

# Automated Construction of Task Dependency Graphs

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# Automatic arrangement of tasks

Want to avoid arranging tasks in parallel- and sequential- task collections? Use a DepedentTaskCollection!

```
from qc3libs.workflow \
  import DependentTaskCollection
class MyWorkflow (DependentTaskCollection) :
  # ...
  def init (self, ...):
    DependentTaskCollection.__init__(self)
    app1 = AnApp(...)
    app2 = AnotherApp(...)
    app3 = AThirdApp(...)
    self.add(app1)
    self.add(app2)
    self.add(app3, after=[app1, app2])
```

```
from qc3libs.workflow \
  import DependentTaskCollection
class MyWorkflow(DependentTaskCollection):
  # ...
 def init (self, ...):
    DependentTaskCollection. init (self)
    app1 = AnApp(...)
    app2 = AnotherApp(...)
    app3 = AThirdApp(...)
    self.add(app1)
    self.add(app2)
    self.add(app3, after=[app1, app2])
```

Initialize the base class.

```
from qc3libs.workflow \
  import DependentTaskCollection
class MyWorkflow(DependentTaskCollection):
  # ...
 def init (self, ...):
    DependentTaskCollection. init (self)
    app1 = AnApp(...)
    app2 = AnotherApp(...)
    app3 = AThirdApp(...)
    self.add(app1)
    self.add(app2)
    self.add(app3, after=[app1, app2])
```

... then initialize tasks that you want to run ...

```
from qc3libs.workflow \
  import DependentTaskCollection
class MyWorkflow (DependentTaskCollection):
  # ...
  def init (self, ...):
    DependentTaskCollection. init (self)
    app1 = AnApp(...)
    app2 = AnotherApp(...)
    app3 = AThirdApp(...)
    self.add(app1)
    self.add(app2)
    self.add(app3, after=[app1, app2])
```

... then add tasks to the collection, one by one...

```
from gc3libs.workflow \
  import DependentTaskCollection
class MyWorkflow (DependentTaskCollection):
  # . . .
  def init (self, ...):
    DependentTaskCollection. init (self)
    app1 = AnApp(...)
    app2 = AnotherApp(...)
    app3 = AThirdApp(...)
    self.add(app1)
    self.add(app2)
    self.add(app3, after=[app1, app2])
```

... specifying dependencies among them.