

## Code review

Here some suggestions for the signup.py file (this list does not pretend to be exhaustive):

1. Let's follow the SoC (**Separation of Concerns**) principle, therefore, move each class to its own file (pages.py, processor.py, main.py) to enhance modularity, testability and maintainability.
2. Let's follow the SRP (**Single Responsibility Principle**) principle, therefore, each class should have only one responsibility. For example:
  - Processor#process\_form should only focus on processing the form data and not on printing/interacting via messages with the users - so remove the usage of pages (line 39) in the process\_form function.
  - Also, be carefully with circular dependencies, in this case it's not critical but still somehow present: Pages#signupform\_page creates an instance of Processor and calls Processor#process\_form, in turn process\_form creates an instance of Pages (Pages -> Processor -> Pages).
3. We should search for high cohesive and low coupled code, for this, we should avoid creating instances of other classes and instead follow the IoC (**Inversion of Control**) principle. For this we can pass the dependencies (**Dependency Injection**) via the classes constructors. Particularly, an instance of Processor should be provided to Pages, so it can be called to handle the user inputs.
4. Move the users table name to a constant, configuration variable or environment variable if no other way. We should avoid hardcoded values.
5. Validation on inputs must be implemented:

- Validate that all the user inputs have length > 0.
- Check is a valid email address, a first approach can be implemented using a RegEx.
- Age should be an integer.
- User type must be in the set (user, staff, admin).

6. After implementing the validations, the process\_form function can be refactored to avoid duplicated code. At this point formvars['usertype'] should only hold a valid user type - (user inputs were validated), so no need for those if/else statements. Now, it can simply call the insert function and add the arguments. More processing on the data can be made in this function.
7. Add error handling for DB insert function call in Processor#process\_form.
8. Remove returns from Pages#thankyou\_page and from Processor#process\_form as they are useless at this point (**YAGNI, KISS**).
9. Follow the snake\_case naming convention. For example, signupform\_page should be signup\_form\_page.