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about

`padajar-templates` is a series of LaTeX classes made by Paolo Adajar (that's me!). This originated as a series of LaTeX commands in summer 2021, used just for psets, but has since transformed into several classes (`padajar-memo`, `padajar-pset`, and `padajar-slides`) relying on a common package (`padajar-defaults`). I'm hoping the up-front cost of creating them will be paid back many times over in my future work, and that of others.

These files are open-source and distributed under an MIT License (see Section C). If you do use them, I greatly appreciate:

- hearing about it
- attribution
- contributing, if that's up your alley
- spreading the word!

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1 padajar-defaults

All `padajar-templates` load the package `padajar-defaults`. This package comes with the following features/options.

- Body and math font set to IBM Plex. Body text is IBM Plex Sans by default, but can be changed with the `[serif]` option to IBM Plex Serif. Math font is always serif, like $\sin^2(\alpha)+\cos^2(\alpha)=1$ and
$$\Phi(x) = \int_{-\infty}^{x} \frac{e^{-t^2/2}}{\sqrt{2\pi}}\,\mathrm{d}t\,.$$
Mono font is set to IBM Plex Mono. All fonts are set to user a lighter weight than the default.

  Note that because the `fontspec` package is used, to use this package (and any below templates), **you must** use XeLaTeX or LuaLaTeX. (For me, compilation with the former has been slightly faster.)

- A host of packages loaded by default:
  - for math: `amsmath`, `amsthm`, `physics`, `bbm`...
  - for graphics: `graphicx`, `pdfpages`, `listings`...
  - for tables: `tabularx`, `booktabs`, `threeparttable`...
  - for general utility: `hyperref`, `cleveref`, `enumitem`, `xcolor`...

  If you want the full list, head into the source code of this package.

- A `listings` definition for Stata (modified from here), along with a nicer `listings` scheme.

- Some math commands I find useful: `\eps` (ε), `\E` ($\mathbb{E}$), `\V` ($\mathbb{V}$), and `\indic` ($\mathbb{1}$).

- A `padajar` color scheme! :)

A few other options are used internally by the classes to differentiate between documents and slides.

Notably, `padajar-defaults` is a standalone package. It can be used in any document, not just those in `padajar-templates`, granting additional flexibility.

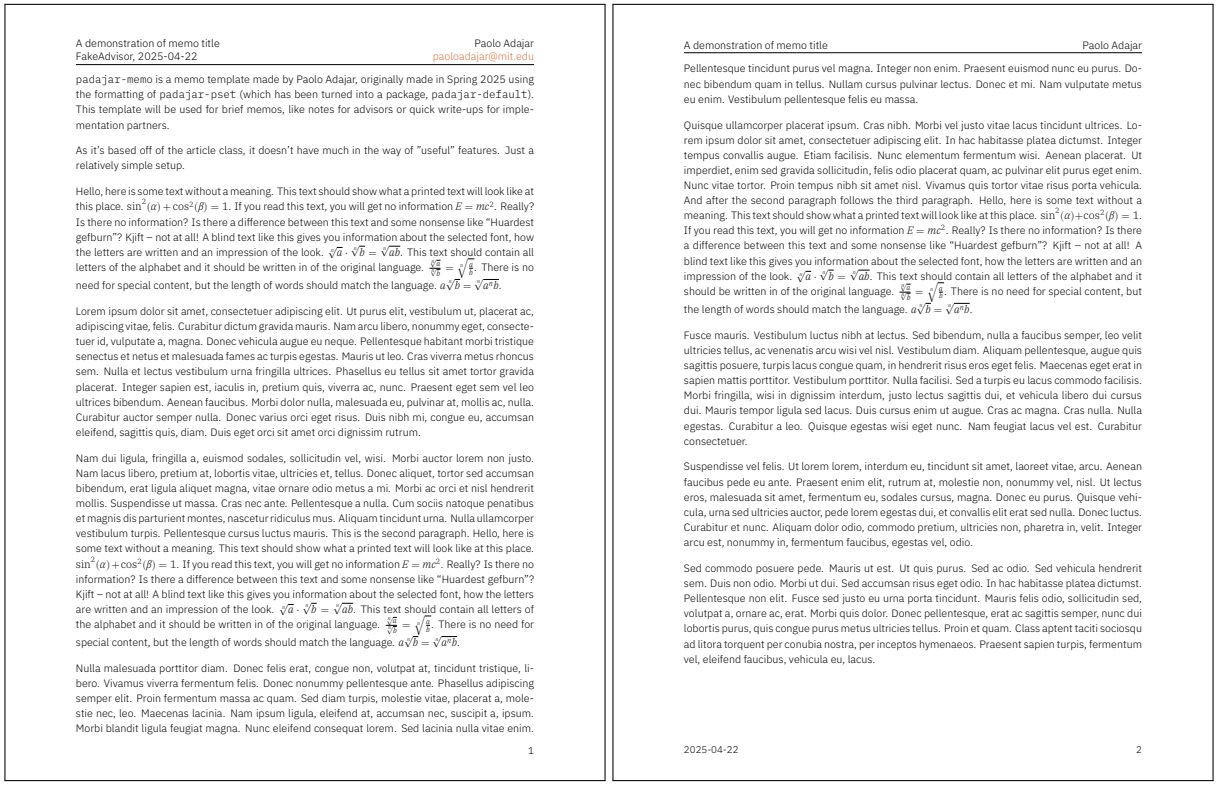
2 classes

I've made three different formats that use `padajar-defaults`, each with its own purpose. These cover the vast majority of things that I create: paragraph-dense writing, problem sets, and presentation slides. I've put the same design ethos through them (and my website), with the intent of making my digital presence a tad more "cohesive".

2.1 padajar-memo

This is the simplest template of the three, and is the one that you're currently viewing.

Figure 1: A preview of the padajar-memo class from memo-example.pdf.



A demonstration of memo title — Paolo Adajar
FakeAdvisor, 2025-04-22 — paoloadajar@mit.edu

padajar-memo is a memo template made by Paolo Adajar, originally made in Spring 2025 using the formatting of padajar-pset (which has been turned into a package, padajar-default). This template will be used for brief memos, like notes for advisors or quick write-ups for implementation partners.

As it's based off of the article class, it doesn't have much in the way of "useful" features. Just a relatively simple setup.

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. $\sin^2(\alpha)+\cos^2(\beta)=1$. If you read this text, you will get no information $E=mc^2$. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. $\sqrt[n]{a}\cdot\sqrt[n]{b}=\sqrt[n]{ab}$. This text should contain all letters of the alphabet and it should be written in of the original language. $\frac{\sqrt[n]{a}}{\sqrt[n]{b}}=\sqrt[n]{\frac{a}{b}}$. There is no need for special content, but the length of words should match the language. $a\sqrt[n]{b}=\sqrt[n]{a^n b}$.

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A demonstration of memo title — Paolo Adajar

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2025-04-22 2

padajar-memo is intended for ideas that are communicated with paragraphs, tables, and figures. At its core, it's really just an article document with my usual settings. It comes with these additional features:

- Fancy headers and footers, which take information from \name, \email, \date, \memotitle, and \memonote.

...and that's really it. The base setup of this class isn't too far different from the article class. It's just meant to be a clean baseline template so I don't always have to futz around with the same imports and options that I always do.

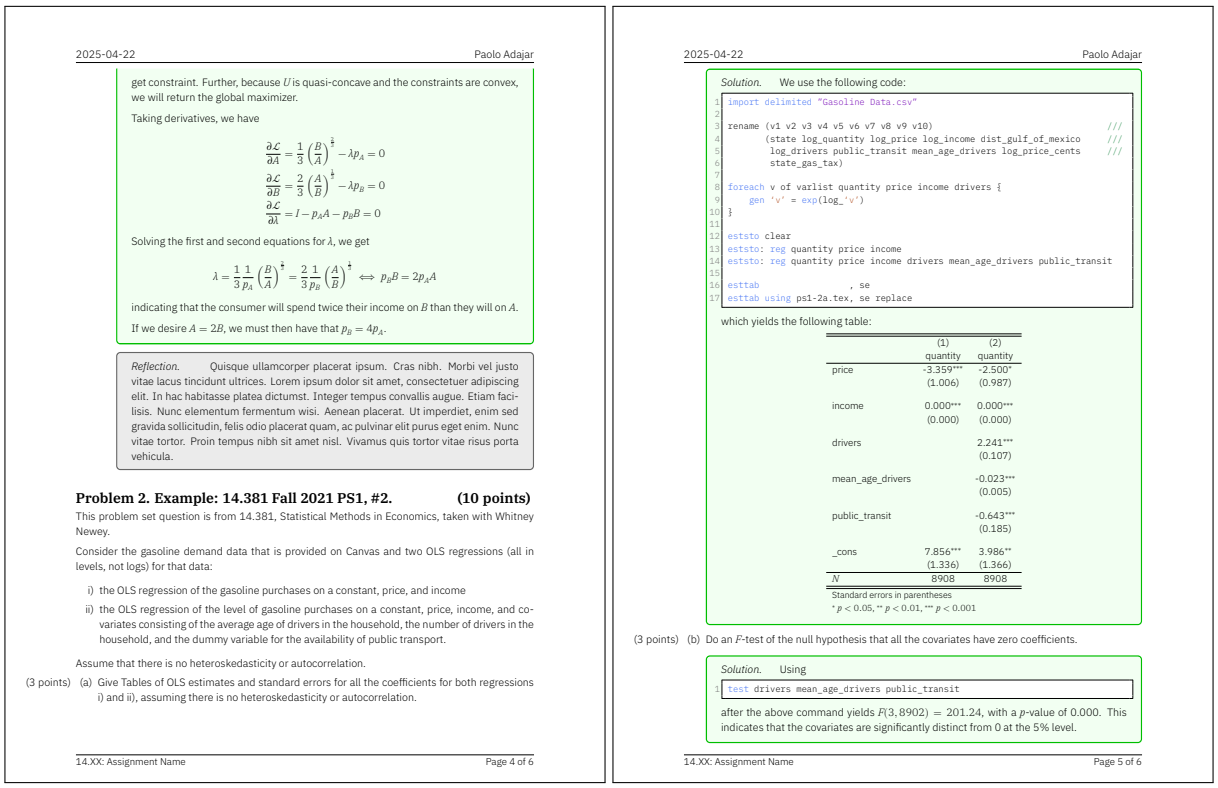
2.2 padajar-pset

This class is meant for writing up psets or exams with solutions. As a modification of the exam class, it retains all exam class functionality, like parts and subparts, the solution environment, and creating versions with and without answers included. For more information, refer to this Overleaf page.

Some key features I've added in:

- The reflection environment. These question reflections are intended to help connect questions to the course as a whole, interesting insights gained through the question, and more. Really, they're just a way to help think more about the "why" of questions. These are encased in a gray colorbox, and can be included either by passing the reflections option

Figure 2: A preview of the `padajar-memo` class from `pset-example.pdf`.



to the class or adding `printreflections` to the preamble.

- The `solution` environment is encased in a green `tcolorbox`.
- Headers and footers which take information from `\name`, `\email`, `\date`, `\date`, `\classnum`, `\classname`, and `\assignment`. Optionally, `\professors` and `\collaborators` can take infinite arguments (separated with curly brackets) and add that information to the first page.

And some usage notes:

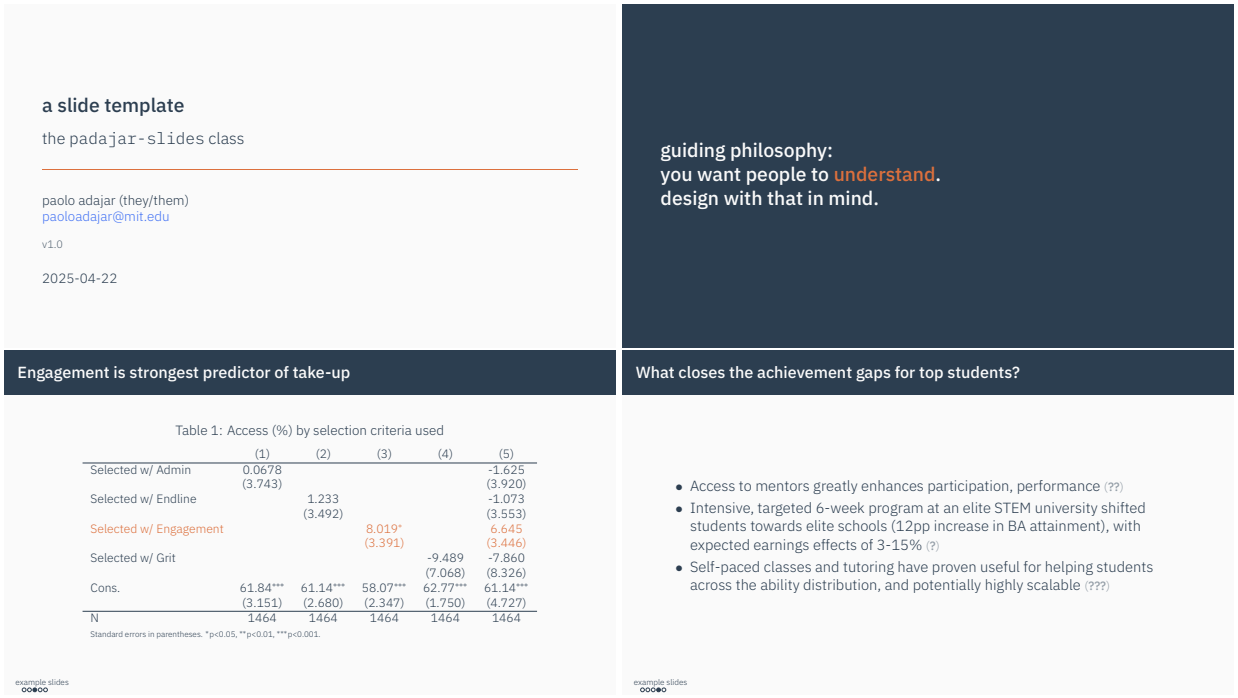
- Questions are styled like sections; you should use `\titledquestion` command for creating questions, and *then* write your question text (i.e., not in the question title). While I know this won't work for every field, multi-part questions are the bread and butter of economics psets.
- You can't use `table` environment (or any other `float` environment) inside the `solution` environment. This is currently solved using the `float` package, and then using the command `\begin{table}[H]`. I'm still looking for a "better" solution to this.

2.3 padajar-slides

This class is based on the `moloch` theme for the `beamer` class, hosted on CTAN here.[1] These are used for presentations, including both paper talks and lecture slides.

[1] `moloch` itself is a fork of the `metropolis` theme, hosted on CTAN here. `metropolis` is no longer maintained, and `moloch` was created to fix some of its bugs — see this blog post.

Figure 3: A preview of the `padajar-slides` class from `slides-example.pdf`.



Key features include:

- Navigation bubbles with section titles on the bottom of slides
- The `[sectionslides]` argument, which, when called, will add a navigation slide at the start of each section.
- `\graycitep`, which will cite bibliography items like `\citep` from the `natbib` package, but will insert citations into smaller, gray text.
- `\btLstHL`, which can highlight specific lines in an `lstlisting` environment by using the option `linebackgroundcolor=\btLstHL<overlay spec>{range list}`
- A default 16:9 aspect ratio, the objectively correct aspect ratio for presentations.

3 issues

This set of files is *far* from perfect right now. Some high-priority issues on my to-do list include:

- Missing characters. I've done some shenanigans to make the math font thinner, and as a result, there are several missing math characters: `\epsilon`, `\varpi`, `\varrho`, `\nabla`, `\surd`, `\mapstochar`, `\lmoustache`, `\rmoustache`, `\arrowvert`, and `\Arrowvert`. The first is set to display as `\varepsilon` (ε), which is what I primarily use anyways, and the last two are legacy and shouldn't pose much of an issue. These should all be manually set to other fonts, but because these don't see much use for me, I haven't found the best replacements yet. One I have already redefined is `\partial` (∂), which is lifted from TEX Gyre Schola; peek inside `padajar-defaults` to see how missing characters should be manually defined.

- Find a better solution for that pesky interaction between `floats` and `\tcolorbox`.
- Fix a few things I *know* are bad LaTeX coding:
  - When the body text is sans-serif, the math text also becomes sans-serif. To change it back to serif, I use `\renewcommand{\text}[1]{\oldtext{\rmfamily #1}`. Yuck.
  - Yeah, yeah, I know I should fix `\epsilon` because *some* people want to use it.
  - Refactor the code, particularly looking for any repeated code and cleaning up the margins/parskip/etc. formatting; that in particular has become a bit of a jumble.
  - Nice code for coloring specific rows/cells of a table? Perhaps something like here.

4 planned features

These are features I'd like to add in the future, but aren't high priority for me at the moment.

- Create the `padajar-paper` and `padajar-notes` class. I expect the former to be similar to `padajar-memo`, but with a few stylistic changes. The latter will probably be in a similar layout as well, but with functionality more akin to lindrew's notes package.
- Make `\btLstHL` work outside of `beamer` classes (i.e., in documents).
- More common math shortcuts? I know there's plenty more I use.
- Add the `subfiles` package (pending research; some online seem to strongly prefer just using `\include` and `\includeonly`).
- A much closer look at all math symbols, finding alternatives for ones that I think have too much weight.
- Just a general look into compile time, and seeing if there are any ways to speed it up.

5 unplanned features

Conversely, here are some things that I explicitly *don't* plan on doing with this set of classes.

- Adding these to CTAN. I think it's incredibly unlikely that these see widespread usage, and probably isn't worth my time. I also think there's far too much idiosyncrasy in all of these formats for them to be used widely. But I guess if you think this has a broader interest, let me know?
- Letting fonts, by default, be something other than IBM Plex. I just like the aesthetic.

A changelog

`1.0.0 (2025-03-30)`	first creation of the memo, pset, and slides classes, each importing the default package
`0.1.0 (2021-07-19)`	initial creation of what would become these classes: a series of LaTeX commands accessed with `\input{paolo-pset.tex}`

B installation instructions

To use this package and set of classes:

1. Download the following files:
    - `padajar-defaults.sty`
    - `padajar-memo.cls`
    - `padajar-pset.cls`
    - `padajar-slides.cls`
2. Place them into *one* of the following places:
    - The same folder as the `.tex` that you are trying to create. This will make it available for only that project.
    - Add it to a local TEX folder, where instructions will vary depending on your TEX installation. This will make it available for all projects on your system.
3. Compile your document using XeLaTeX or LuaLaTeX (required due to `fontspec`).

C license