

(https://accounts.coursera.org/i/zendesk/courserahelp?return_to=https://learner.coursera.help/hc)

Facility Location and Primal-Dual Approximation Algorithms



Claire Mathieu

This module continues teaching algorithmic applications of linear programming duality by applying it

Problem definition



Slides

(</learn/approximation-algorithms-part-2/supplement/AWdUe/slides>)



Practice Quiz: Quiz

1 1 question

(</learn/approximation-algorithms-part-2/quiz/gt5wl/quiz-1>)



Problem definition 5 min

(</learn/approximation-algorithms-part-2/lecture/YT6h6/problem-definition>)

A linear programming relaxation...

Coursera (/)



Slides

(</learn/approximation-algorithms-part-2>)

2/supplement/ymgHF/slides)



Practice Quiz: Quiz

2 2 questions

(/learn/approximation-algorithms-part-2/quiz/3yYOW/quiz-2)



A linear programming relaxation 4 min

(/learn/approximation-algorithms-part-2/lecture/NrPDr/a-linear-programming-relaxation)

... and its dual



Slides

(/learn/approximation-algorithms-part-2/supplement/zYysX/slides)



Practice Quiz: Quiz

3 2 questions

(/learn/approximation-algorithms-part-2/quiz/gOenn/quiz-3)



...and its dual 8 min

(/learn/approximation-algorithms-part-2/lecture/8Hcnc/and-its-dual)

A primal-dual algorithm



Slides

(/learn/approximation-algorithms-part-2/supplement/tLnVI/slides)



Practice Quiz: Quiz

4 2 questions

(/learn/approximation-algorithms-part-2/quiz/vytJr/quiz-4)

A primal-dual





algorithm 8 min

(/learn/approximation-algorithms-part-2/lecture/mUVmZ/a-primal-dual-algorithm)

Analyzing the service cost



Slides

(/learn/approximation-algorithms-part-2/supplement/AReAA/slides)



Practice Quiz: Quiz

5 1 question

(/learn/approximation-algorithms-part-2/quiz/XOqsT/quiz-5)



Analyzing the service
cost 7 min

(/learn/approximation-algorithms-part-2/lecture/pMUbW/analyzing-the-service-cost)

Analyzing the facility opening cost



Slides

(/learn/approximation-algorithms-part-2/supplement/KJdgG/slides)



Practice Quiz: Quiz

6 1 question

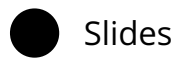
(/learn/approximation-algorithms-part-2/quiz/IHnqS/quiz-6)



Analyzing the facility
opening cost 8 min

(/learn/approximation-algorithms-part-2/lecture/KPjEm/analyzing-the-facility-opening-cost)

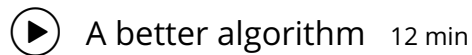
A better primal-dual algorithm



(/learn/approximation-algorithms-part-2/supplement/GqNM8/slides)

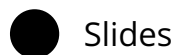


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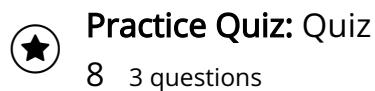


(/learn/approximation-algorithms-part-2/lecture/yAvO4/a-better-algorithm)

Analysis



(/learn/approximation-algorithms-part-2/supplement/jYxJQ/slides)

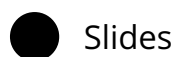


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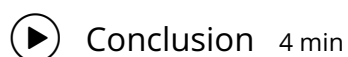


(/learn/approximation-algorithms-part-2/lecture/IDPmi/analysis)

Conclusion



(/learn/approximation-algorithms-part-2/supplement/p9MjQ/slides)



(/learn/approximation-algorithms-part-

2/lecture/mOk6X/conclusion)

Exercises

● Slides-all

(/learn/approximation-algorithms-part-2/supplement/ZXk5J/slides-all)

✓ **Assignment:** Assignment
3 30 min

(/learn/approximation-algorithms-part-2/peer/VuBro/assignment-3)