

## 4. GREEDY ALGORITHMS I

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- ▶ *earliest-start-time-first algorithm demo*

Lecture slides by Kevin Wayne

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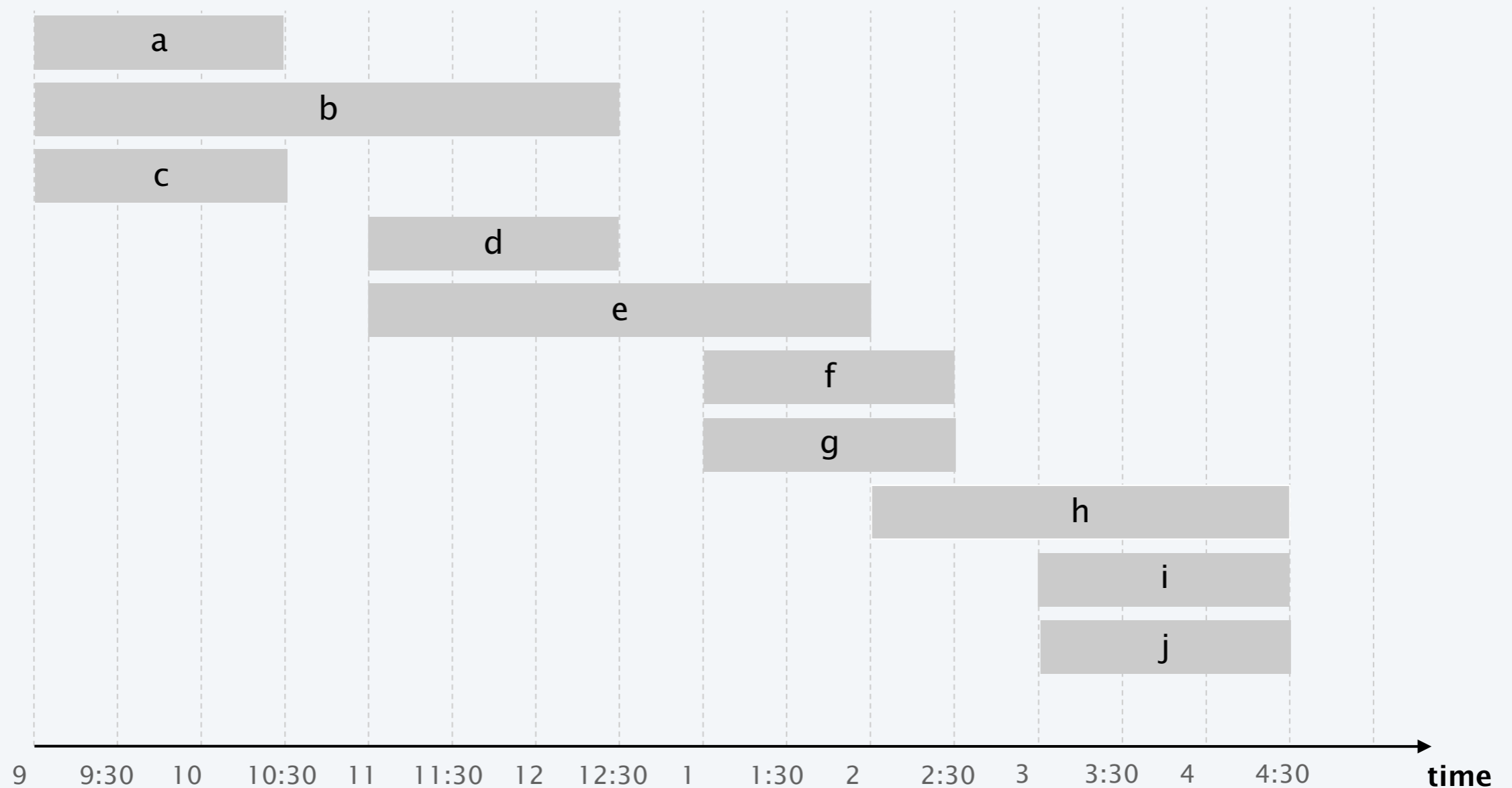
<http://www.cs.princeton.edu/~wayne/kleinberg-tardos>

# Earliest-start-time-first algorithm demo

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Consider lectures in order of start time:

- Assign next lecture to any available classroom (if one exists).
- Otherwise, open up a new classroom.



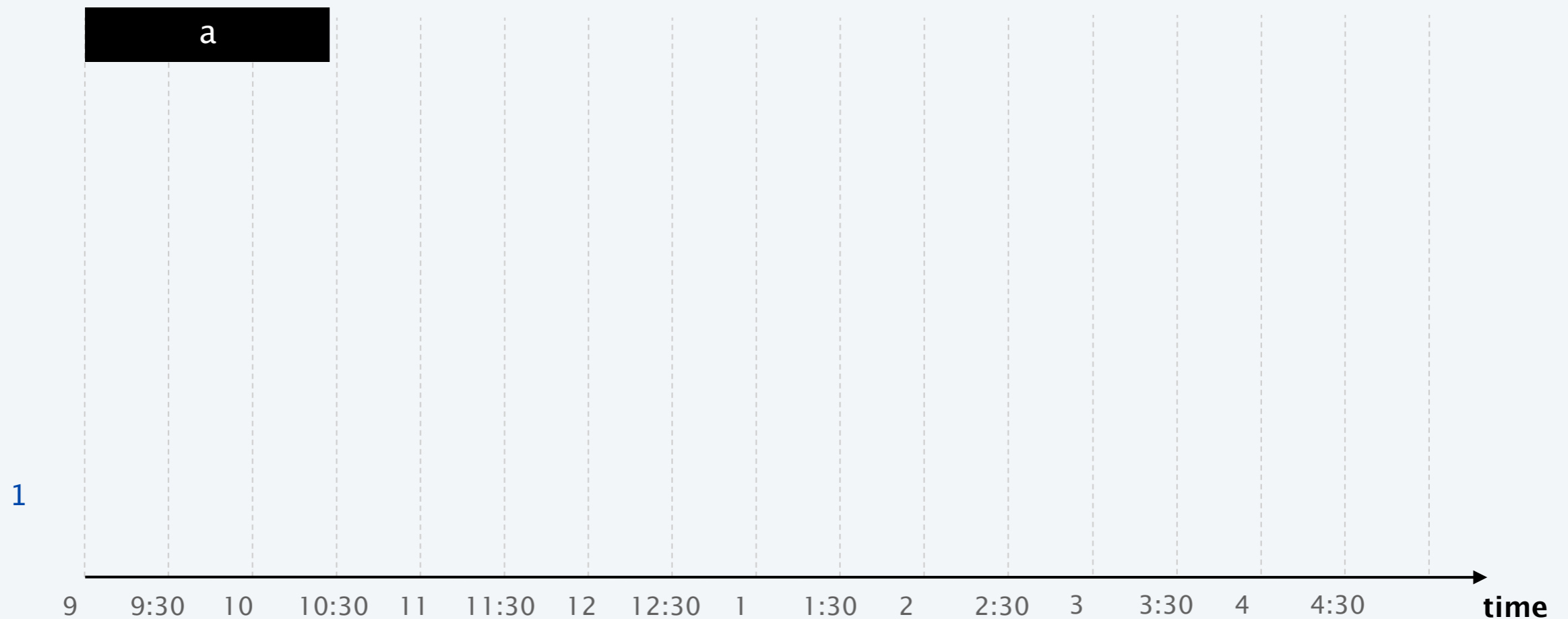
# Earliest-start-time-first algorithm demo

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Consider lectures in order of start time:

- Assign next lecture to any available classroom (if one exists).
- Otherwise, open up a new classroom.

**no available classroom: open up a new classroom and assign lecture to it**



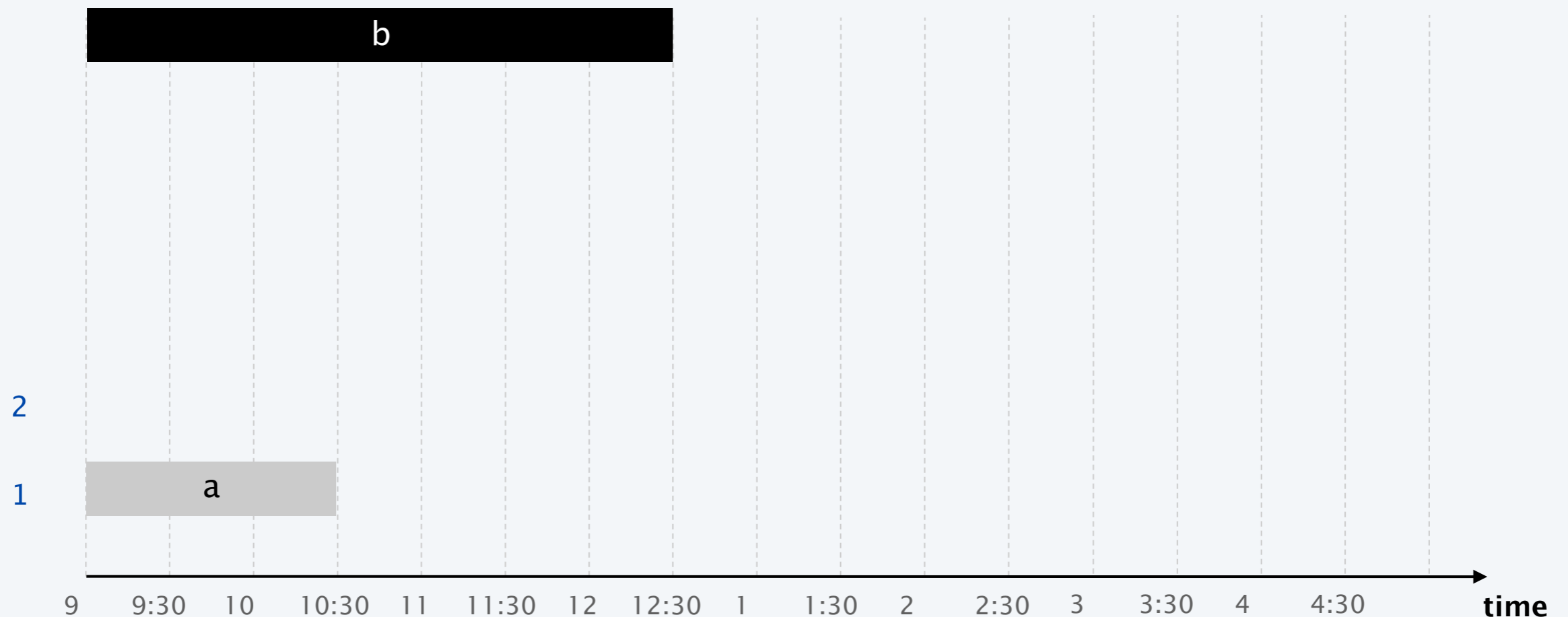
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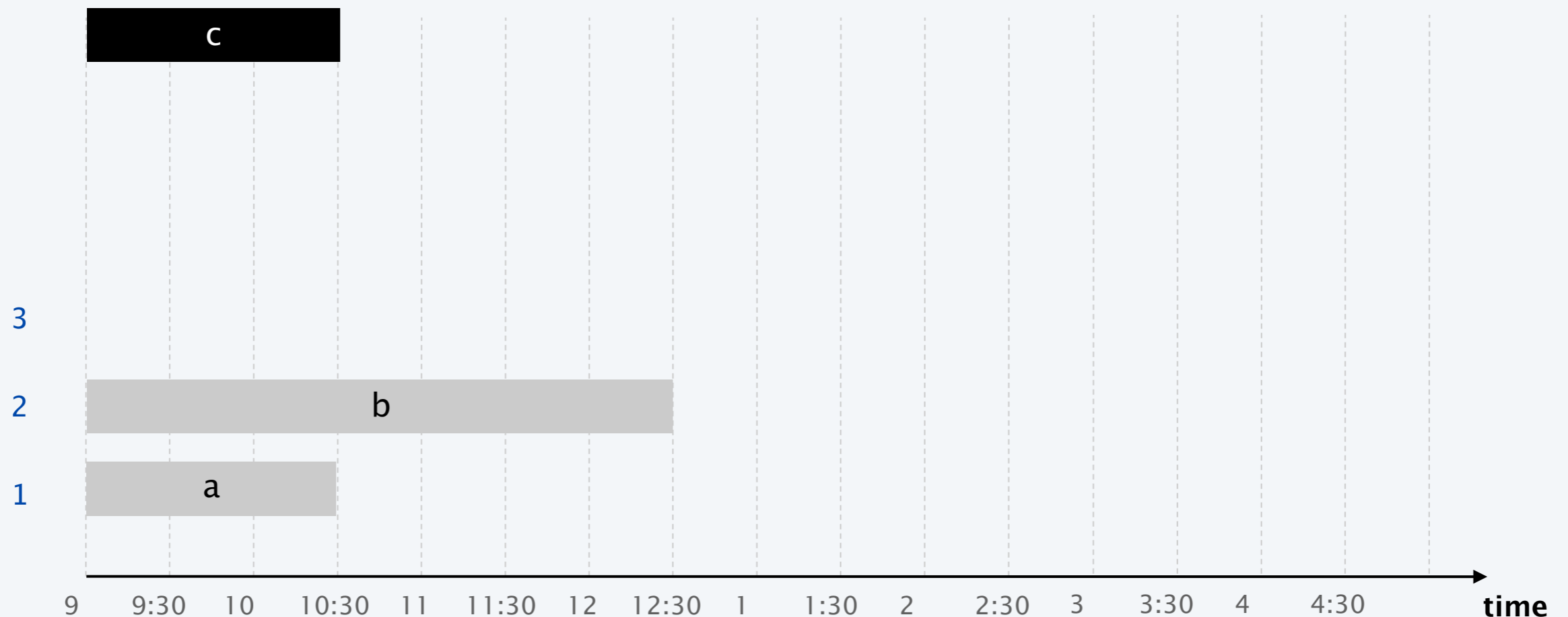
# Earliest-start-time-first algorithm demo

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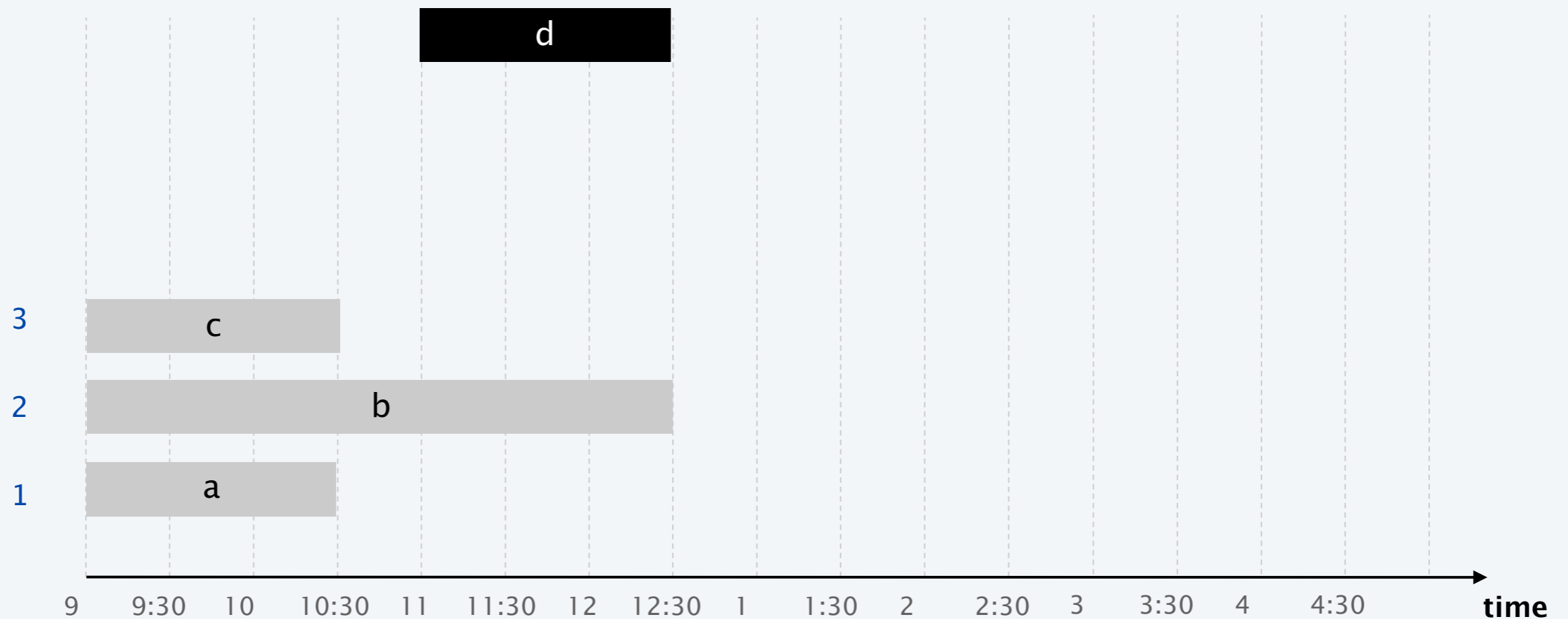
# Earliest-start-time-first algorithm demo

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Consider lectures in order of start time:

- Assign next lecture to any available classroom (if one exists).
- Otherwise, open up a new classroom.

**lecture d is compatible with classrooms 1 and 3**



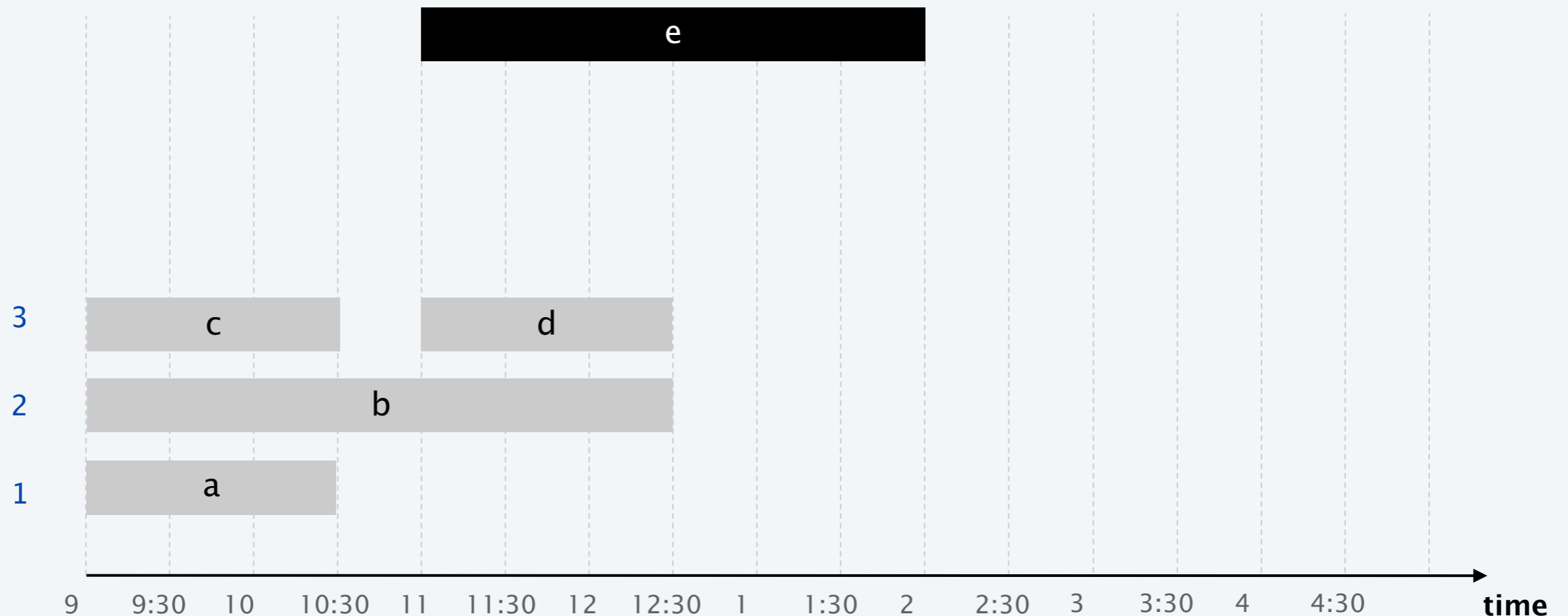
# Earliest-start-time-first algorithm demo

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Consider lectures in order of start time:

- Assign next lecture to any available classroom (if one exists).
- Otherwise, open up a new classroom.

**lecture e is compatible with classroom 1**



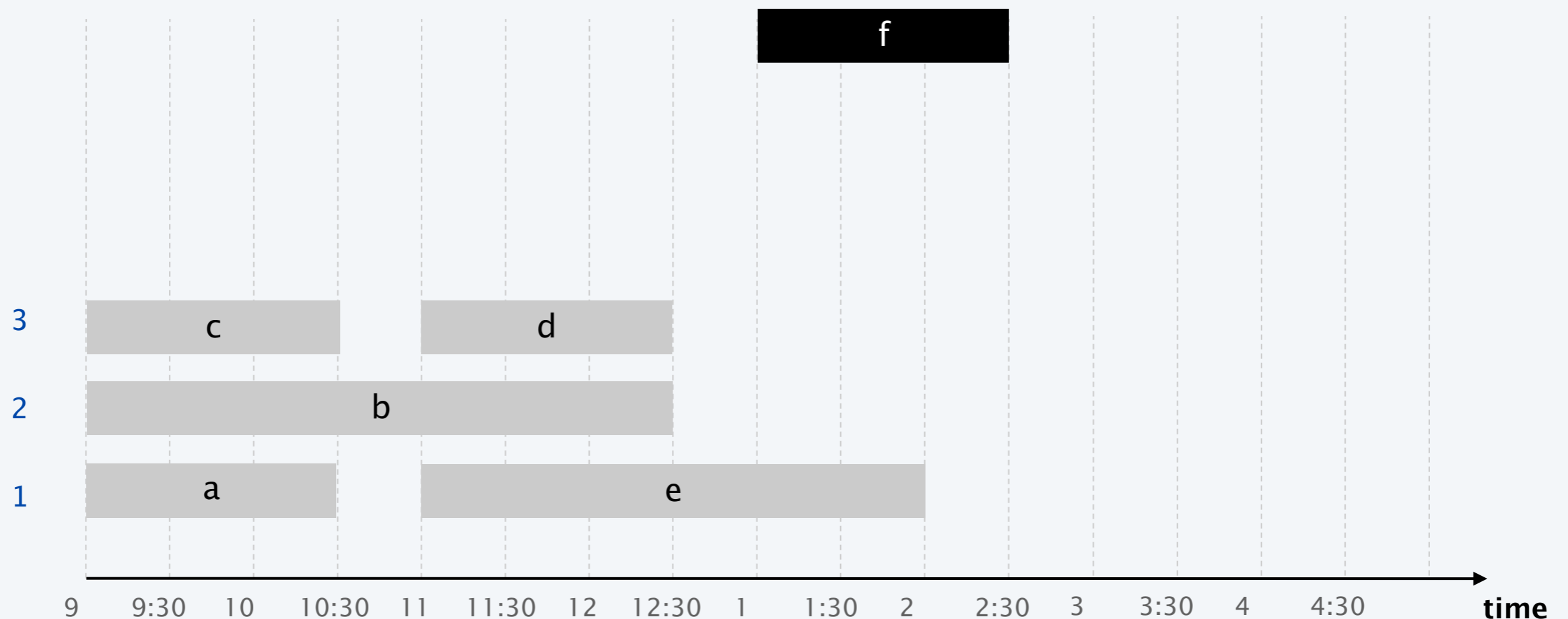
# Earliest-start-time-first algorithm demo

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Consider lectures in order of start time:

- Assign next lecture to any available classroom (if one exists).
- Otherwise, open up a new classroom.

**lecture f is compatible with classroom 2 and 3**





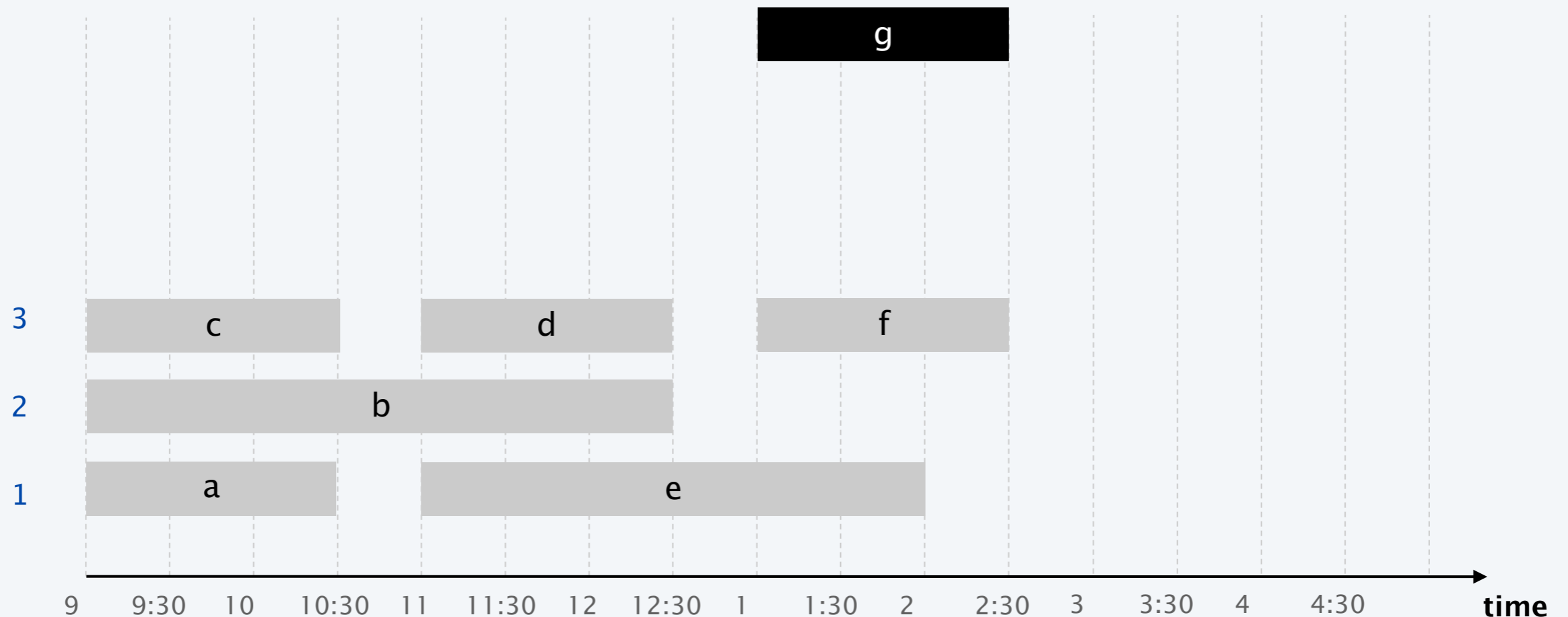
# Earliest-start-time-first algorithm demo

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Consider lectures in order of start time:

- Assign next lecture to any available classroom (if one exists).
- Otherwise, open up a new classroom.

lecture g is compatible with classroom 2



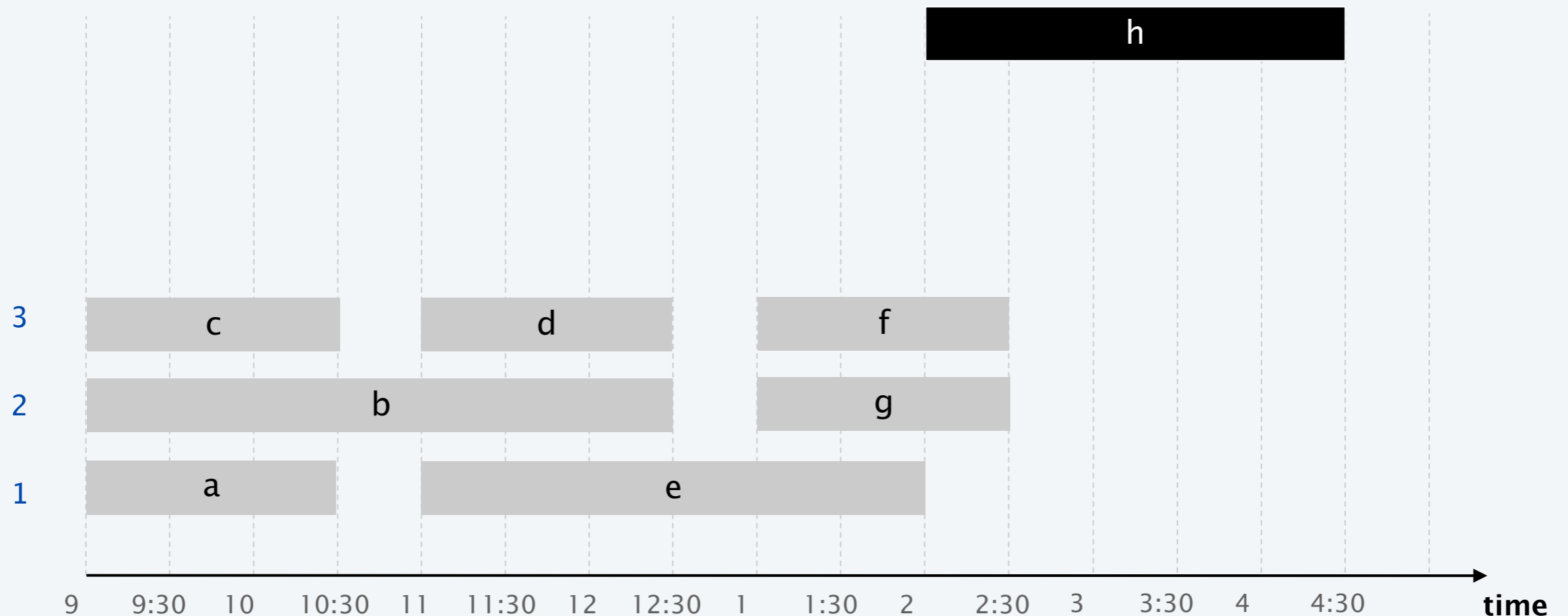
# Earliest-start-time-first algorithm demo

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Consider lectures in order of start time:

- Assign next lecture to any available classroom (if one exists).
- Otherwise, open up a new classroom.

**lecture h is compatible with classroom 3**



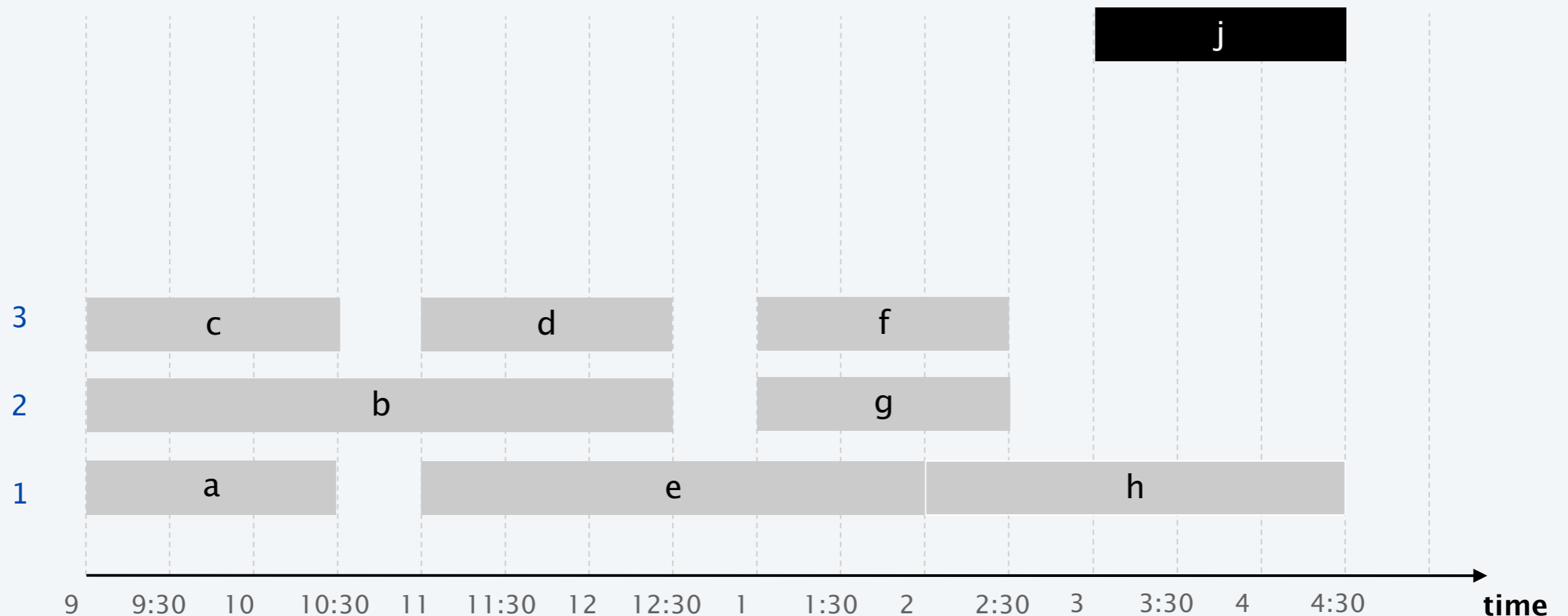
# Earliest-start-time-first algorithm demo

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Consider lectures in order of start time:

- Assign next lecture to any available classroom (if one exists).
- Otherwise, open up a new classroom.

lecture j is compatible with classrooms 2 and 3



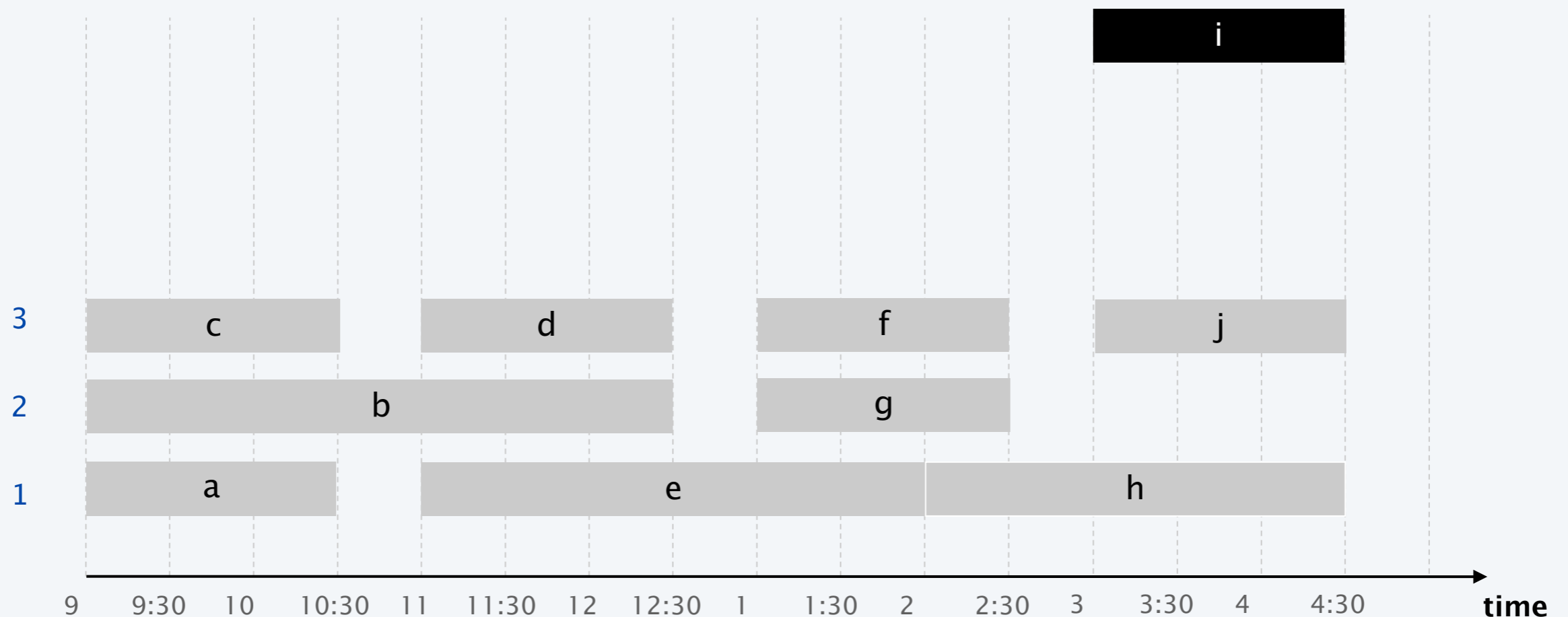
# Earliest-start-time-first algorithm demo

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Consider lectures in order of start time:

- Assign next lecture to any available classroom (if one exists).
- Otherwise, open up a new classroom.

lecture i is compatible with classroom 2



# Earliest-start-time-first algorithm demo

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Consider lectures in order of start time:

- Assign next lecture to any available classroom (if one exists).
- Otherwise, open up a new classroom.

done

