Slightly More Interesting Target

```
// Add the following include files
#include "InfString.h"
#include "GalIter.h"

// Modify the setup method
void MyTarget::setup() {

  // An infinite string class
  InfString list;

  // Construct a list of the blocks at the top level
  // using an iterator.
  GalTopBlockIter blockIterator(*galaxy());
  Block *b;
  while ((b = blockIterator++) != 0) {
    list << b->name() << "\n";
  }

  // Display the names
  Error::message(list);
}
```

The World's Simplest Target — Compilation

```
# The following extremely simple makefile will work

MyTarget.o:MyTarget.cc
    g++ -I$(PTOLEMY)/src/kernel -c MyTarget.cc
```

The World's Simplest Target — Instantiation

```
// A class that keeps track of all available Targets:
#include "KnownTarget.h"

// Create an instance of the Target (there has to be
// at least one instance from which clones are made).
// The arguments are:
//     Target name
//     types of stars supported
//     a short description of the Target
static MyTarget myTargetPrototype("MyTarget", "SDFStar",
           "The world's simplest Target");

// Register the Target in the list of known Targets.

static KnownTarget entry(myTargetPrototype,"MyTarget");
```

The World's Simplest Target — Method Definitions

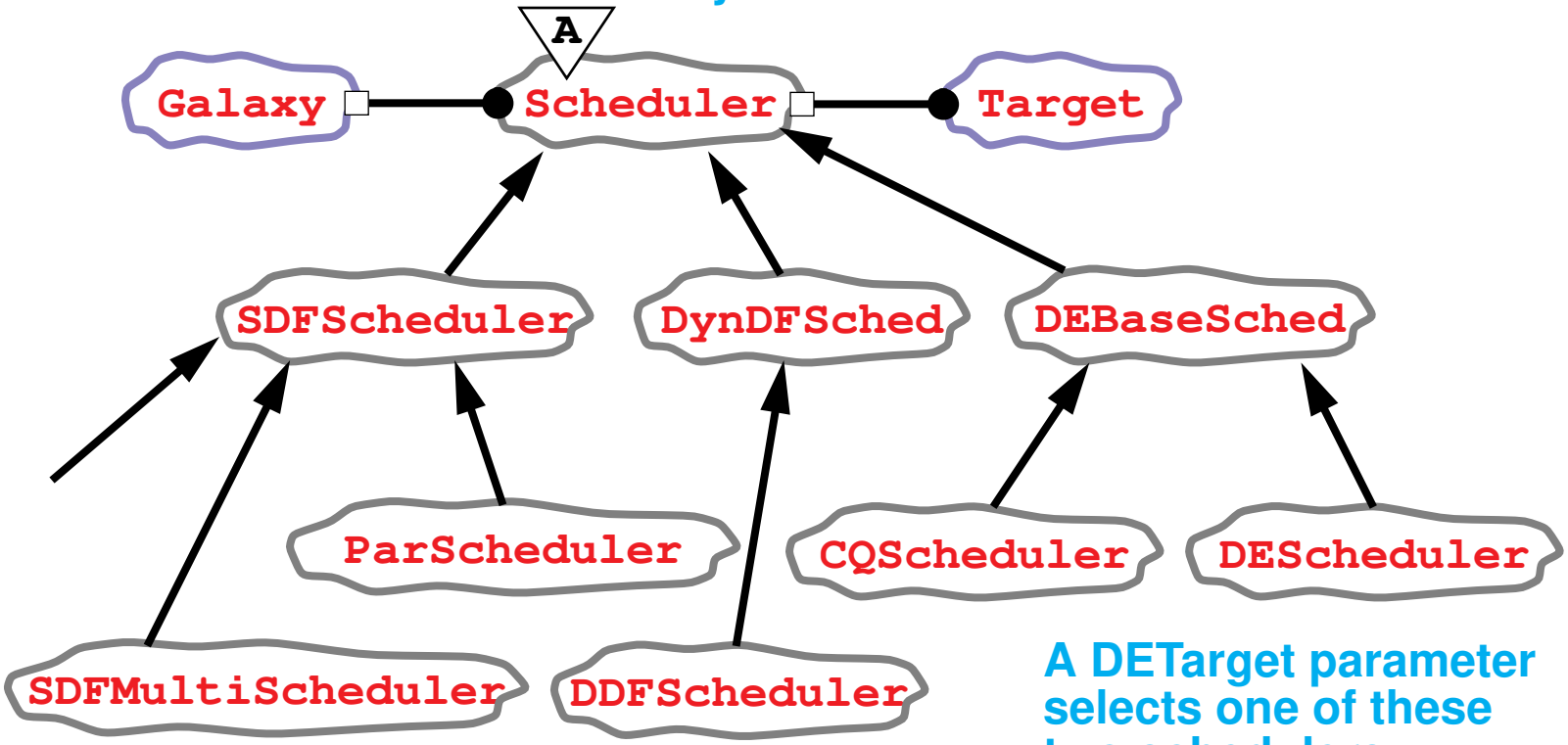
```
// These methods just use the Error class to issue messages

void MyTarget::setup() {
  Error::message("Requesting setup\n");
}

int MyTarget::run() {
  Error::message("Requesting run\n");
  return 1;
}

void MyTarget::wrapup() {
  Error::message("Requesting wrapup\n");
}

// The method to return a new instance
Block* MyTarget::makeNew() const {
  return new MyTarget(name(), starType(), descriptor());
}
```

The World's Simplest Target — Class Definition

```
// The base class template file must be included
#include "Target.h"

class MyTarget : public Target {
public:
  void setup();
  int run();
  void wrapup ();

  // The constructor simply passes the arguments on
  // to the base class constructor.
  MyTarget(const char* nam,const char* stype
       const char* desc) : Target(nam,stype,desc) {}

  // Every Target has a method to make another instance
  // of the same type of Target.
  Block* makeNew() const;
};
```

Scheduler Class Hierarchy

A Scheduler contains a Galaxy



A DETarget parameter selects one of these two schedulers

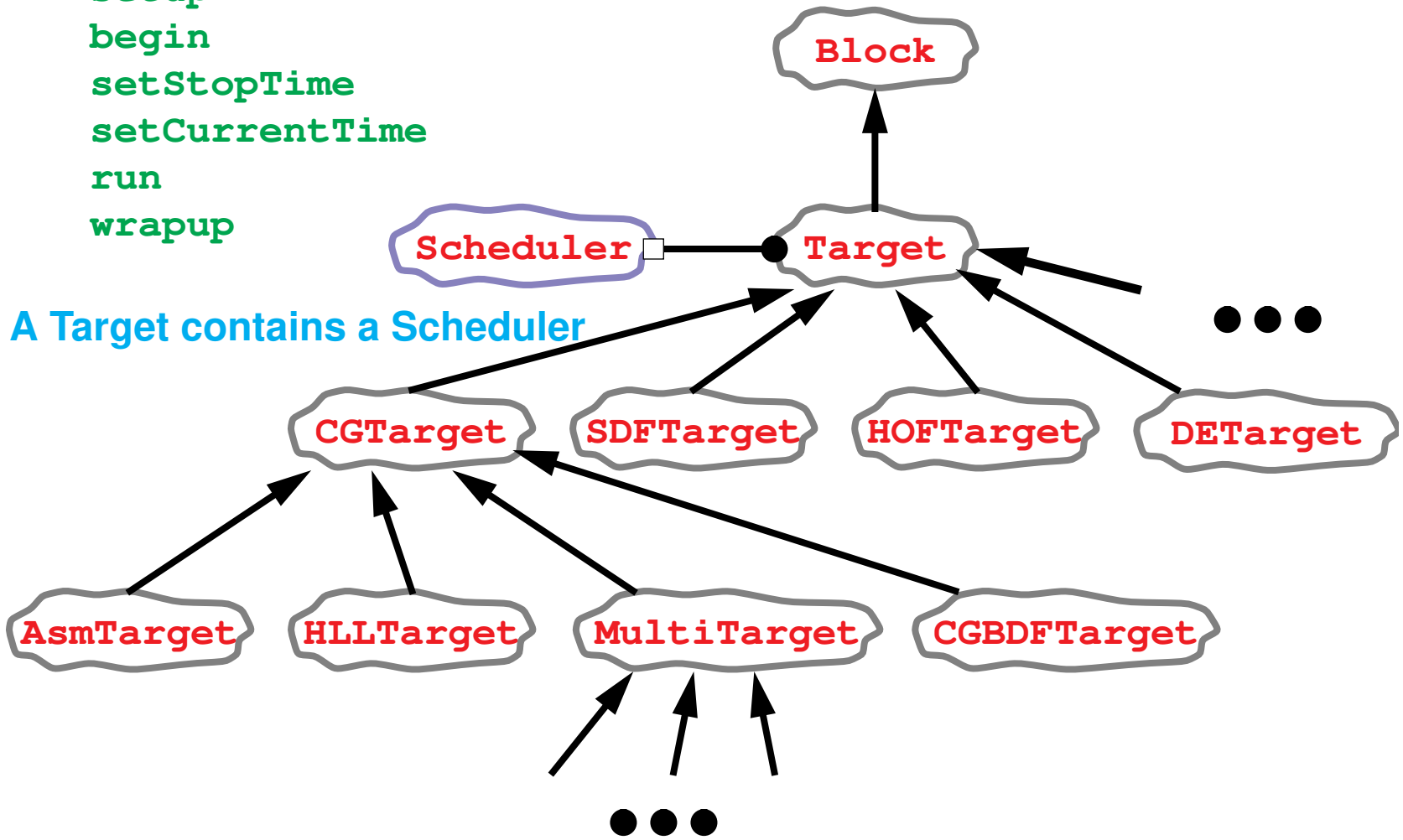
Scheduler methods

```
setup
setStopTime
setCurrentTime
run
```

Target Class Structure

Target methods

```
setup
begin
setStopTime
setCurrentTime
run
wrapup
```



A Target contains a Scheduler

Defining Targets

- A Target supervises the execution of Universe
- A Universe has a Target that manages its execution
- A Target normally contains a Scheduler
- The Target is a Block, and hence can have States
- A Target can do simulation, code generation, or compilation
- A Target can have child Targets (e.g. for multiprocessors)