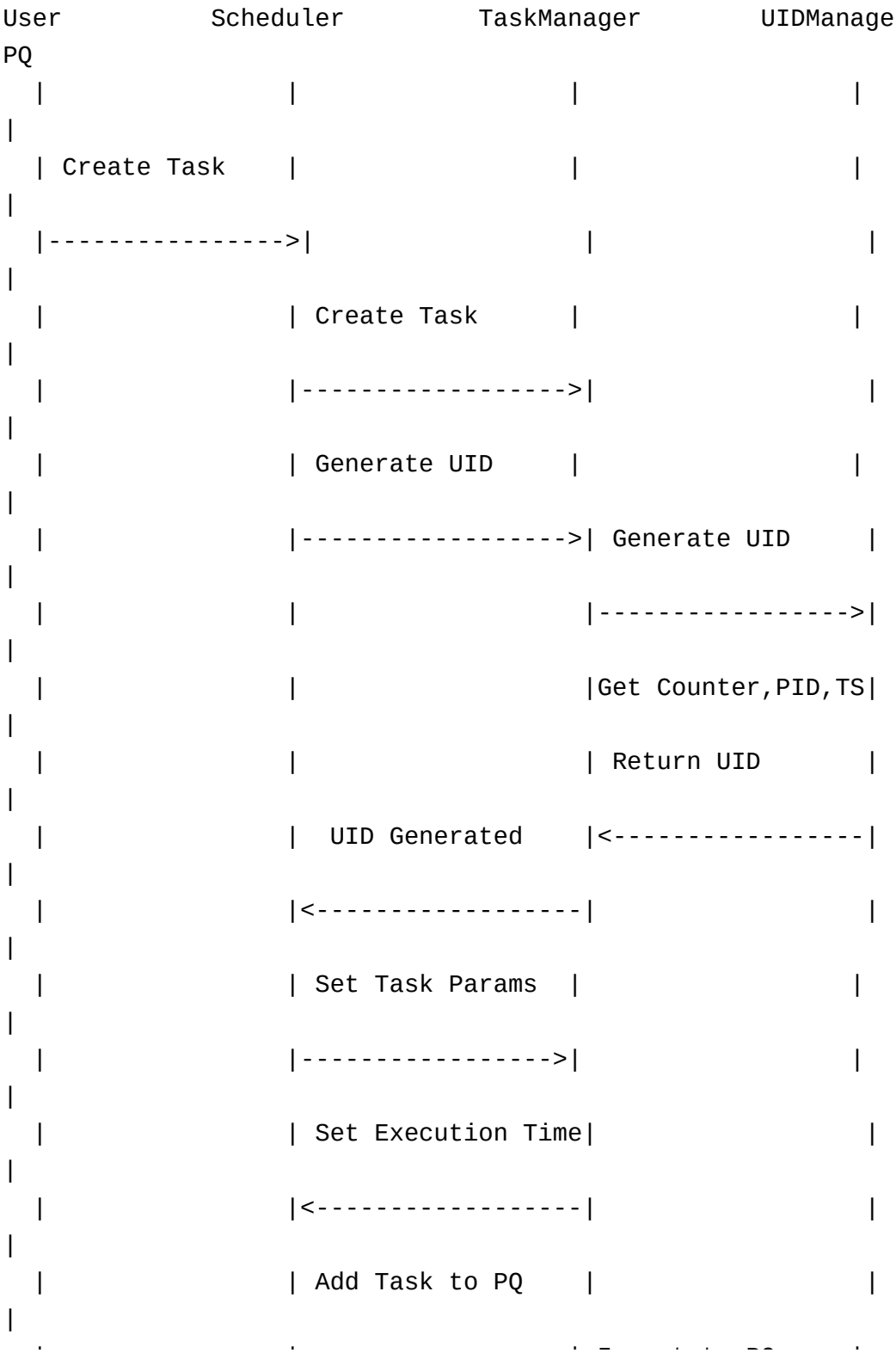
Scheduler Workflow Diagram

Task Creation Workflow



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```
Task |
  |                |  Task Inserted    |                  |
|
  |                |<------------------|                  |
|
  | Task Created   |                   |                  |
|
  |<---------------|                   |                  |
|
```

Task Execution Workflow

```
User          Scheduler         TaskManager        UIDManager
PQ
  | Execute Task   |                  |                  |
|
  |--------------->|                  |                  |
|
  |                | Get Next Task    |                  |
|
  |                |----------------->|                  |
|
  |                | Retrieve Task    |                  |
|
  |                |----------------->| Retrieve Task    |
|
  |                |                  |----------------->|
|
  |                |                  | Task Retrieved   |
|
  |                |<-----------------|                  |
|
  |                | Execute Task     |                  |
|
  |                |----------------->| Execute OpFunc   |
|
  |                | Run Task Operation|                 |
|
  |                |----------------->| OpFunc()         |
```

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```
|
  |                |<-----------------|                  |
|
  |                | Update Task Time  |                  |
|
  |                |----------------->| Update Time      |
|
  |                |                  | New Exec Time    |
|
  |                |                  |----------------->|
|
  |                | Reinsert Task     |                  |
|
  |                |----------------->| Insert Task      |
|
  |                |                  |----------------->| Insert
Task |
  |                |                  | Task Reinserted  |
|
  |                |<-----------------|                  |
|
  | Task Executed  |                  |                  |
|
  |<---------------|                  |                  |
|
```

Task Removal Workflow

```
User          Scheduler         TaskManager        UIDManager
PQ
  | Erase Task     |                  |                  |
|
  |--------------->|                  |                  |
|
  |                | Find Task        |                  |
|
  |                |----------------->|                  |
|
  |                | Match Task       |                  |
```

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```
|
  |                |                    |----------------->|
|
  |                |                    | Match Found      |
|
  |                |                    |<-----------------|
|
  |                | Remove Task      |                   |
|
  |                |----------------->| Remove Task      |
|
  |                |                    |----------------->|
|
  |                |                    | Task Removed     |
|
  |                |<-------------------|                   |
|
  | Task Removed   |                    |                   |
|
  |<---------------|                    |                   |
|
```

Priority Queue Operations

```
User          Scheduler         TaskManager        UIDManager
PQ
  | Insert Task    |                  |                   |
|
  |--------------->|                  |                   |
|
  |                | Insert Task to PQ |                  |
|
  |                |----------------->|                   |
|
  |                | Task Inserted    |                   |
|
  |                |<-----------------|                   |
|
  | Get Task       |                  |                   |
```

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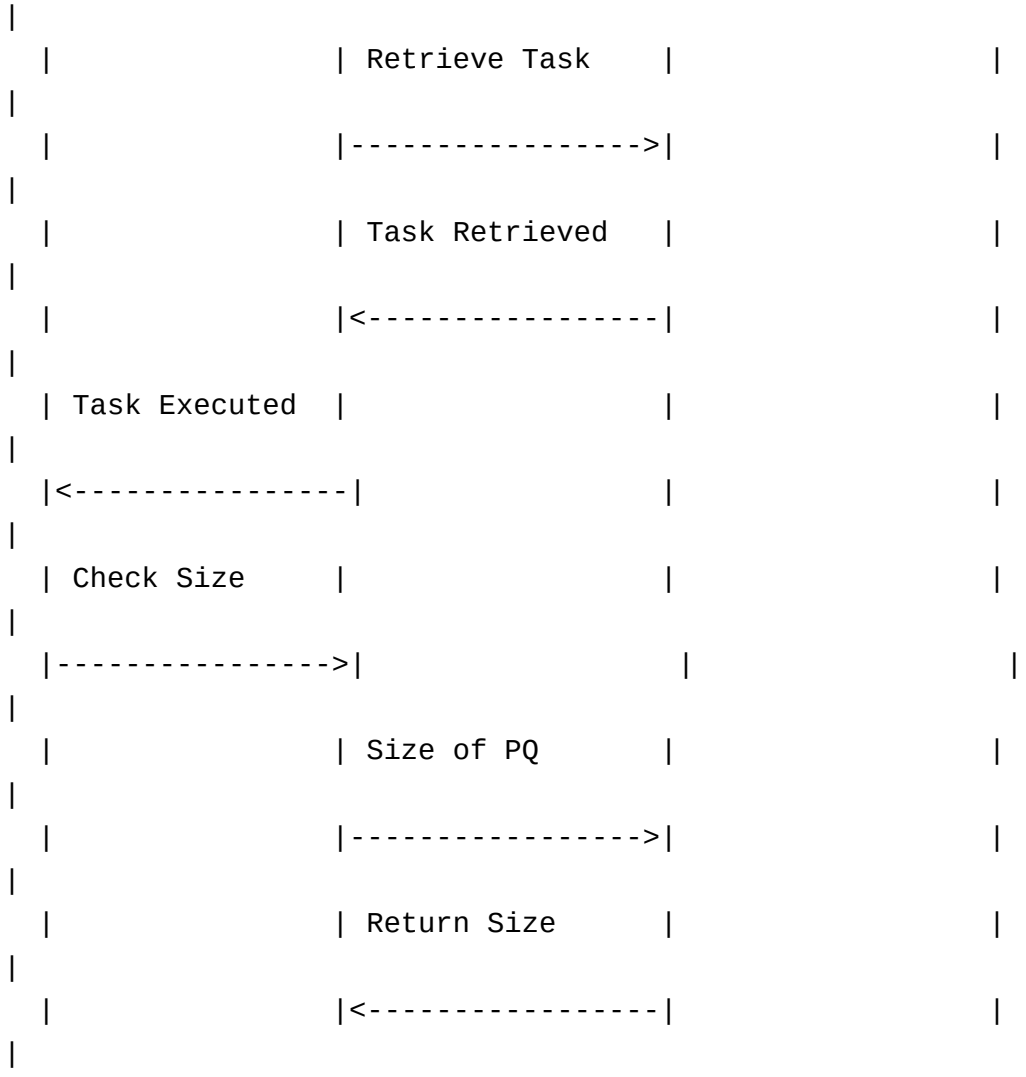

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