

Discrete Optimization

Assignments: Introduction

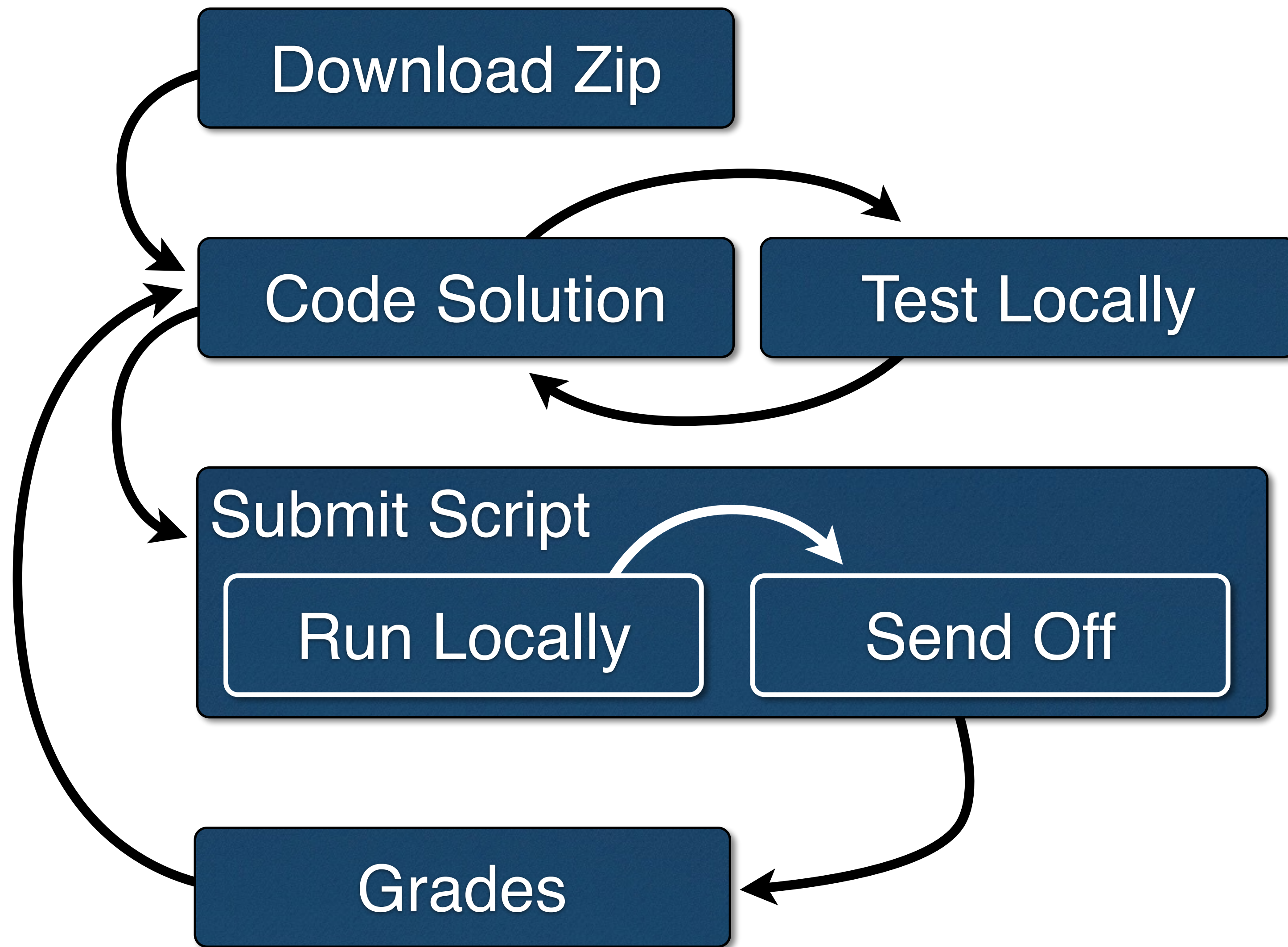
Goal of the Lecture

- ▶ Assessment Architecture
- ▶ A Simple Example
 - Not even optimization
 - Just an integer


The Beauty of NP-Hard Problems

- ▶ Work forever to find a good solution.
- ▶ Check that its a solution in seconds.

Assignment Work Flow



The First Assignment – Any Integer



Admin

Course Home

Course Content

Assignments

Welcome

	Weight	Passed	Grade
✓ Programming Assignment: Any Integer 3h	1%	✓	100%

Knapsack

⌌ Programming Assignment: Knapsack 3h	19%	--	--
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The First Assignment – Any Integer

Programming Assignment: Any Integer

✓ Passed · 10/10 points

Instructions My submission

Discussions

Download the assignment zip file and review handout.pdf for further instructions.

anyint.zip

How to submit

Copy the token below and run the submission script included in the assignment download. When prompted, use your email address **carleton.coffrin@unimelb.edu.au**.

0VBAS45cGzWM8rem

[Generate new token](#)

Your submission token is unique to you and should not be shared with anyone. You may submit as many times as you like.

The First Assignment – Any Integer

- ▶ **handout.pdf**
 - detailed instructions about each assignment
- ▶ **solver.py**
 - your solver implementation goes here
 - you can call external binaries
 - always includes a trivial solution to the assignment
- ▶ **submit.py**
 - handles running your solver on a few inputs and submits the results for grading
- ▶ **data**
 - input data for testing

Any Integer – handout.pdf

Discrete Optimization Assignment:

Any Integer

1 Problem Statement

This assignment is designed to familiarize you with the programming assignment infrastructure. All of the assignments in this class involve writing an optimization algorithm (i.e. a program) and submitting your results with the provided submission script. In this assignment, you will write a very simple program to submit a *positive integer* of your choice to the course. Your grade on this assignment will be determined by the size of the integer you submit to the grader.

2 Assignment

Write an algorithm to submit a positive integer to the course. Try submitting different integers in the range from -10 to 10 to see how the grader feedback changes based on the number you submit.

3 Data Format Specification

The output is one line containing your integer, i .

[Output Format]

i

Examples

[Output Example]

-3

Any Integer – solver.py

```
def solve_it(input_data):  
    # return a positive integer  
    return '0'  
  
if __name__ == '__main__':  
    print('This script submits the integer: %s\n' % solve_it(''))
```

```
def solve_it(input_data):  
    # return a positive integer  
    return '7'  
  
if __name__ == '__main__':  
    print('This script submits the integer: %s\n' % solve_it(''))
```

```
> python solver.py  
This script submits the integer: 7  
  
>
```

Any Integer – Using submit.py

```
> python solver.py
'This script submits the integer: 7

>
```

```
> python submit.py
==
== Any Integer Solution Submission
==
Hello! These are the assignment parts that you can submit:
1) Send an Integer
0) All
Please enter which part(s) you want to submit (0-1):
```

```
Please enter which part(s) you want to submit (0-1): 1
Submitting:
7

== Computations Complete ...
User Name (e-mail address):
```

Any Integer – Credentials

Programming Assignment: Any Integer

✓ Passed · 10/10 points

Instructions

My submission

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Any Integer – Using submit.py

```
Please enter which part(s) you want to submit (0-1): 1
Submitting:
7
```

```
== Computations Complete ...
User Name (e-mail address):
```

```
== Computations Complete ...
User Name (e-mail address): carleton.coffrin@unimelb.edu.au
Submission Token (from the assignment page): 0VBAS45cGzWM8rem

== Connecting to Coursera ...
Submitting 1 of 1 parts

== Coursera Responce ...
Your submission has been accepted and will be graded shortly.

>
```

Any Integer – Feedback

Programming Assignment: Any Integer

✓ Passed · 10/10 points

Instructions

My submission

Discussions

Your Submissions

Date	Score	Passed?
<div>▼ 27 August 2016 at 3:08 PM</div> <div><div>Send an Integer</div><div>Download submission stdout stderr</div></div> <div>Your submission output is correct, but the value of 7 is insufficient for full credit. For a higher grade, you will need t</div>	7/10	Yes
<div>▼ 27 August 2016 at 3:05 PM</div> <div><div>Send an Integer</div><div>Download submission stdout stderr</div></div>	3/10	No
<div>➤ 11 August 2016 at 12:07 AM</div>	3/10	No
<div>➤ 10 August 2016 at 11:30 PM</div>	10/10	Yes

Final Remark

- ▶ Everything Provided in Source Code
 - Hack it!
- ▶ Contribute Your Hacks
 - github.com/discreteoptimization

Have Fun!

- ▶ This is the easy part :-)