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YAML files

configure your code

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Why configure code ?

- When we conduct experiments we need to **modify several parameters**.
- Changing the parameters directly in code:
 - Takes time to find
 - Could break running code
 - Might forget changing one out of x

Any solution ?



Introducing YAML files

%YAML 1.2

YAML: YAML Ain't Markup Language™

What It Is:

YAML is a human-friendly data serialization language for all programming languages.

YAML Resources:

YAML Specifications:

- YAML 1.2:
 - Revision 1.2.2 # Oct 1, 2021 *New*
 - Revision 1.2.1 # Oct 1, 2009
 - Revision 1.2.0 # Jul 21, 2009
- YAML 1.1
- YAML 1.0

Welcome to PyYAML

[PyYAML](#) is a full-featured [YAML](#) framework for the Python programming language.



How does it look ?

```
---
doe: "a deer, a female deer"
ray: "a drop of golden sun"
pi: 3.14159
xmas: true
french-hens: 3
calling-birds:
  - huey
  - dewey
  - louie
  - fred
xmas-fifth-day:
  calling-birds: four
  french-hens: 3
  golden-rings: 5
  partridges:
    count: 1
    location: "a pear tree"
  turtle-doves: two
```

```
import yaml
yaml.safe_load(configfile.yaml)
```

```
{
  "doe": "a deer, a female deer",
  "ray": "a drop of golden sun",
  "pi": 3.14159,
  "xmas": true,
  "french-hens": 3,
  "calling-birds": [
    "huey",
    "dewey",
    "louie",
    "fred"
  ],
  "xmas-fifth-day": {
    "calling-birds": "four",
    "french-hens": 3,
    "golden-rings": 5,
    "partridges": {
      "count": 1,
      "location": "a pear tree"
    },
    "turtle-doves": "two"
  }
}
```

A -personal- usage recommendation

```
my_package/  
├── scripts  
│   └── global_job_submission.py  
└── src  
    ├── configs  
    │   ├── fitting.yaml  
    │   ├── global.yaml  
    │   ├── online_cuts.yaml  
    │   ├── plotting.yaml  
    │   └── steering.yaml  
    ├── fitter.py  
    ├── plotter.py  
    ├── steering_file.py  
    └── utils.py
```

3 directories, 10 files

```
from os import path  
from yaml import safe_load  
  
from my_package import __file__ as package_init_path  
  
def read_yaml_to_dict(cfg_name):  
  
    cfg_path = path.dirname(package_init_path) + f"/configs/{cfg_name}.yaml"  
    with open(cfg_path, "r") as file:  
        cfg = safe_load(file)  
  
    return cfg
```

Some application opportunities (taken from my repo)

```
1 workers: 800
2 testing: false
3 sleep: true
4 n_events: 0
5 n_files: 0
6 exp: 17
7 n_subs: 1
8 mc_processes:
9   - mixed
10  - charged
11  - ccbar
12  - ssbar
13  - ddbar
14  - uubar
15 data_processings:
16   #- proc12
17   #- bucket16
18   #- bucket17
19   #- bucket18
20   #- bucket19
21   #- bucket20
22   #- bucket21
23   #- bucket22
24   #- bucket23
25   #- bucket24
26   #- bucket25
27 origin:
28   - mc
29   #- data
30 decays:
31   - BtoDstpi
32   - BtoDstrho
33   - BtoDstell
34 sidebands:
35   #- event_nROE_Charged_bgg_mask
36   #- event_roe_Fextra_bgg_mask
37   #- Btag_Mbc
38 git_hash: light-2205-abys
39 plots:
40   - final_selections
41   - pions
42   - kaons
43   - pi0s
44   - kshorts
45 out_dir: /nfs/dust/belle2/user/itsaklid/analysis/
46 tuple_name: analysis.root
```

```
21 pion_signal:
22   - "[abs(d0)<0.5]"
23   - "[abs(z0)<2]"
24   - "[nCDCHits>20]"
25   - "[pionID>0.6]"
26
27 kaon_normal:
28   - "[abs(d0)<0.5]"
29   - "[abs(z0)<2]"
30   - "[nCDCHits>20]"
31   - "[binaryPID(321, 211) > 0.4]"
32
33 electron:
34   working_point: FixedThresh09
35   method: likelihood
36   classification: global
37   lid_weights_gt: leptonid_Moriond2022_Official_rel5_v2b
38   release: 5
39   outputListLabel: norm
```

```
1 hid_path : /afs/desy.de/user/i/itsaklid/repos/pid_dst_sandilya/dtmc_logs/official
2 lid_path : /afs/desy.de/user/i/itsaklid/repos/pidvar/examples/pid_tables/lepton/eps21_mc14_v4
3 mc_lumi : 500
4 data_lumi : 189.9
5 b_mode : B0
```

Enjoy ;-)

