COMP 4958: Lab 5

Submit a zip file named card.zip containing everything (except the `_build` directory) in the `card` directory created using `mix`. Maximum score: 11

For this lab, you are asked to implement a dynamic superviser for dynamically creating "card workers" from your previous labs. Each card worker created by the dynamic supervisor needs to retain its state after a crash. Use an ETS table named `Card.Store` to store the state. Put the code for the dynamic supervisor in a module named `Card.WorkerSupervisor`.

The dynamic supervisor provides a `start_worker` function that takes the name of a card worker to start. Each card worker is registered with the process registry. (Name this registry `Card.Registry`.) `Card.Worker` needs to provide the usual functions in its client API: `new(name)`, `shuffle(name)`, `count(name)` and `deal(name, n \\ 1)` (besides `start_link/1` which is invoked by the dynamic supervisor).

Note that there is one dynamic supervisor — it is registered & is under the supervision of the application supervisor. The application supervisor needs to start the process registry as well as the dynamic supervisor. Note that ETS is also started in `Counter.Application`.

Make sure that `deal(name, n)` causes a crash if `n` is not integer, so that we can use something like `Card.Worker.deal("worker1", :hello)` to cause a "restart" of a worker to check that it retains its state. Furthermore, the `start_link` function of `Card.Worker` must print a message whenever a worker is started or re-started.