# Effective Programming Practices for Economists

# Reproducible Research

## Re-using pytask functions

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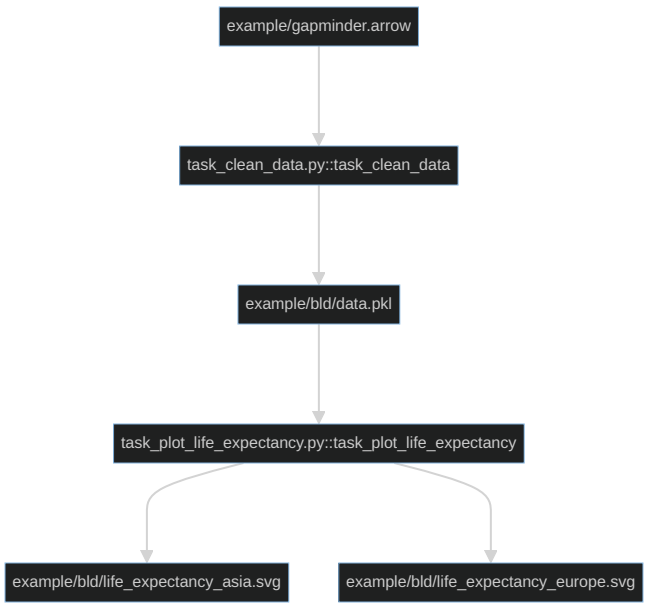
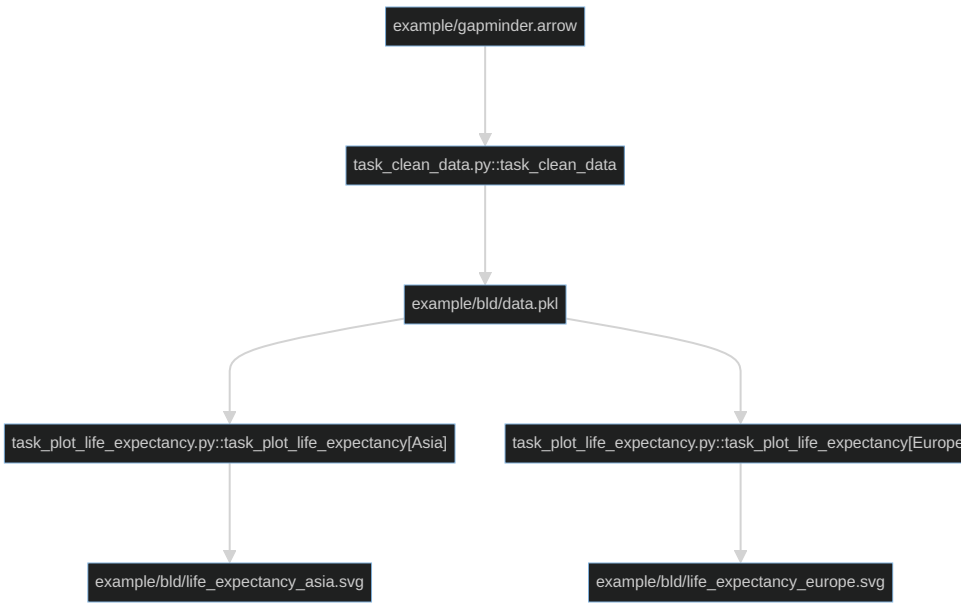
# 1 tasks, 2 products




# 2 tasks, 1 product each



# Contents of task_plot_life_expectancy.py

```
BLD = Path(__file__).parent / "bld"

products = {
    "Asia": BLD / "life_expectancy_asia.svg",
    "Europe": BLD / "life_expectancy_europe.svg"
}

def task_plot_life_expectancy(
    data_file=BLD / "data.pkl",
    produces=products,
):
    df = pd.read_pickle(data_file)
    for region, fig_file in produces.items():
        fig = _plot_life_expectancy(df[df["continent"] == region])
        fig.write_image(fig_file)
```

# Contents of task_plot_life_expectancy.py

```
from pytask import task


BLD = Path(__file__).parent / "bld"

for region in ("Asia", "Europe"):

    @task(id=region)
    def task_plot_life_expectancy(
        data_file=BLD / "data.pkl",
        produces=BLD / f"life_expectancy_{region.lower()}.svg",
        region=region,
    ):
        df = pd.read_pickle(data_file)
        fig = _plot_life_expectancy(df[df["continent"] == region])
        fig.write_image(produces)
```

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# Looping over tasks

- Define your function as usual, but within a loop body
- Set an id based on the running variable(s) via `@task(id=running_var)`
- Set path arguments based on running variable
- Could pass other Python objects, like running variable itself

# Looping over tasks or over products?

- Whatever makes your project structure clearer!
- Same style of graphs based on the same dataset: Probably loop over products
- Model specifications: Loop over tasks
- Long running tasks: Loop over tasks
- Looping over tasks yields more granular structure