

Introduction to Computing

CS 101 - Spring 2018
Professors Briggs and Grant

programming

building computers

networking

designing logic chips

games

algorithms

artificial intelligence

What is Computer Science?

human-computer interaction

making art

operating systems

bioinformatics

data bases

robotics

What is Computer Science?

Creating things AND

Solving problems AND

The study of complexity:

identify problems

figure out if processes to solve them exist

design processes that solve them

evaluate the solutions

Algorithm

A set of steps or rules describing a process to achieve some goal

BETTE'S BUTTERMILK PANCAKES

INGREDIENTS:

- 2 cups all-purpose flour
- 2 tablespoons sugar
- 2 teaspoons baking powder
- 1 teaspoon baking soda
- 1/2 teaspoon salt
- 2 eggs
- 2 cups buttermilk
- 1/2 cup milk
- 1/4 cup unsalted butter, melted
- Choice of berries, sliced bananas, raisins or chopped toasted nuts (optional)
- Oil for griddle

An example algorithm: Recipe for making pancakes

INSTRUCTIONS: Combine the flour, sugar, baking powder, baking soda and salt in a large bowl.

Lightly beat the eggs with the buttermilk, milk and melted butter.

Just before you are ready to make the pancakes, add the liquid ingredients to the dry ingredients all at once, stirring just long enough to blend. The batter should be slightly lumpy.

If you want to add fruit or nuts, stir them in now, or you may sprinkle them on the pancakes while they are on the griddle.

Heat a lightly oiled griddle or heavy skillet over medium-high heat (375 degrees on an electric griddle).

Pour 1/4 cup batter per pancake onto the griddle or skillet, spacing the pancakes apart so they do not run together. When bubbles appear on the surface of the pancakes and the undersides are lightly browned, turn and cook for about 2 minutes longer, until lightly browned on the bottom.

Serve immediately on warmed plates with the topping of your choice. Serves 4 (yields about 24 four-inch pancakes.)



Walk 1.4 miles, 29 min

Use caution - may involve errors or sections not suited for walking

○ 276 Bicentennial Way

Middlebury, VT 05753

↑ 1. Head west on Bicentennial Way toward College St

0.4 mi

↶ 2. Turn left onto College St

0.8 mi

📍 3. At the traffic circle, take the 1st exit onto Main St

128 ft

↶ 4. Turn left onto Park St

430 ft

5. Take the pedestrian overpass

0.1 mi

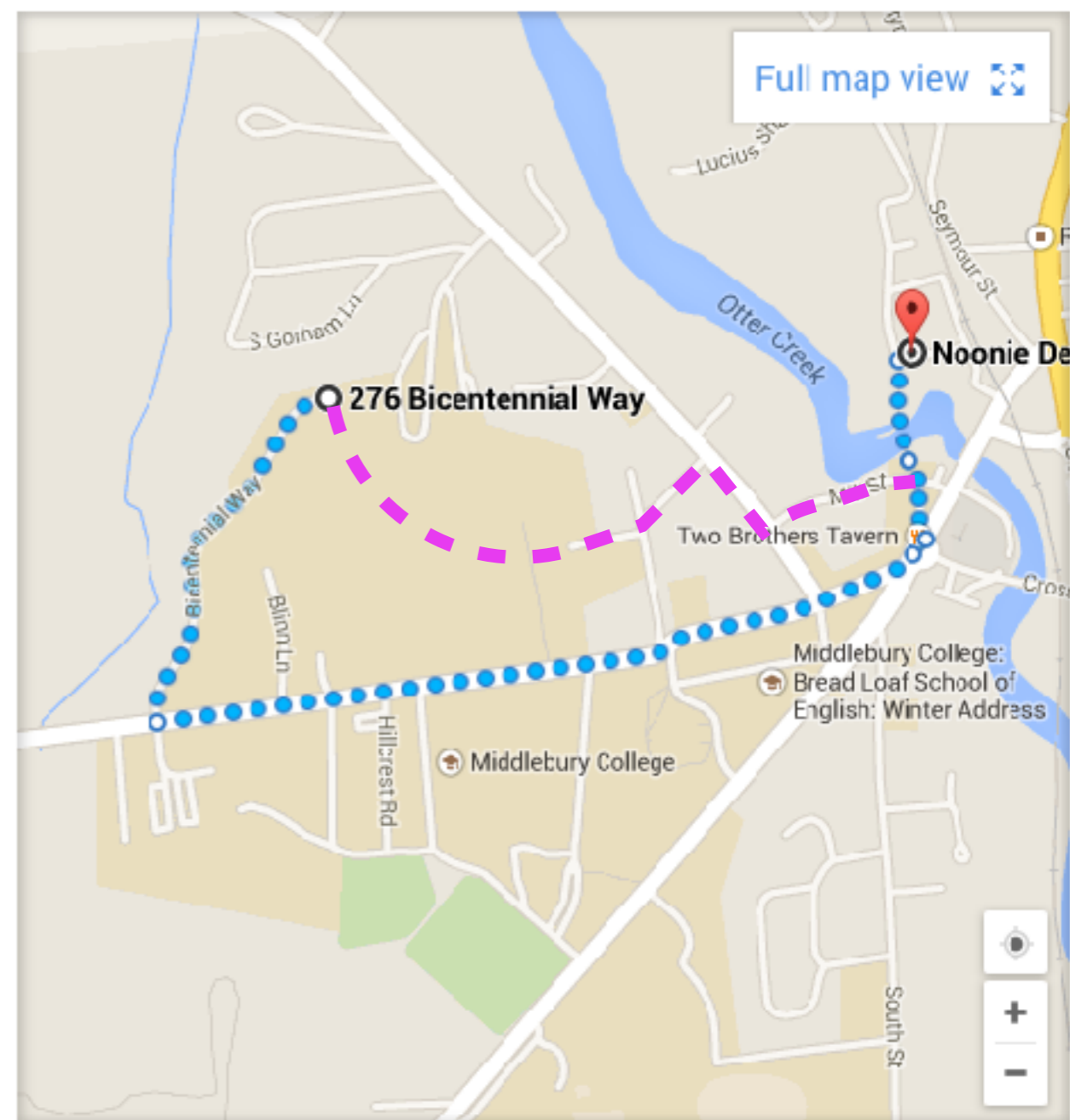
↷ 6. Turn right onto Maple St

📍 Destination will be on the left

82 ft

📍 Noonie Deli

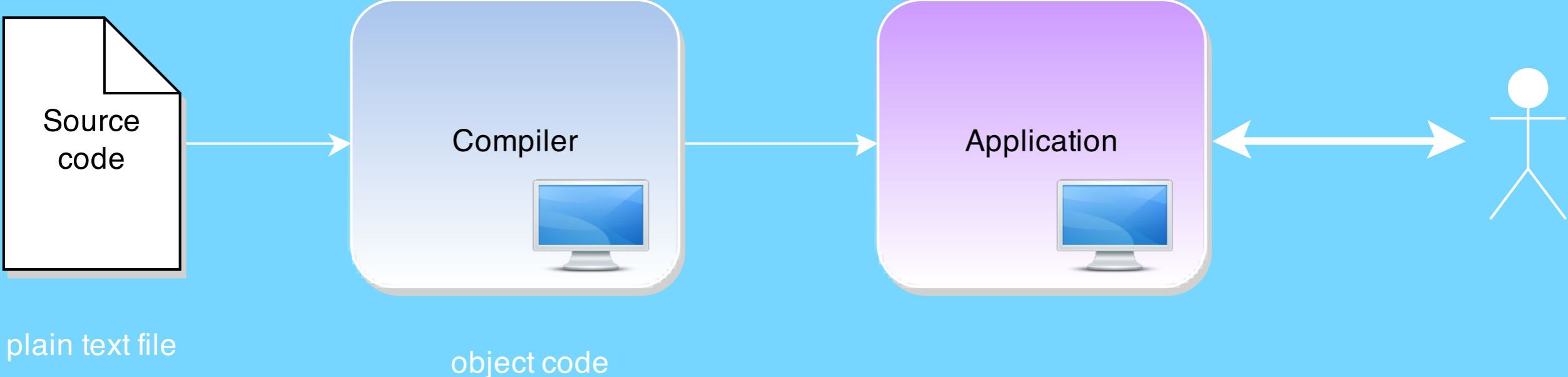
137 Maple St, Middlebury, VT 05753



Algorithm

A set of **unambiguous** steps or rules describing a process to achieve some goal

Compiled code [C, C++, Java (sort of), etc.]



Interpreted code [Python, Javascript, Ruby, PHP, etc.]



Python

Modern, general-purpose, high-level
programming language
Free, “industrial-strength”

```
a, b = 0, 1
while b < 1000:
    print(b, end=' ')
    a, b = b, a+b
```

1 1 2 3 5 8 13 21 34 55 89 144 233 377 610 987



Homework 1

- Download Thonny application or use the 505 lab computers (see help times below)
- Experiment with Python expressions
- Assignment description on [go/cs101](https://go.cs101)
- Submit via online script
- Due Wednesday 2/21 @ 11:59pm
- For help go to MBH 505 Mon 1:30-5; Tue 1:30-5; Wed 12-2:30; Thur 12-1:30

