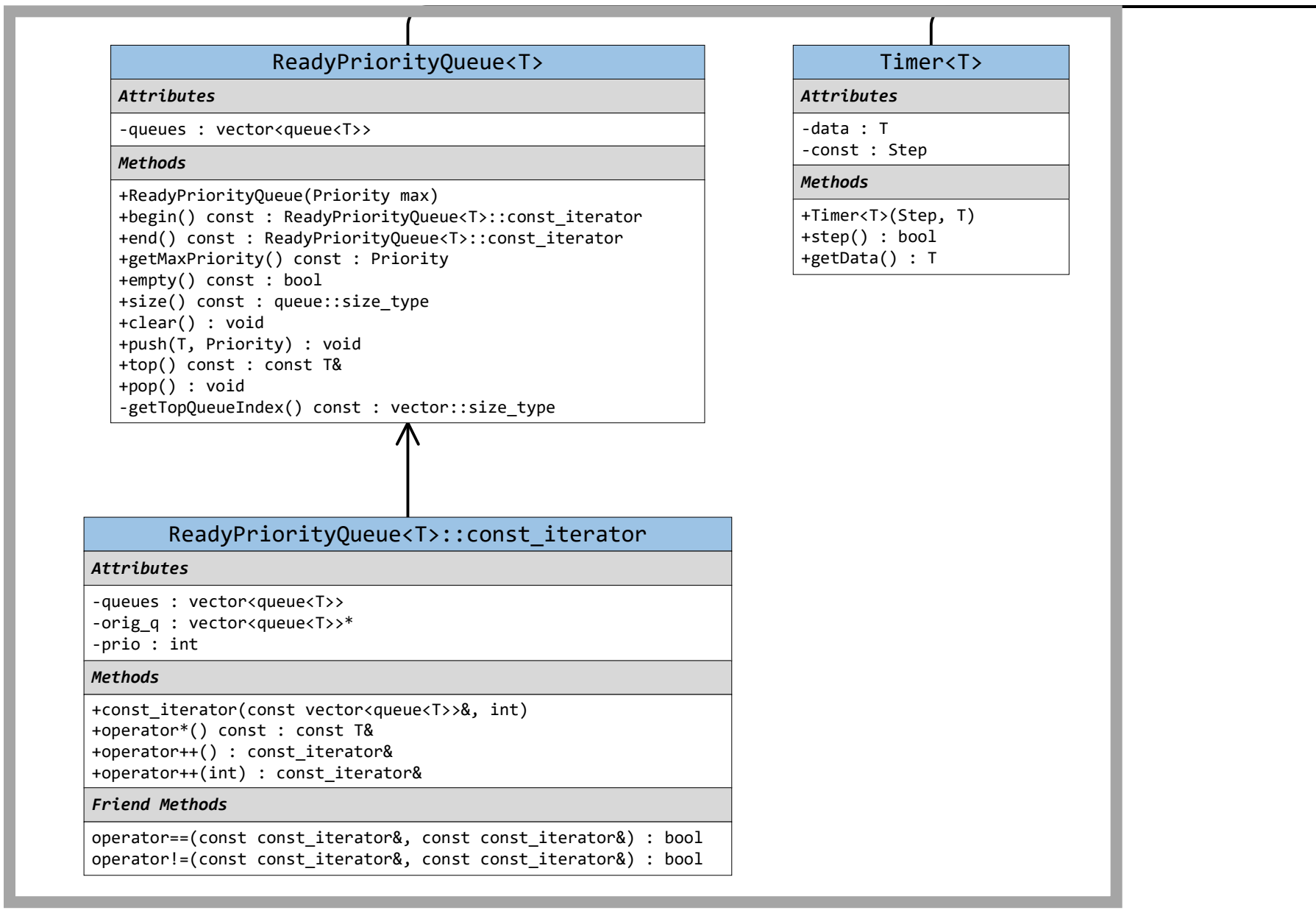
ReadyPriorityQueue<T>
Attributes
-queues : vector<queue<T>>
Methods
+ReadyPriorityQueue(Priority max)
+begin() const : ReadyPriorityQueue<T>::const_iterator
+end() const : ReadyPriorityQueue<T>::const_iterator
+getMaxPriority() const : Priority
+empty() const : bool
+size() const : queue::size_type
+clear() : void
+push(T, Priority) : void
+top() const : const T&
+pop() : void
-getTopQueueIndex() const : vector::size_type
Timer<T>
Attributes
-data : T
-const : Step
Methods
+Timer<T>(Step, T)
+step() : bool
+getData() : T
ReadyPriorityQueue<T>::const_iterator
Attributes
-queues : vector<queue<T>>
-orig_q : vector<queue<T>>*
-prio : int
Methods
+const_iterator(const vector<queue<T>>&, int)
+operator*() const : const T&
+operator++() : const_iterator&
+operator++(int) : const_iterator&
Friend Methods
operator==(const const_iterator&, const const_iterator&) : bool
operator!=(const const_iterator&, const const_iterator&) : bool

System

Attributes

```
-settings : SystemSettings
-cpus : vector<CPU>
-PCB_table : map<PID, PCB>
-ready : ReadyPriorityQueue<PID>
-blocked : list<PID>
-process_entry_timers : vector<Timer<ProcessInit>>
-retired : list<PCB>
```

Methods

```
+System(SystemSettings)
+updateSettings(SystemSettings) : void
+simulate(vector<ProcessPlan>) : void
+simulate() : void
+outputStats() : SimulationStats
-addProcess(const ProcessInit&, Step) : void
-clearState()
```

CPU

Attributes

```
-proc : PCB*
-last_id : PID
-t : Timer<CPUState>
-stats : CPUStats
-settings : SystemSettings
```

Methods

```
+CPU(SystemSettings, CPUID)
+getStats() : CPUStats
+getState() : CPUState
+getPID() const : PID
+isFCFS() const : bool
+assigned() const : bool
+assign(PCB*) : void
+deassign() : void
+step() : bool
```

SystemSettings

Attributes

```
+CPU_COUNT : CPUID
+PROCESS_COUNT : PID
+RR_TIME : Step
+SWITCHING_IN_DELAY : Step
+SWITCHING_OUT_DELAY : Step
```

Methods

```
+print(int) const : void
+fcfs() : SystemSettings
```

typedefs

```
Step = uint32_t
PID = uint16_t
Priority = uint16_t
CPUID = vector::size_type
```

PCB

Attributes

```
+id : PID
+state : ProcessState
+prio : Priority
+steps_waited : Step
+steps_used : Step
+steps_total : Step
+plan : ProcessPlan
+pd : ProcessData
```

<<enum>> CPUState

Values

```
idle
assigned_idle
switching_in
switching_out
processing
```

ProcessData

Attributes

```
+placeholder : void*
```

ProcessPlan

Attributes

```
+arrival : Step
+init : ProcessInit
```

<<enum>> ProcessState

Values

```
ready
running
blocked
exit
switching
```

ProcessInit

Attributes

```
+id : PID
+bursts : ProcessBursts
```

ProcessBursts

Attributes

```
-processing : bool
-bursts : list<Step>
```

Methods

```
+ProcessBursts(iterator_type, iterator_type, bool)
+cbegin() const : list::const_iterator
+cend() const : list::const_iterator
+size() const : list::size_type
+empty() const : bool
+stepsRemaining() const : Step
+isProcessing() : bool
+front() : Step
+pop() : void
+step() : bool
+print() const : void
```

ManyStats

Attributes

+name : string
+vector<SImulationStats> : runs

Methods

+getFolderName() const : string
+exportStats() const : void

ProcessStats

Attributes

+settings : SystemSettings
+ps : vector<ProcesStats>
+cs : vector<CPUStats>

Methods

+SimulationStats(SystemSettings, PSIt, PSIt, CSIt, CSIt)
+getThroughput() const : double
+getAvgTurnaround() const : double
+getAvgWait() const : double
+getAvgResponse() const : double
+getAvgResponseAdjusted() const : double
+adjustForCPUs(double) const : double
+getAvgProcessLength() const : double
+collapseCPUHistory() const : History<CPUState>
+collapseProcessHistory() const : History<ProcessState>
+printCPUStatsSummary() const : void
+printProcessStatsSummary() const : void
+printCPUStatsFull() const : void
+printProcessStatsFull() const : void
+printStats() const : void
+getFolderName() const : string
+exportStats(string) const : void
+exportStats() const : void
+to_csv_header() : string
+to_csv_row() const : string

CPUStats

Attributes

+id : CPUID
+hist : History<CPUState>

Methods

+getStatePercent(CPUState) const : double
+print(int) : void

ProcessStats

Attributes

+id : const PID
+prio : const Priority
+started : Step
+plan : ProcessBursts
+hist : History<ProcessState>

Methods

+ProcessStates(const ProcessInit&, Step,
History<ProcessState>)
+getTurnaround() const : Step
+getWait() const : Step
+getResponse() const : Step
+getResponseAdjusted() const : double
+print(int) : void

History<E>

Attributes

-trace : vector<Period>

Methods

+History()
+cbegin() const : vector<Period>::const_iterator
+cend() const : vector<Period>::const_iterator
+begin() const : vector<Period>::const_iterator
+end() const : vector<Period>::const_iterator
+push(E, Step) : void
+inc(E) : void
+duration() const : Step
+duration(E) const : Step
+print(int) const : void
+printPercentages(int) const : void
+to_timeline_csv() const : string
+to_piechart_csv() const : string

History<E>::Period

Attributes

+state : E
+duration : Step

Methods

+operator+=(Step) : Period&