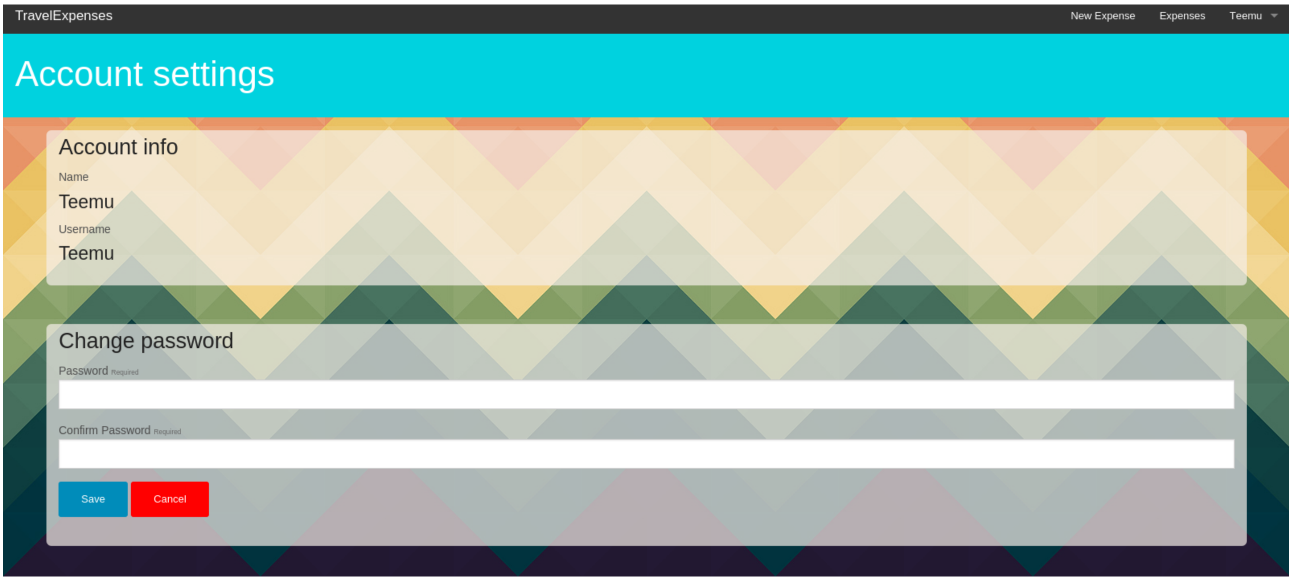


Pressing Done-button on this sight will take us to user listing in user management. Congratulations, you have just added a new member to the system!

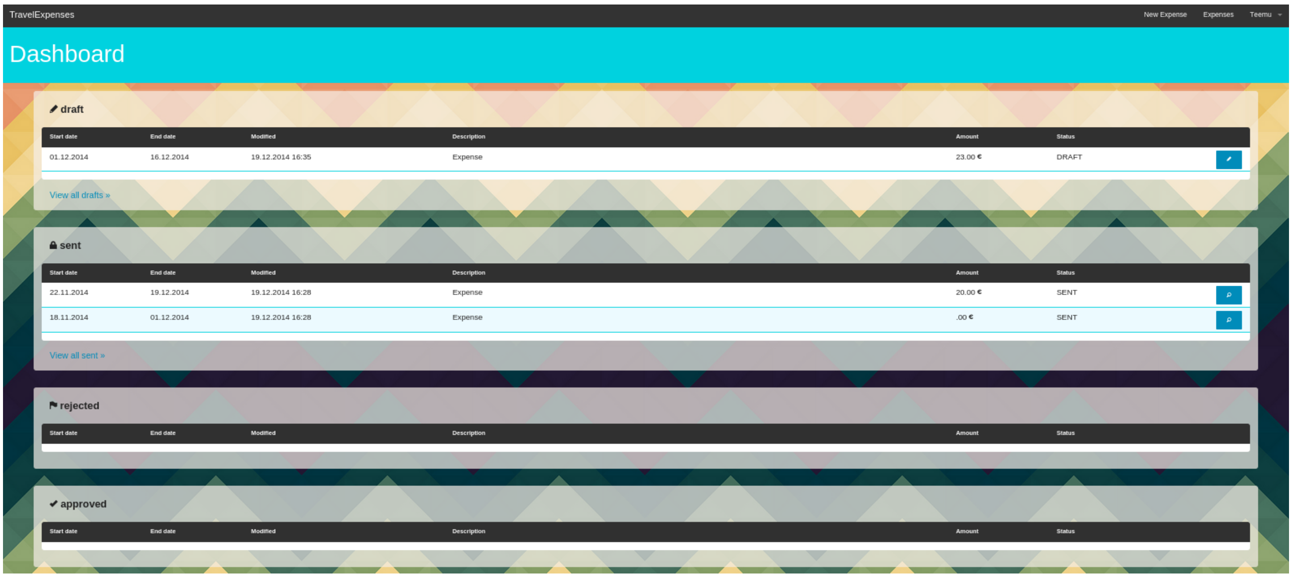
Aside adding users, Admin can also manage user-specific privileges. He can either bestow or take away user roles (up and including disabling the account in question by removing all user roles from it). This is also done in Edit user-view by clicking sliding buttons and then saving the choices. Admin, however, cannot change or remove either user's name or username.

2.6 Changing passwords

Since we spoke in last chapter of user account management (which includes forcing password changes), we should now say few words about *voluntary* password changing, which is open for all user roles. Changing passwords happens by choosing from drop-down list under you account name “Account settings” option. It will take you to this view:



Changing password is easy; You just submit new password and after re-typing it, press “Save” button. After that you will be taken to Dashboard view, which looks like this.



There, simple as pie (no insult meant for all the bakers and food aficionados there).

2.7 Conclusion

Alright, you have now seen the basic functionality being offered by TravelExpenses software. As you can see, TravelExpenses offers several interesting and powerful tools for managing travel expenses and facilitates better communication between employer and employees and thus increasing worker productivity.

Team TravelExpense thus wishes you and your colleagues good time using this software. Good luck.