```julia
html"""
<style>
    main {
        margin: 0 auto;
        max-width: 2000px;
        padding-left: max(160px, 10%);
        padding-right: max(160px, 10%);
    }
</style>
"""
```

```julia
using Pkg
```

```julia
begin
    using DataFrames
    using Statistics
    using PosteriorDB
    using StanSample
end
```

pdb = PosteriorDatabase(...)
```julia
pdb = database()
```

"/Users/rob/.julia/artifacts/95c3074bd791a2f288
```julia
pdb.path
```

["GLMM_Poisson_data-GLMM_Poisson_model", "GLM
```julia
posterior_names(pdb)
```

["GLMM_Poisson_data", "GLMM_data", "GLM_Binom
```julia
dataset_names(pdb)
```

posterior_pdb =
Posterior: eight_schools-eight_schools_centered
```julia
posterior_pdb = posterior(pdb,
    "eight_schools-eight_schools_centered")
```

mod =
Model: eight_schools_centered
Title: A centered hiearchical model for 8 schoo
```julia
mod = model(posterior_pdb)
```

```
Dict("added_date" ⇒ "2019-08-12", "name" ⇒
```

```julia
info(posterior_pdb)
```

```
PosteriorDB.StanModelImplementation(...)
```

```julia
begin
    mod_code = implementation(mod, "stan")
    mod_code
end
```

```julia
impl =
PosteriorDB.StanModelImplementation(...)
```

```julia
impl = implementation(mod, "stan")
```

```julia
begin
    code = load(impl)
    println(code)
end
```

```
data {
  int <lower=0> J; // number of schools
  real y[J]; // estimated treatment
  real<lower=0> sigma[J]; // std of estimated effect
}
parameters {
  real theta[J]; // treatment effect in school j
  real mu; // hyper-parameter of mean
  real<lower=0> tau; // hyper-parameter of sdv
}
model {
  tau ~ cauchy(0, 5); // a non-informative prior
  theta ~ normal(mu, tau);
  y ~ normal(theta, sigma);
  mu ~ normal(0, 5);
}
```

```
Dict("added_date" ⇒ "2019-08-12", "name" ⇒
```

```julia
info(mod)
```

```
post =
Dataset: eight_schools
Title: The 8 schools dataset of Rubin (1981)
```

```
    •   post = dataset(posterior_pdb)
```

```
    Dict("added_date" ⟹ "2019-08-12", "name" ⟹
```

```
    •   info(posterior_pdb)
```

```
"/Users/rob/.julia/artifacts/95c3074bd791a2f288
```

```
    •   path(post)
```

```
data =
    Dict("sigma" ⟹ [15, 10, 16, 11, 9, 11, 10, 18
```

```
    •   data = load(post)
```

```
ref =
Reference posterior: eight_schools-eight_school
```

```
    •   ref = reference_posterior(posterior_pdb)
```

```
    Dict("added_date" ⟹ "2020-04-06", "name" ⟹
```

```
    •   info(ref)
```

```
"/Users/rob/.julia/artifacts/95c3074bd791a2f288
```

```
    •   path(ref)
```

```
pdb_df =
```

	tau	
1	[1.79395, 2.15365, 2.29508, 1.7082	[9.6...
2	[7.63743, 2.74969, 3.66891, 6.3520	[7.2...
3	[0.632481, 6.08588, 1.89192, 8.089	[8.0...
4	[4.57241, 4.43668, 4.3818, 3.20624	[4.8...
5	[4.44508, 0.471372, 6.4062, 1.7324	[9.7...
6	[2.01252, 0.913913, 1.77058, 6.884	[0.6...
7	[4.61368, 4.27341, 1.8199, 0.97406	[5.8...
8	[3.16983, 4.24302, 0.0641317, 0.79	[6.3...
9	[2.60459, 1.30387, 7.20344, 5.2728	[9.0...
10	[8.39797, 0.786562, 5.41543, 4.893	[13.4...

```
pdb_df = DataFrame(load(ref))
```

```
[[9.33885, 3.69197, -1.01337, 2.66779, 4.04478
```

```
pdb_df.mu
```

```
begin
    sm = SampleModel("PDB", code)
    rc = stan_sample(sm; data)
end;
```

```
/var/folders/l7/pr04h0650q5dvqttnvs8s
2c00000gn/T/jl_IV0rPY/PDB.stan update
d.
```

	theta.1	theta.2	theta.3	theta.4	t
1	4.78606	9.40292	4.38827	3.40247	4.
2	2.52228	7.20521	5.92085	3.95825	1.
3	2.25987	5.01204	3.10504	5.12412	-0
4	4.34419	4.62408	5.17854	5.7141	2.
5	4.10692	3.9099	3.53658	3.13454	4.
6	6.0979	6.09208	5.96541	7.19589	4.
7	7.05189	4.71521	5.54425	7.60579	5.
8	4.3838	6.83047	6.41488	4.87495	6.
9	5.39593	5.26451	2.66007	3.77111	3.
10	2.68284	4.4831	3.66437	3.48659	3.

more

| 4000 | 23.4713 | 14.6192 | -24.1105 | 2.03509 | -1 |

```
if success(rc)
    df = read_samples(sm, :dataframe)
end
```