

## Assignment 6: Continuous Integration

**Overview:** Small projects with only a few contributors, a manageable code base, and only a handful of test cases are easily maintained manually. However, when a project scales in any or all of these dimensions, manually executing test cases becomes ineffective. In this assignment, we set up a very simple continuous integration (CI) pipeline to automate test case execution.

**General notes:** This assignment counts towards Lab 2. Deliver solutions to all exercises as defined in the *deliverables* to pass this assignment. When using material outside of the official course material (lecture, slides, tutorials), state the source and critically reflect on its usage. In case of questions, please contact Zeth Danielsson (zeda21@student.bth.se).

**Work distribution:** At the beginning of each assignment submission, state how the work was distributed among the two team members.

### 1. Continuous Integration of Backend Unit Tests

GitHub Actions<sup>1</sup> are a continuous integration and continuous delivery (CI/CD) platform freely accessible on GitHub. It can be used to automatically build and test Python projects.<sup>2</sup> *Create a GitHub workflow that automatically executes all backend unit tests. Then, demonstrate it by opening a pull request (PR)<sup>3</sup> that changes the `get_user_by_email` method within the `usercontroller.py` file such that all test cases pass.*

**Deliverables:** The submission to this exercise must contain all of the following:

1. A link to a GitHub Workflow in your repository that automatically executes all **unit tests in the backend**.
2. A link to an open pull request onto the main branch which corrects the `get_user_by_email` method such that all unit tests pass. The PR should show the successful execution of all unit test cases. Do not approve the PR yet; leave it open until the assignment has been graded.

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<sup>1</sup><https://docs.github.com/en/actions/learn-github-actions>

<sup>2</sup><https://docs.github.com/en/actions/automating-builds-and-tests/building-and-testing-python>

<sup>3</sup><https://docs.github.com/en/pull-requests/collaborating-with-pull-requests/proposing-changes-to-your-work-with-pull-requests/about-pull-requests>