Welcome to CS106A!

- Three handouts outside
  - (Also available online!)
- Today:
  - Course Overview
  - Why Learn to Program?
  - Meet Karel the Robot

Who's Here Today?

- Aeronautical and Astronautical Engineering
- Anthropology
- Applied Physics
- Art History
- Art Practice
- Bioengineering
- Biology
- Biomedical Informatics
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- Political Science
- Product Design
- Psychology
- Public Policy
- Science, Technology, and Society
- Sociology
- Spanish
- Statistics
- **Undeclared!**

Course Staff

Instructor: Keith Schwarz
(htiek@cs.stanford.edu)

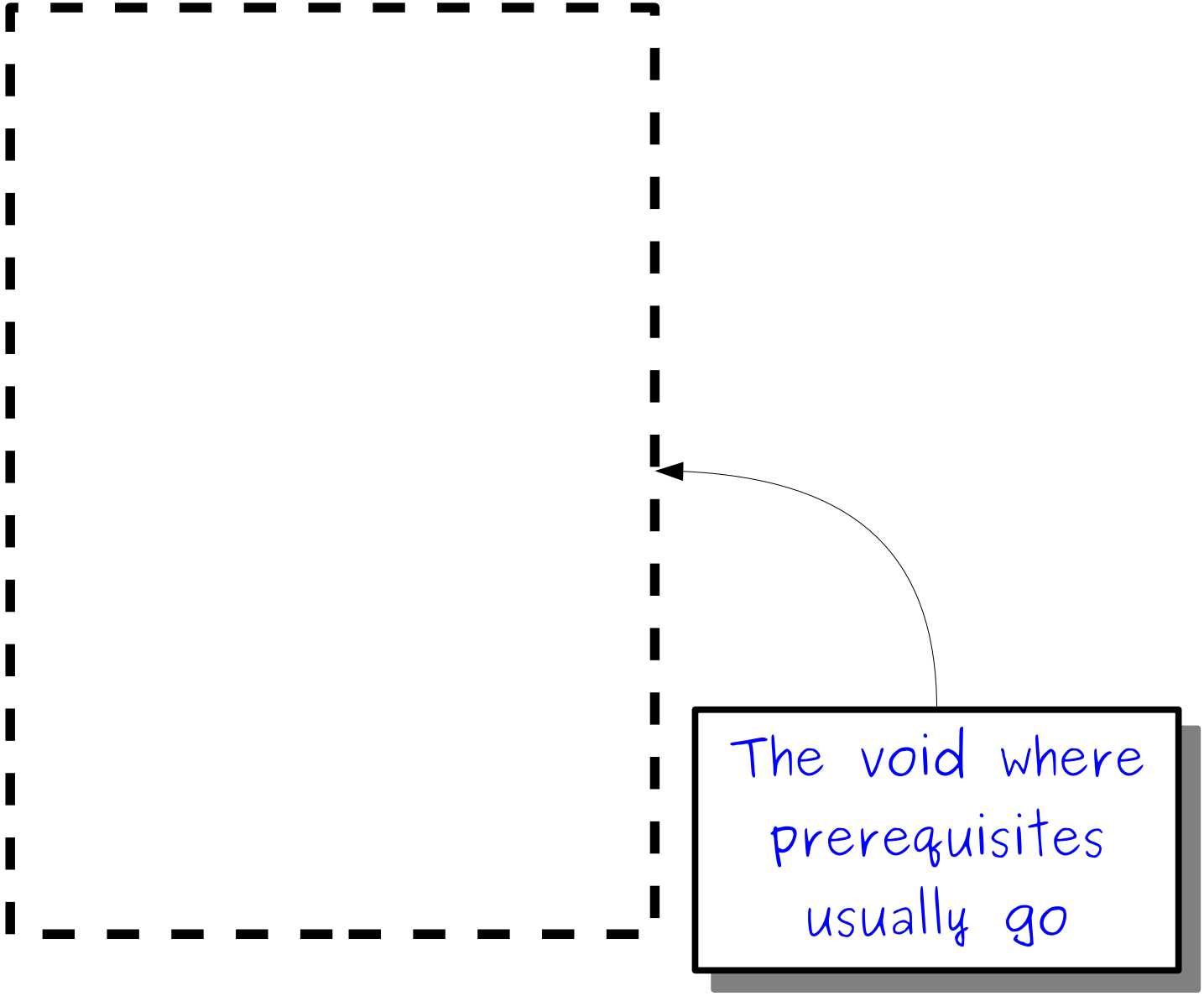
Head TA: Alisha Adam
(aadam@stanford.edu)

The CS106A Section Leaders
The CS106A Course Helpers

Course Website

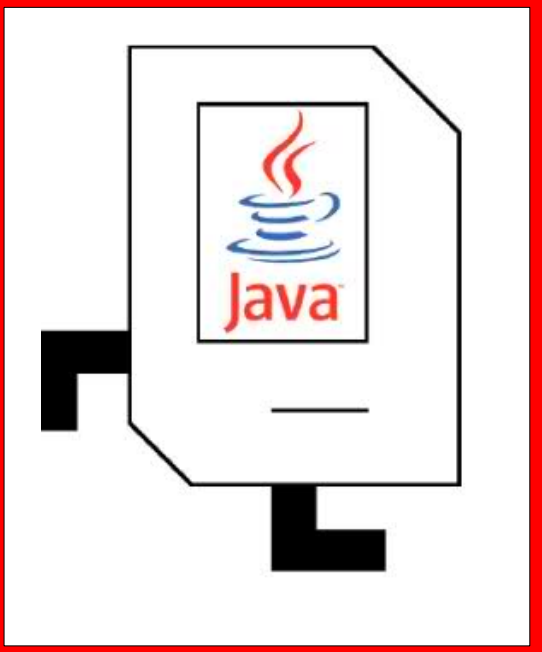
http://cs106a.stanford.edu

Prerequisites



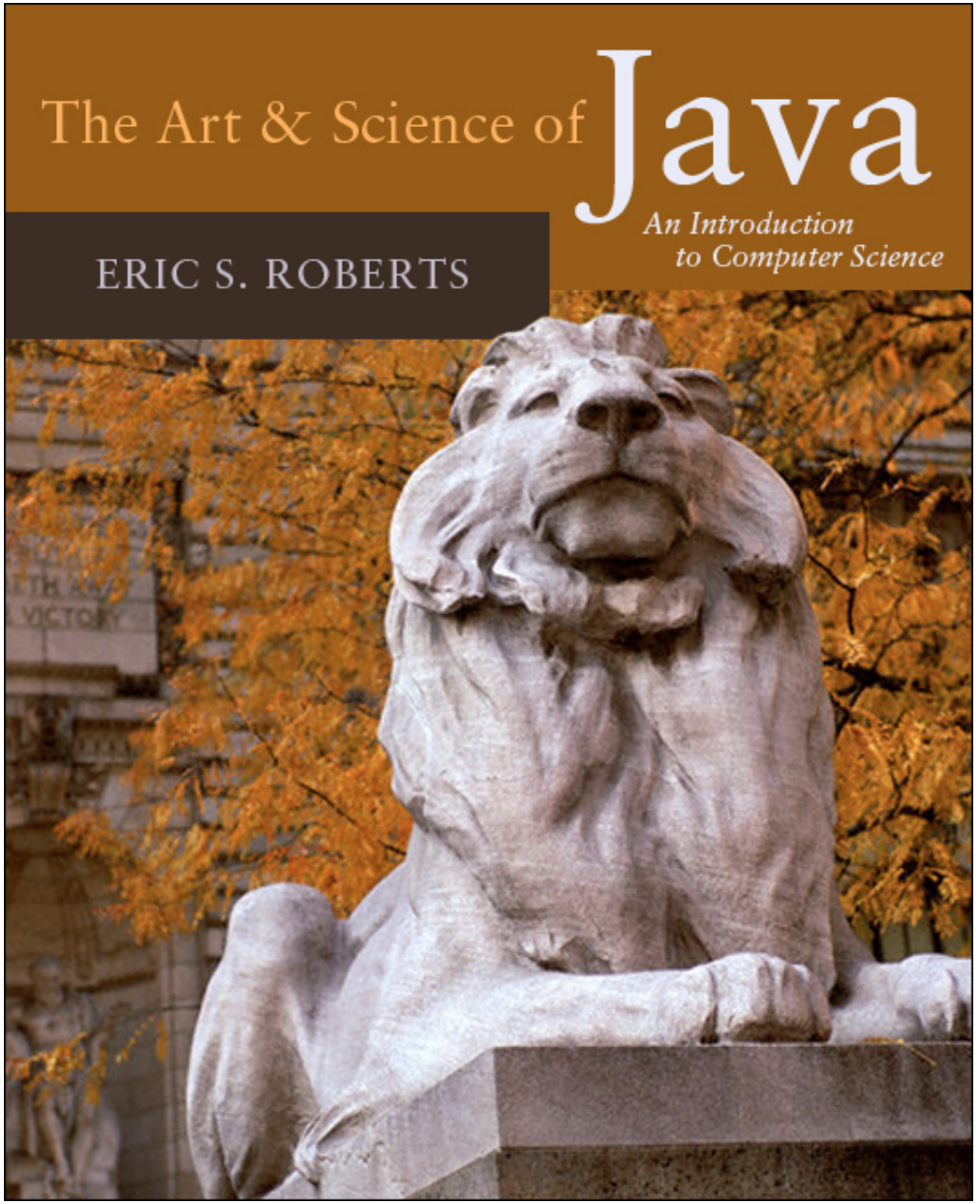
Required Reading

KAREL THE ROBOT



LEARNS JAVA

Required Reading

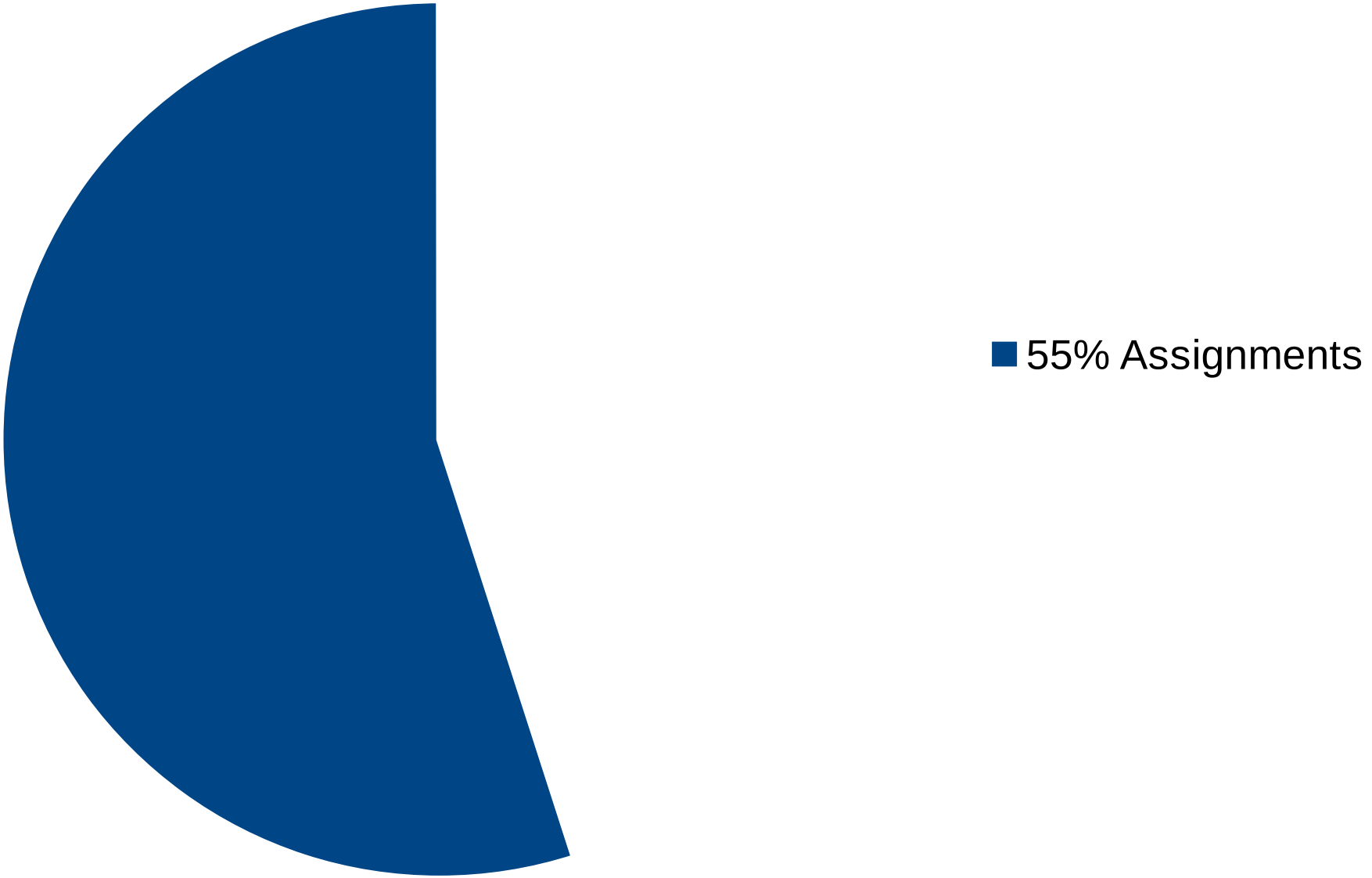


Handouts

- In addition to the other readings, we'll distribute handouts from time to time.
- ***There are over 650 people in this course!***
  - We have handouts printed for today.
  - To avoid deforesting the planet, we'll send out a survey to gauge how many handouts to print.

Grading Policies

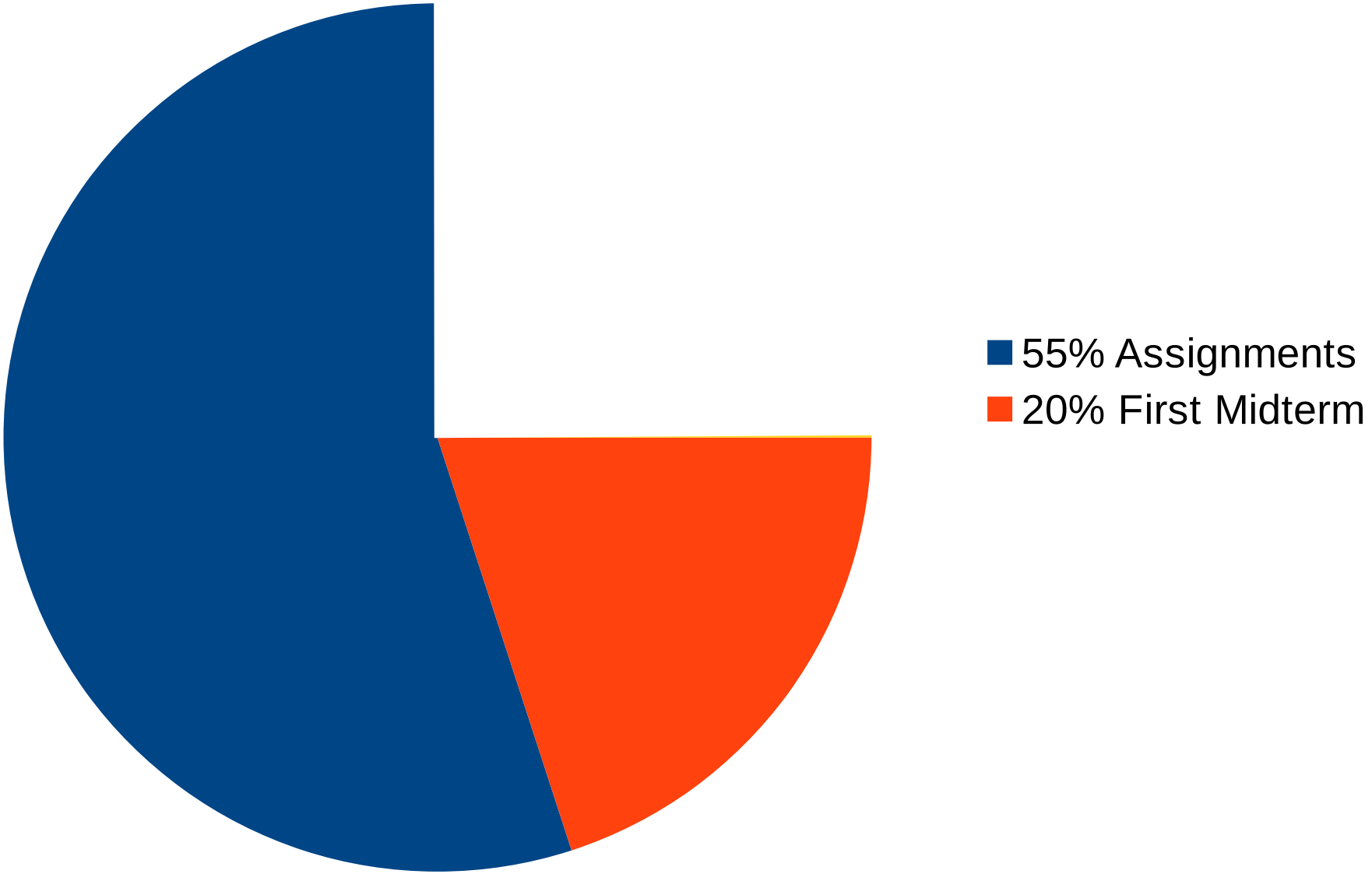
Grading Policies



Grading Policies

Eight Programming Assignments

Grading Policies

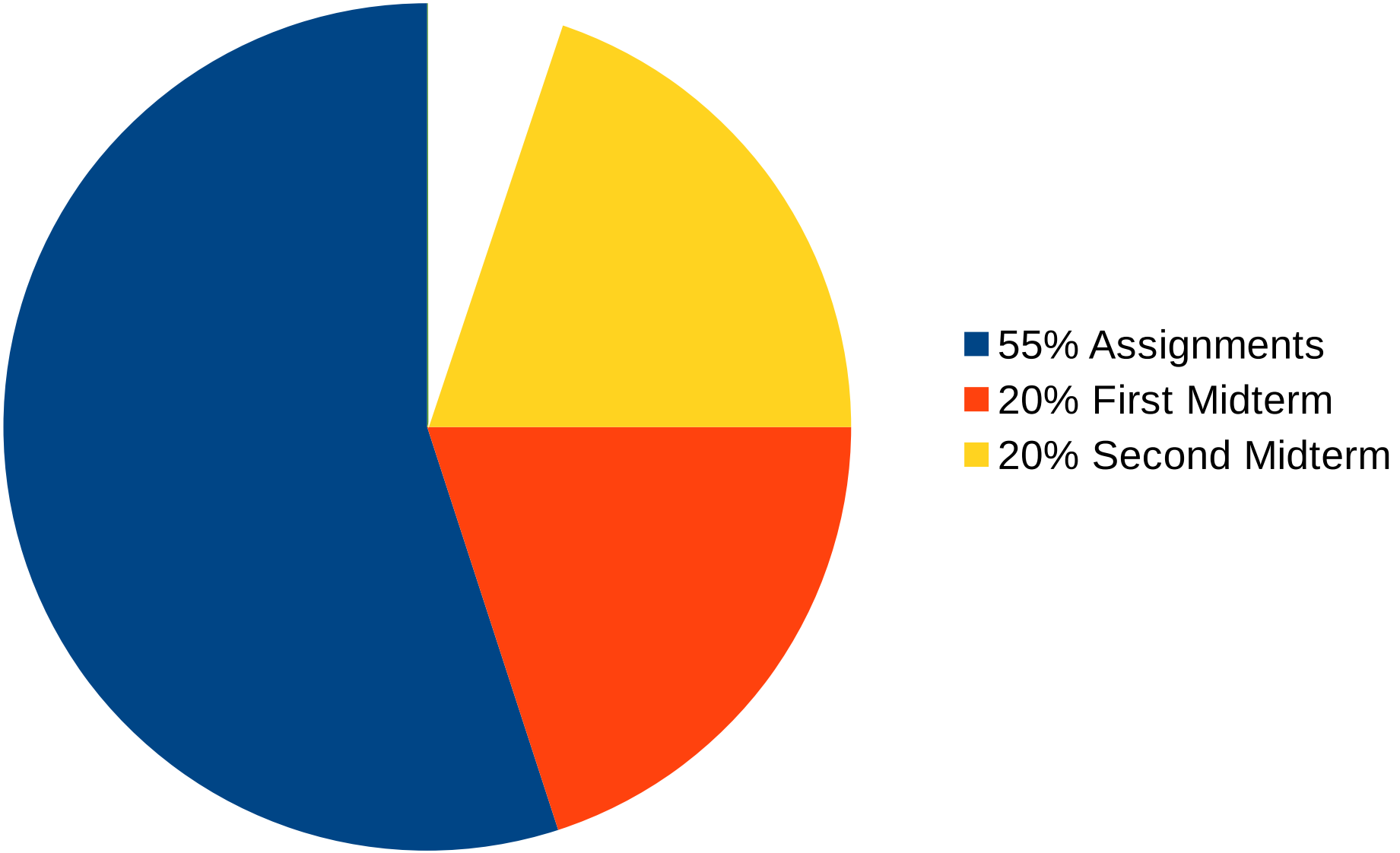


Grading Policies

First Midterm Exam

Tuesday, February 10
7PM – 10PM

Grading Policies

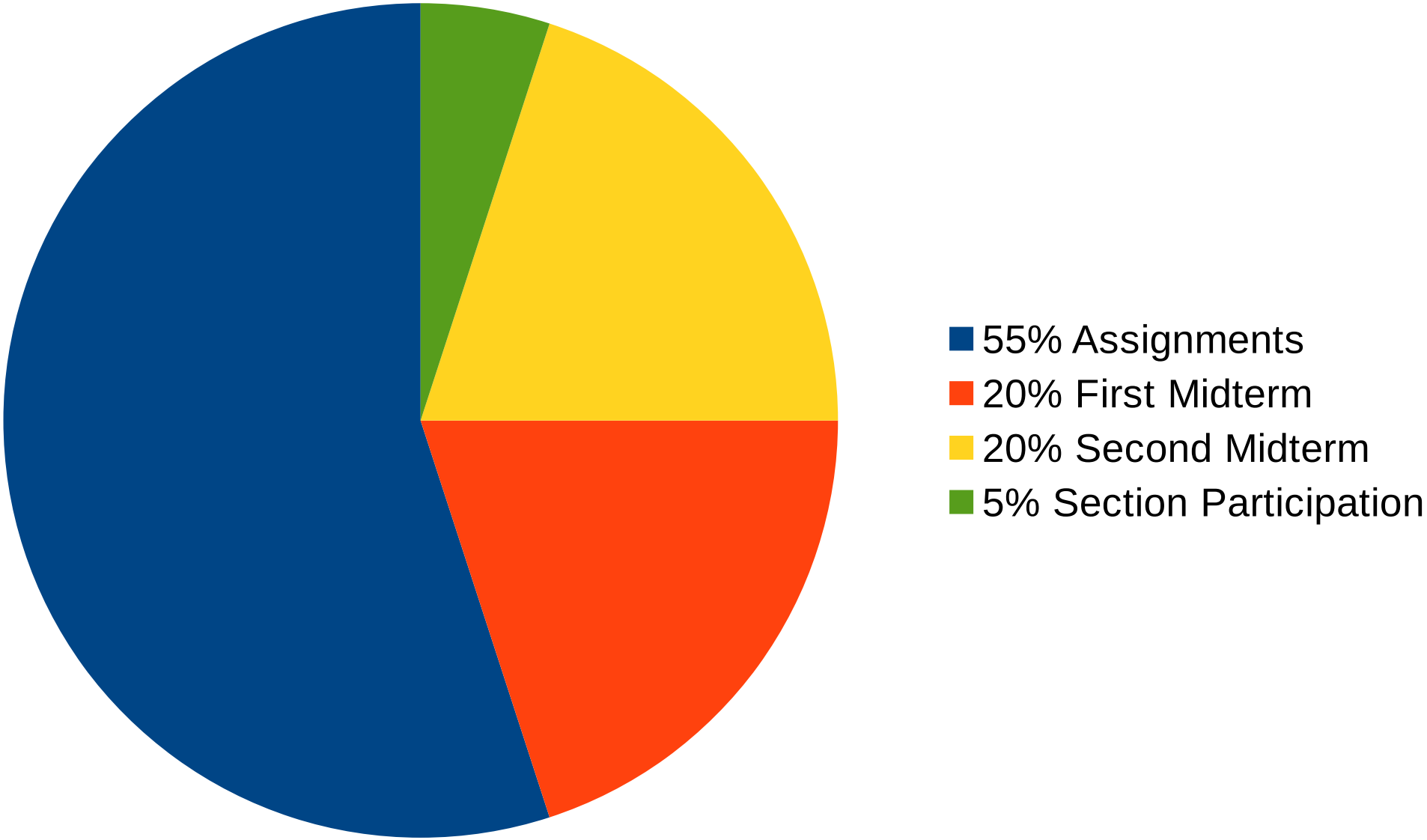


Grading Policies

Second Midterm Exam

Tuesday, March 3
7PM – 10PM

Grading Policies



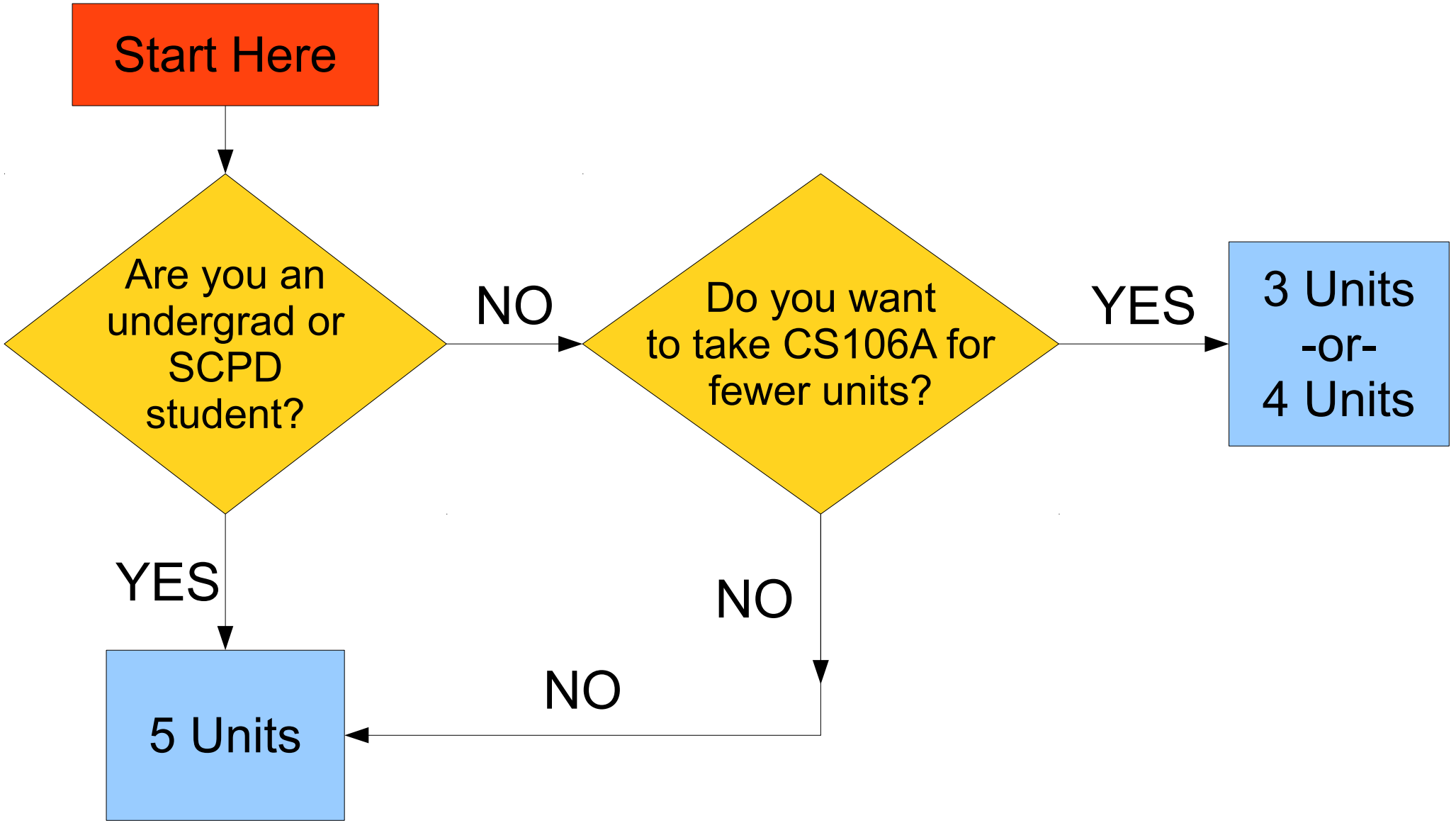
Discussion Sections

- Each week, you'll attend a 50-minute discussion section to review the course material and work through some extra practice problems.
- Sign up between Thursday, January 8 at 5:00PM and Sunday, January 11 at 5:00PM at

http://cs198.stanford.edu/section

- Don't worry about signing up for a section on Axess; everything is handled through the above link.

The CS106A Units Flowchart



Getting Help

- LaIR Hours!
  - Sunday – Thursday, 6PM – Midnight
  - Starts next week.
- Alisha's Office Hours in Gates 160
  - TBA
- Keith's Office Hours in Gates 178
  - TBA

Why Learn to Program Computers?

Computer science is no more about computers than astronomy is about telescopes, biology is about microscopes or chemistry is about beakers and test tubes. Science is not about tools, it is about how we use them and what we find out when we do.

- Michael Fellows and Ian Parberry

Computer science is no more about computers than astronomy is about telescopes, biology is about microscopes or chemistry is about beakers and test tubes.

Science is not about tools, it is about how we use them and what we find out when we do.

- Michael Fellows and Ian Parberry

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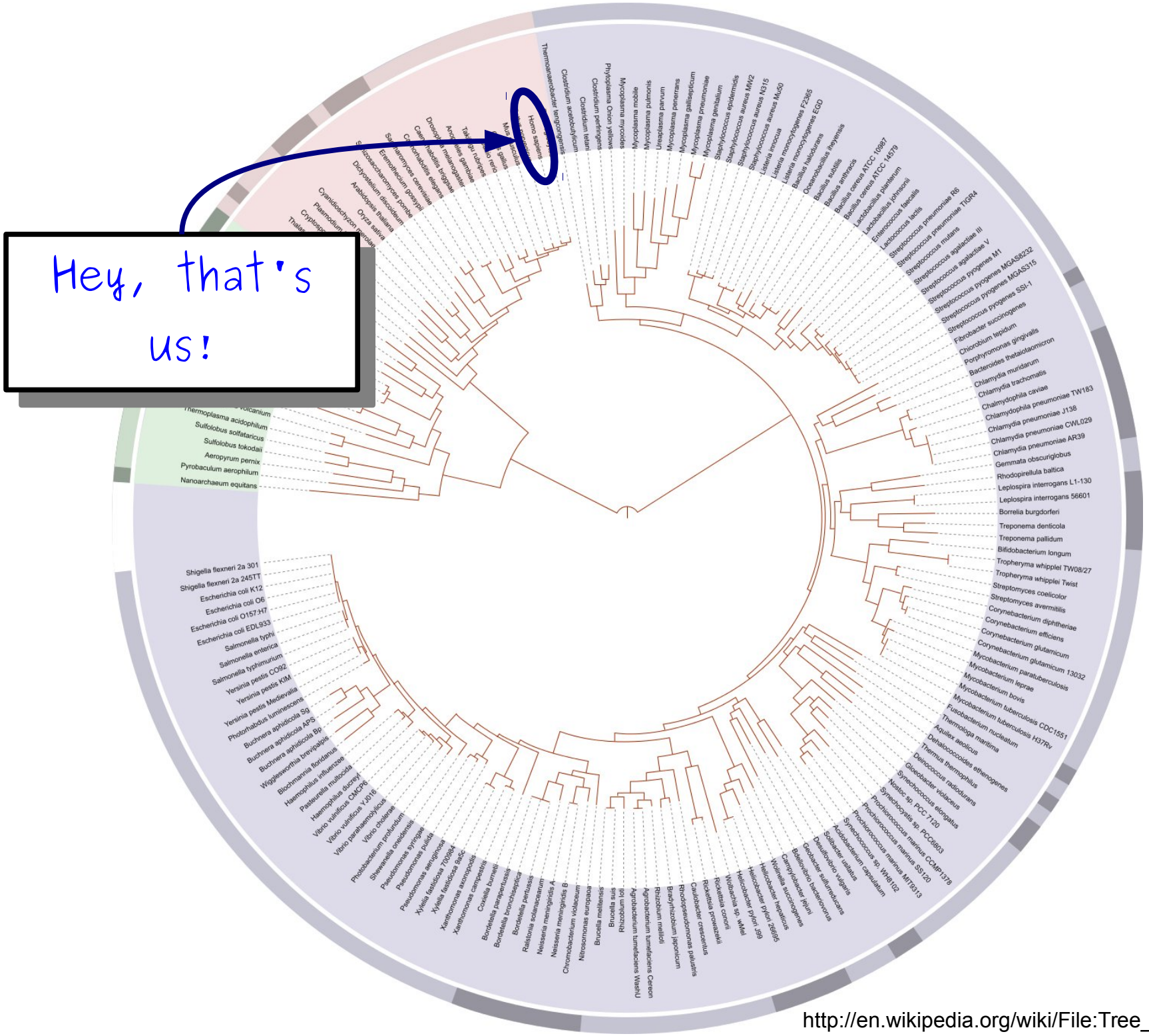
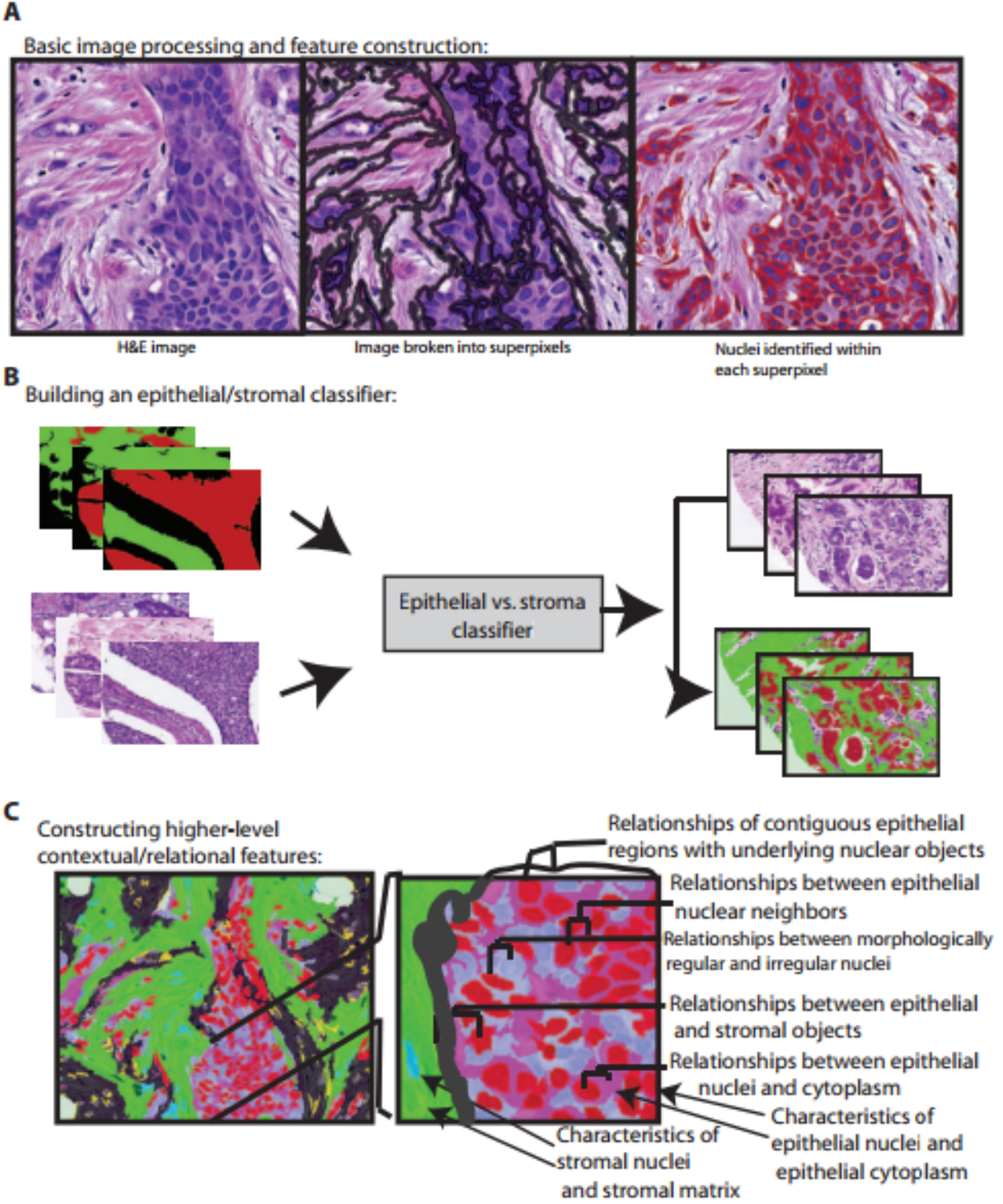
Source: http://www.npr.org/blogs/alltechconsidered/2012/12/24/167961947/kenyan-women-create-their-own-geek-cuture

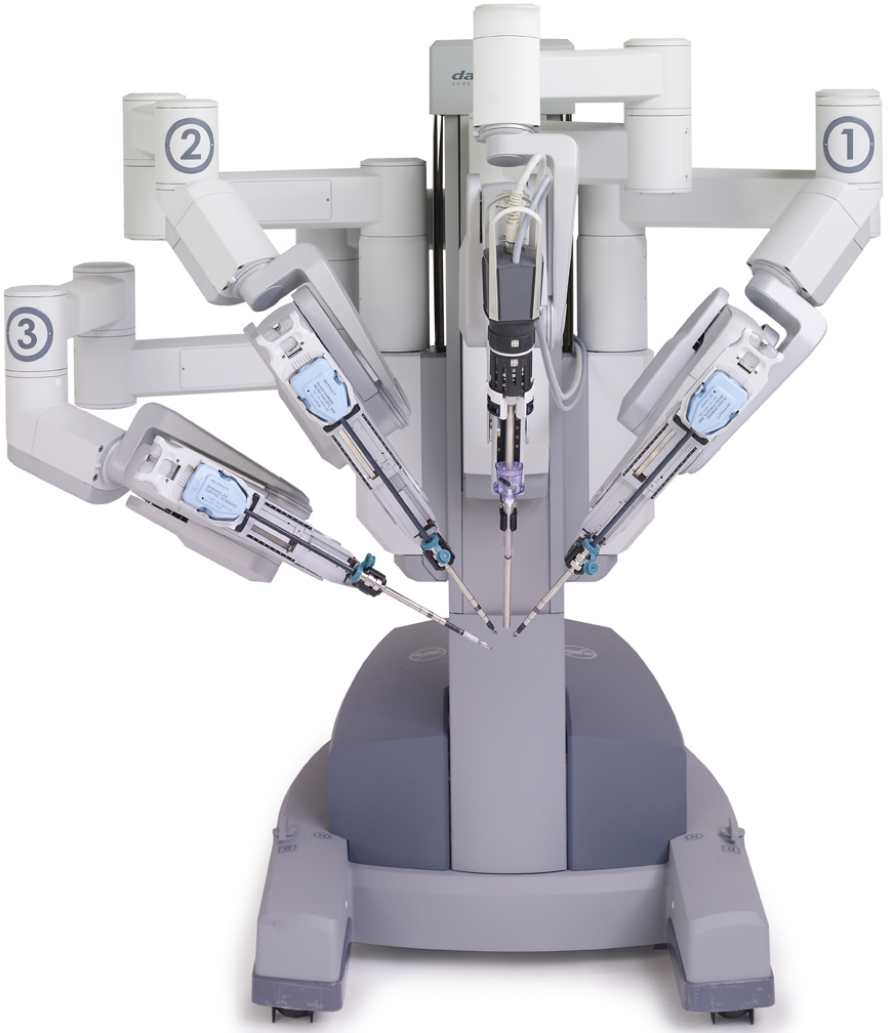
Source: http://alumni.stanford.edu/get/page/magazine/article/?article_id=55993



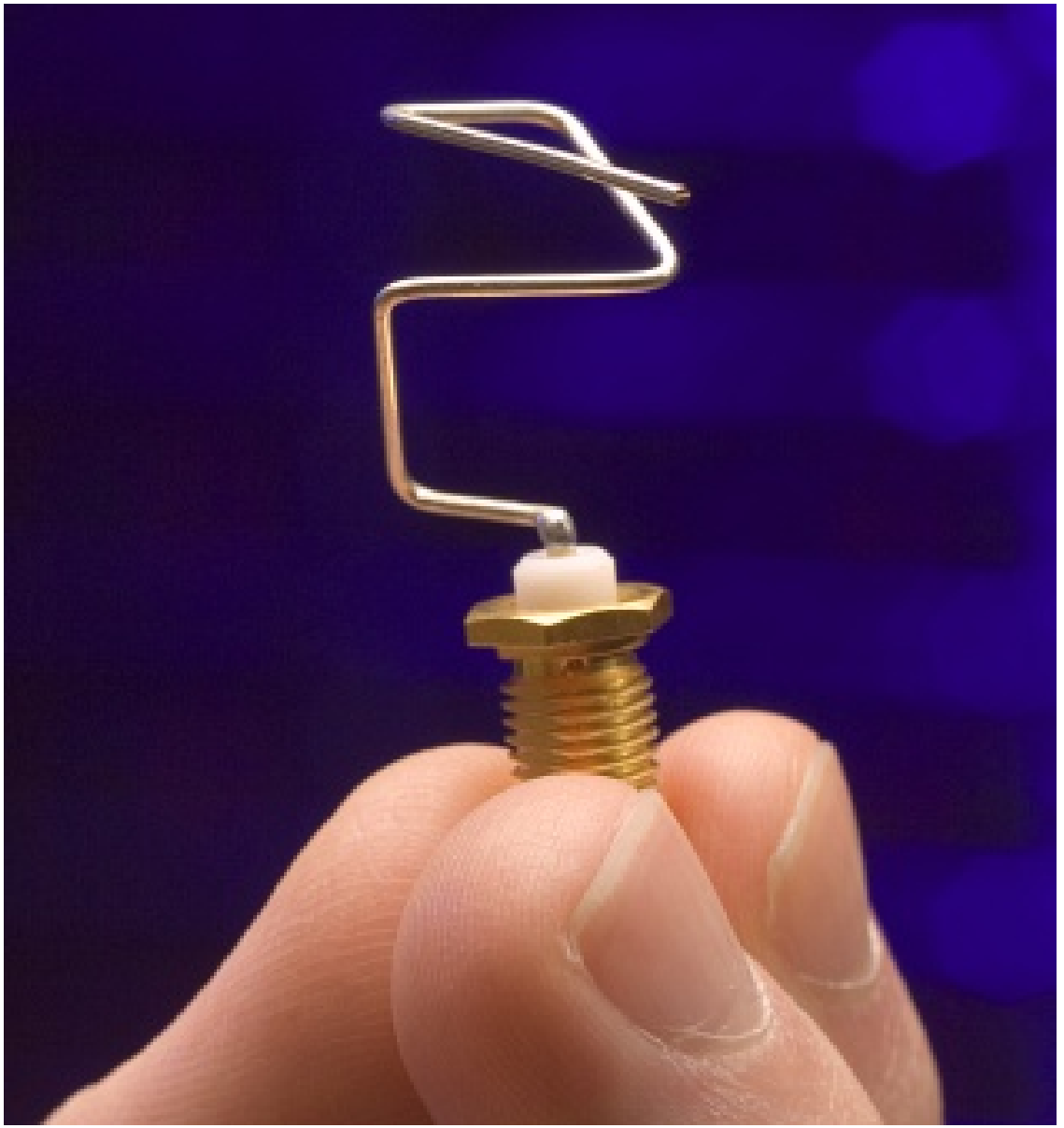
http://en.wikipedia.org/wiki/File:Tree_of_life_SVG.svg



Source: http://med.stanford.edu/labs/vanderijn-west/documents/108ra113.full.pdf



(c) 2012 Intuitive Surgical, Inc.



http://www.nasa.gov/centers/ames/images/content/144975main_ACD06-0043-007.jpg

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All of these projects occurred within the last fifteen years.

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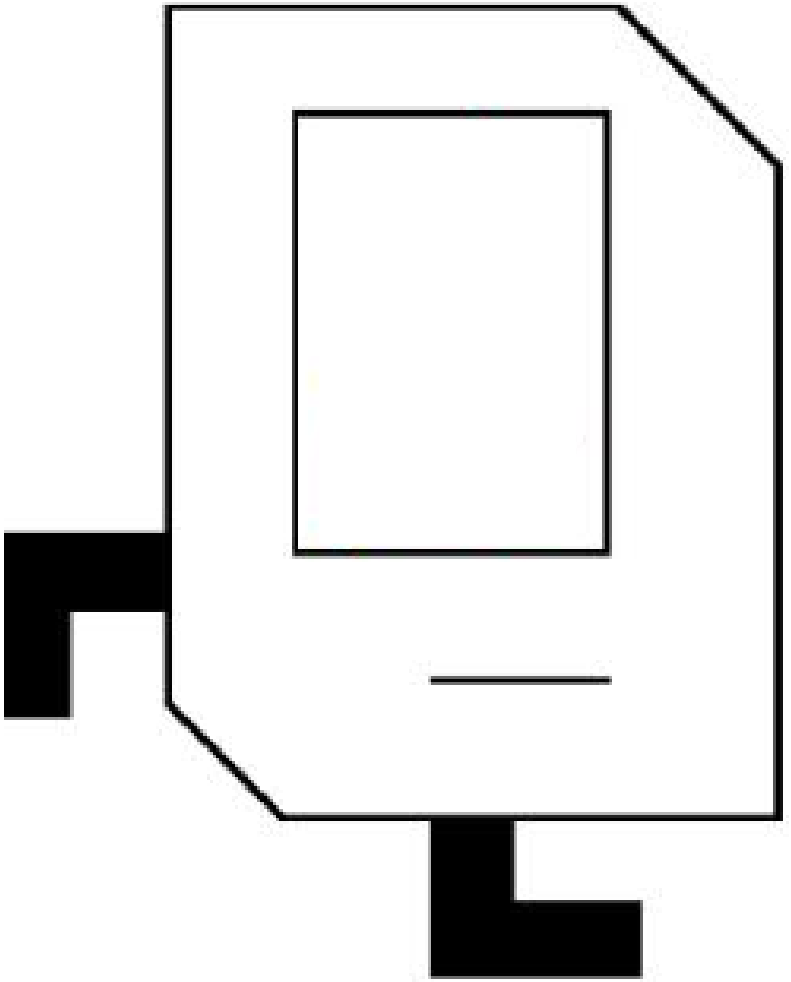
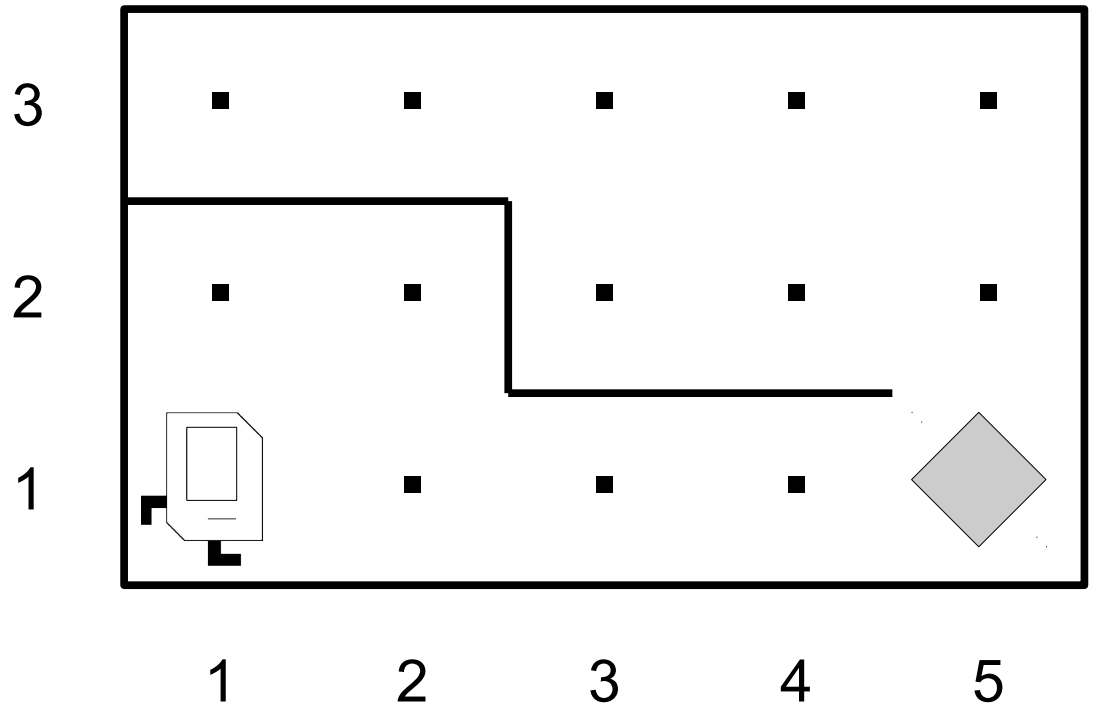
Goals for this Course

- ***Learn how to harness computing power to solve problems.***
- To that end:
  - Explore fundamental techniques in computer programming.
  - Develop good software engineering techniques.
  - Gain familiarity with the Java programming language.

Meet Karel the Robot



Karel's World



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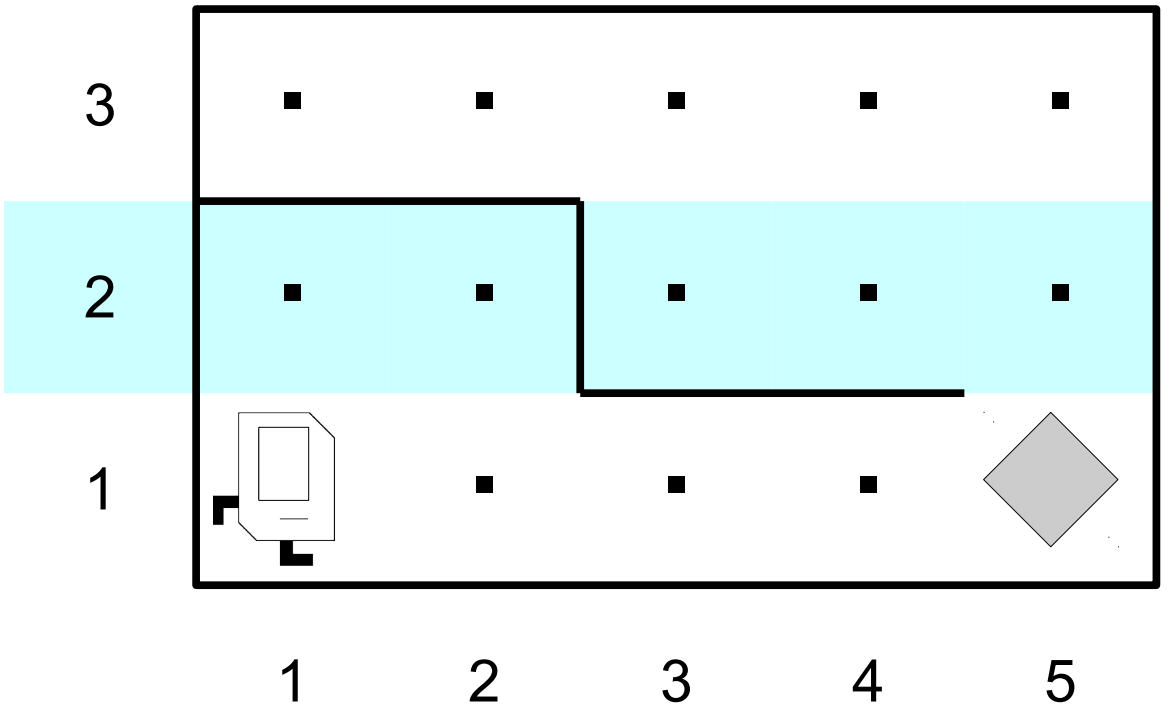

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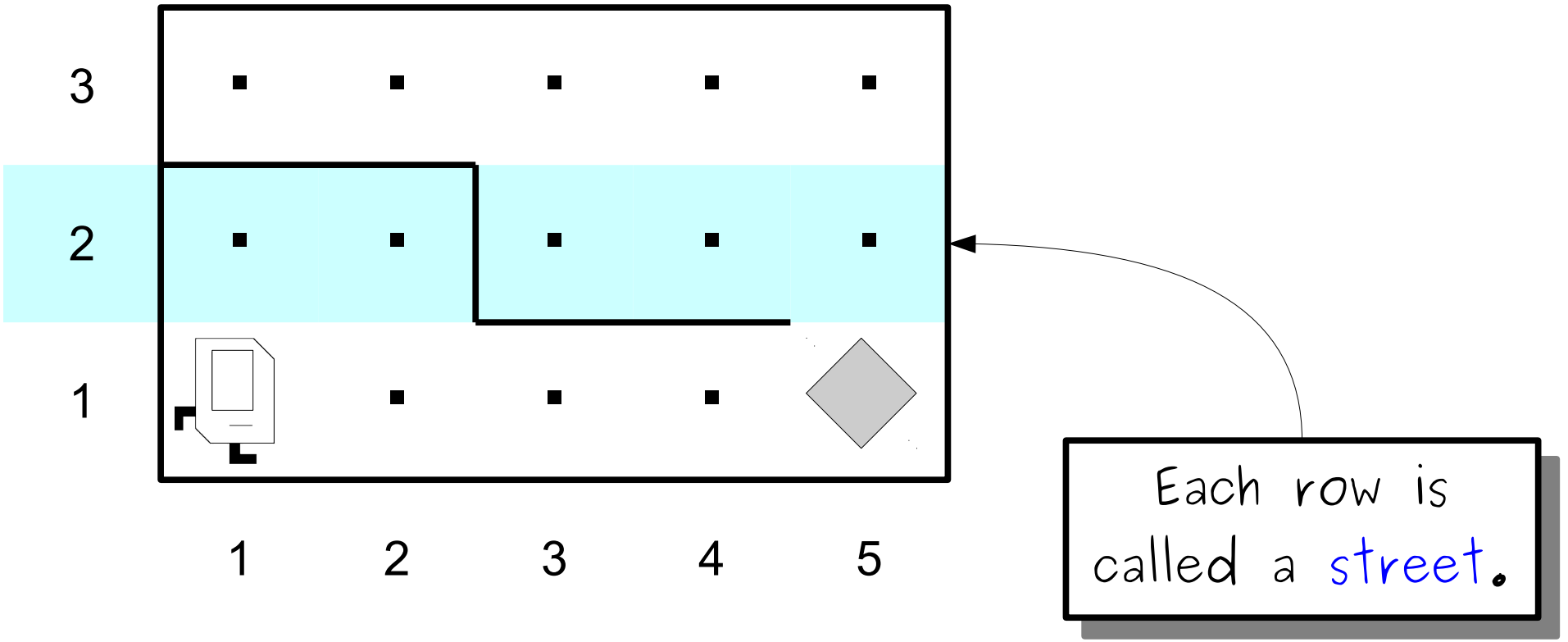

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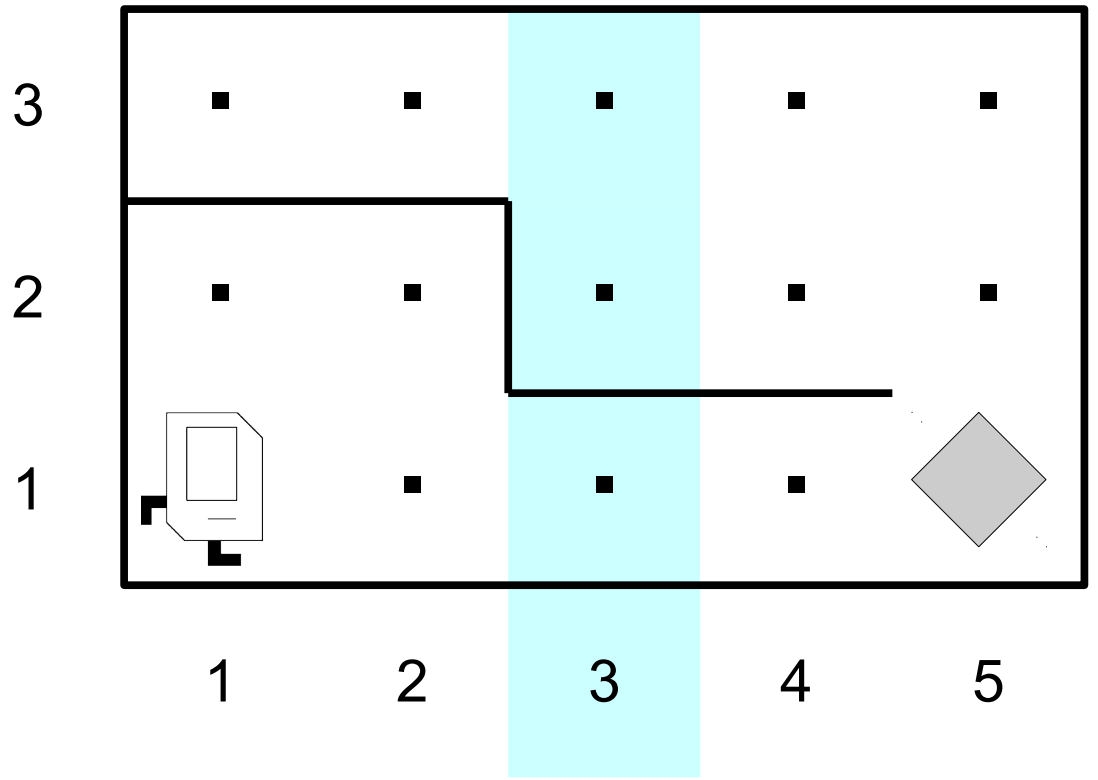

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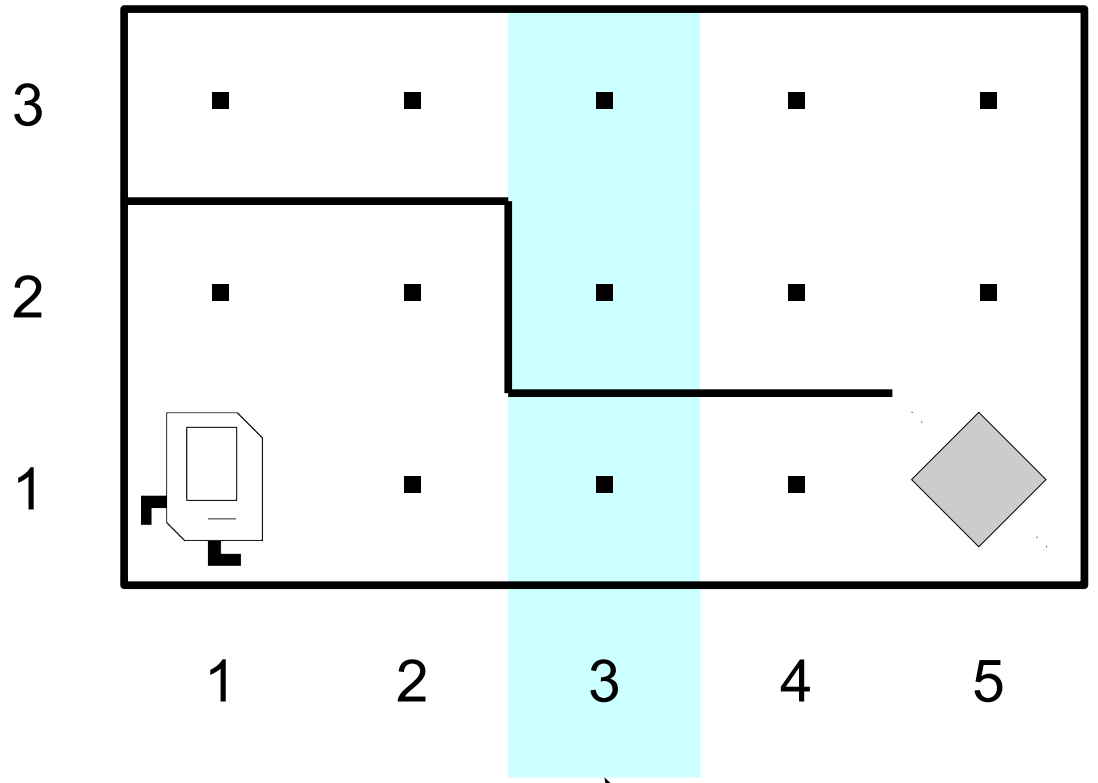
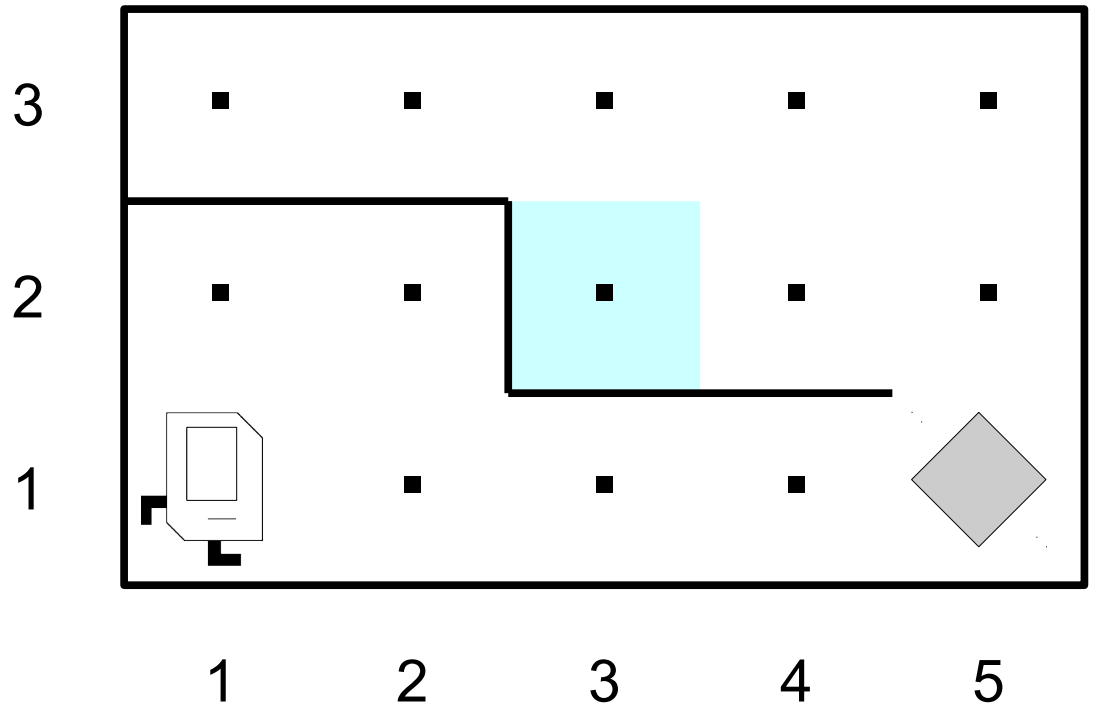


Each column is called an avenue.

Karel's World



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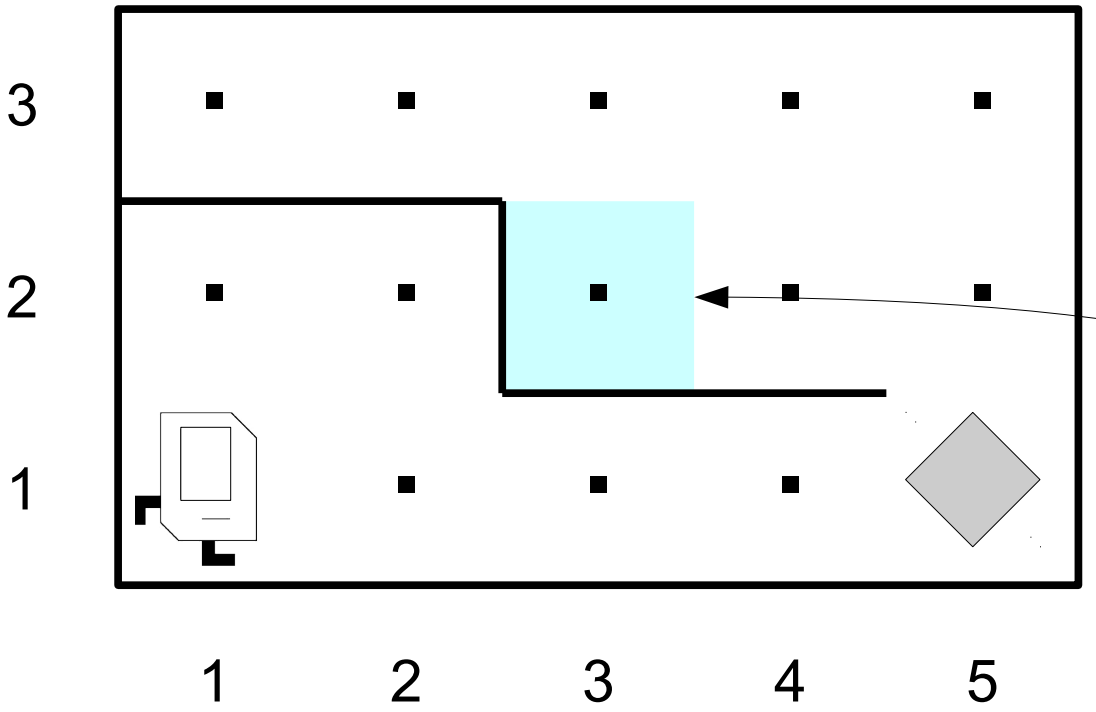
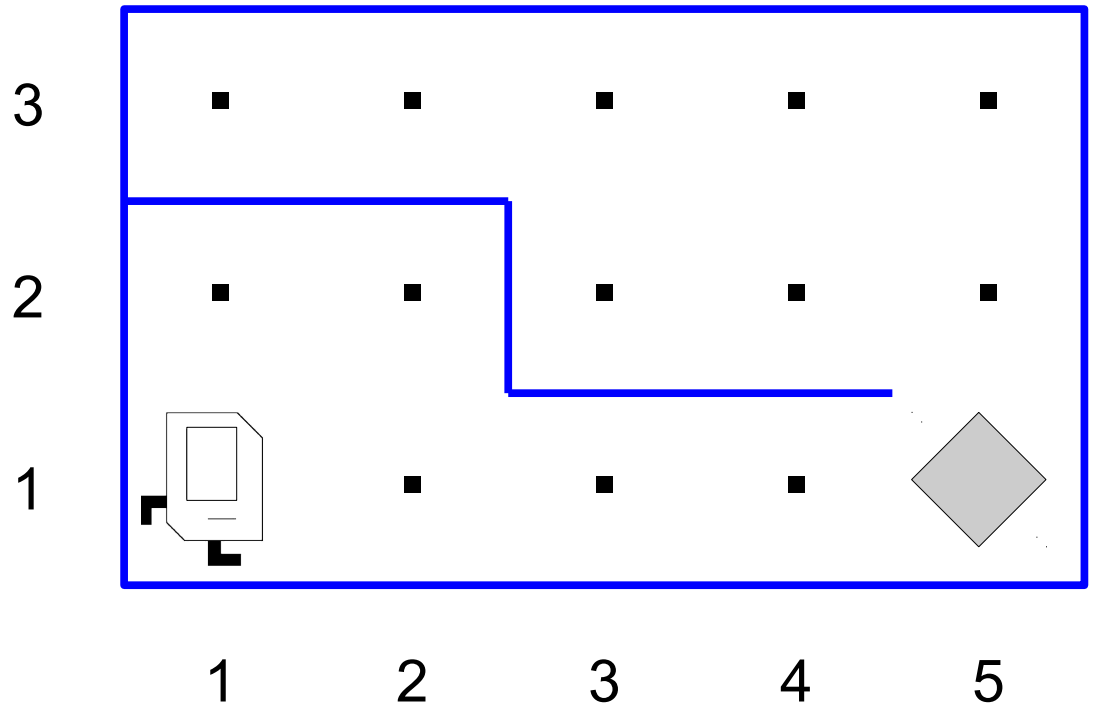


The intersection of a street and an avenue is a corner.

Karel's World



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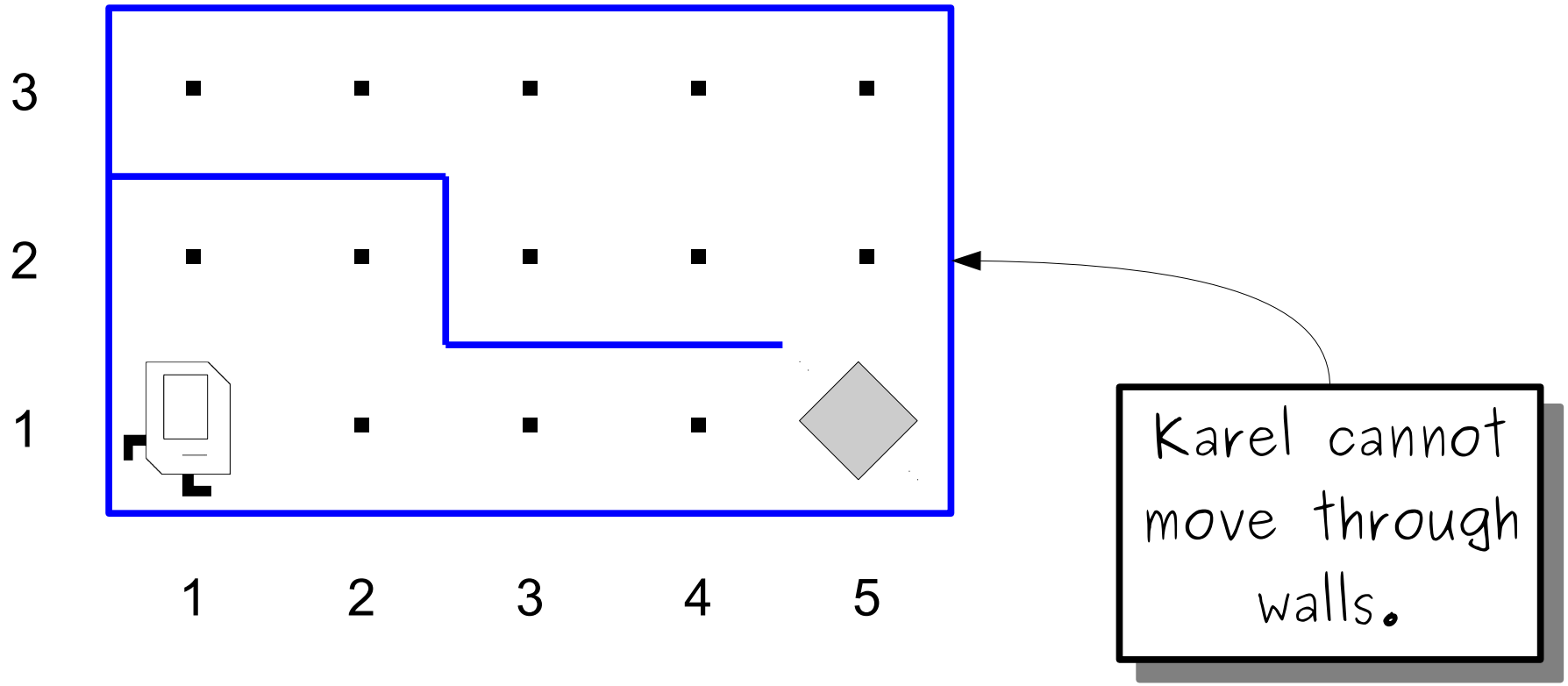

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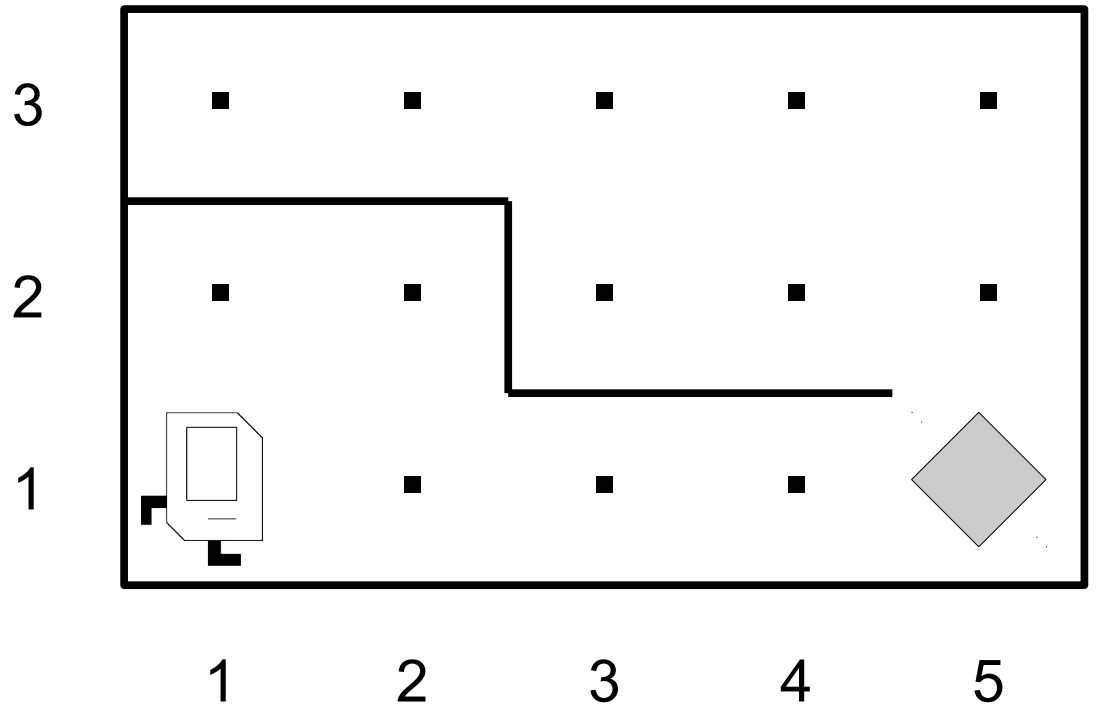

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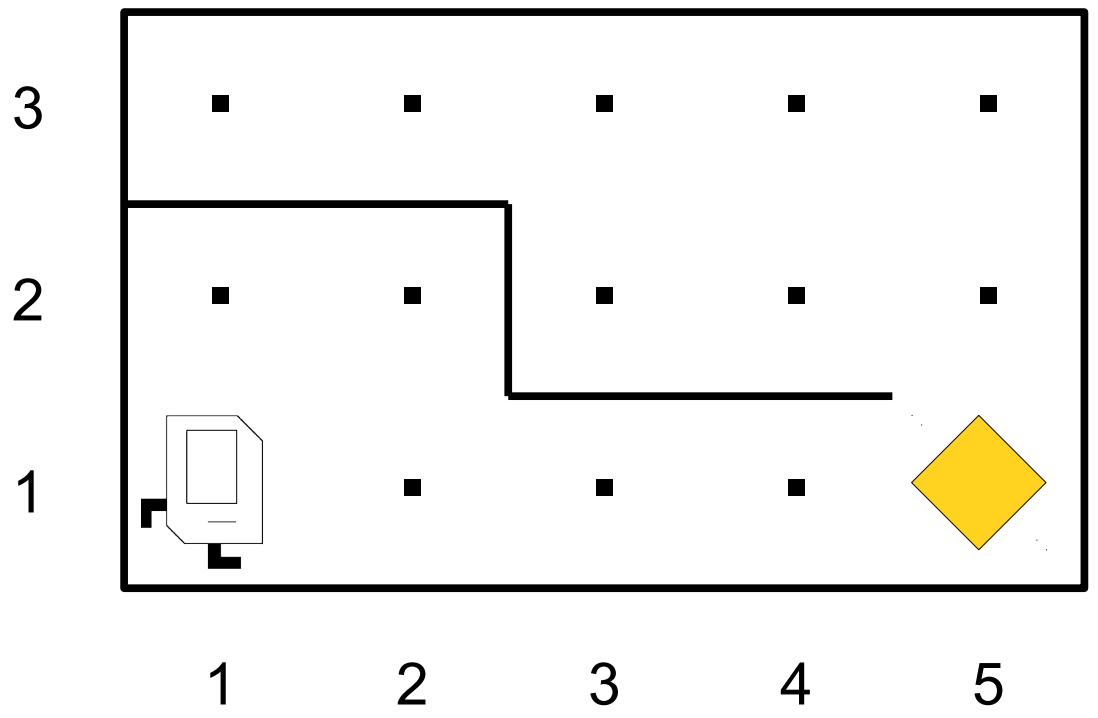

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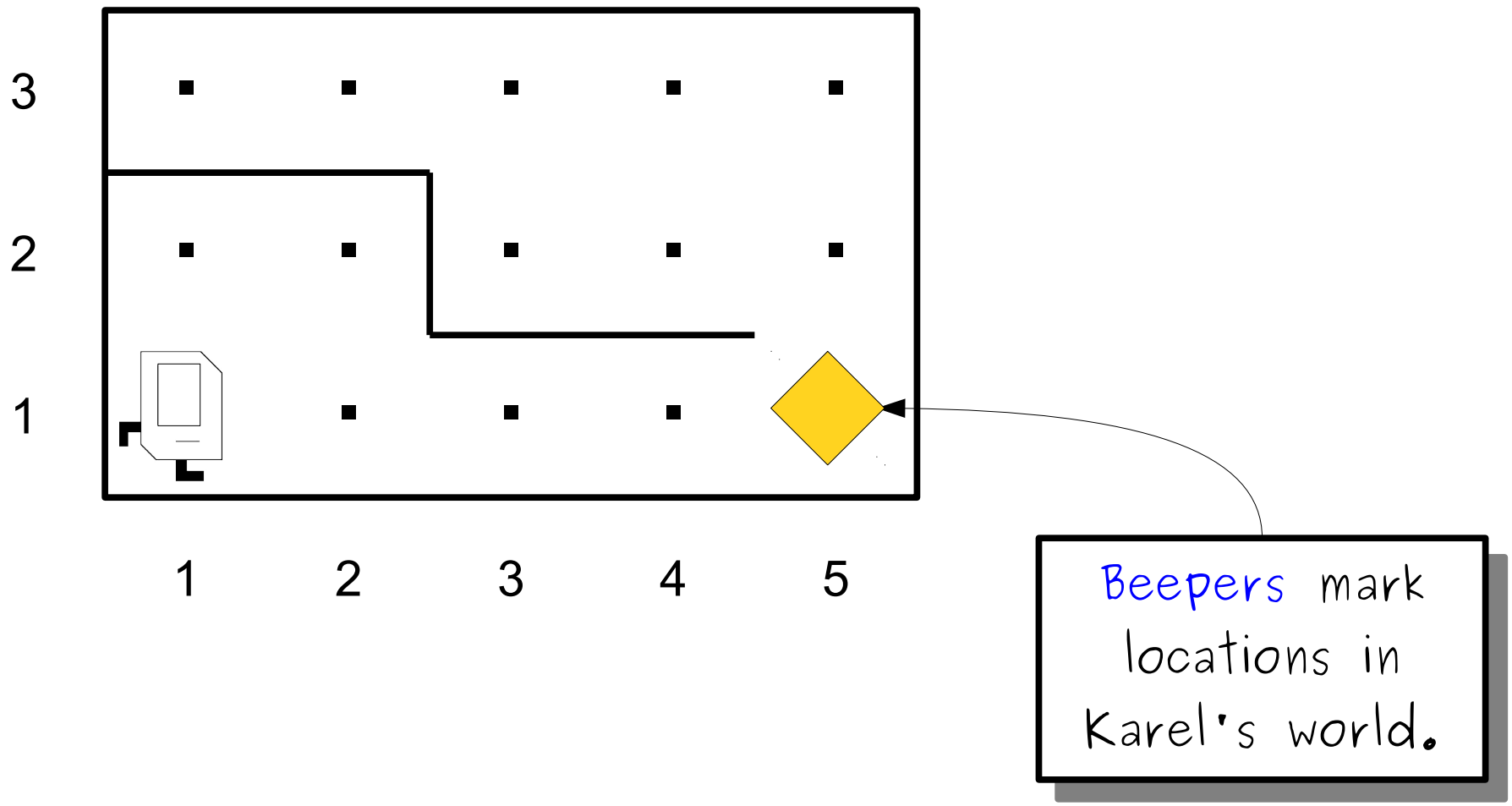

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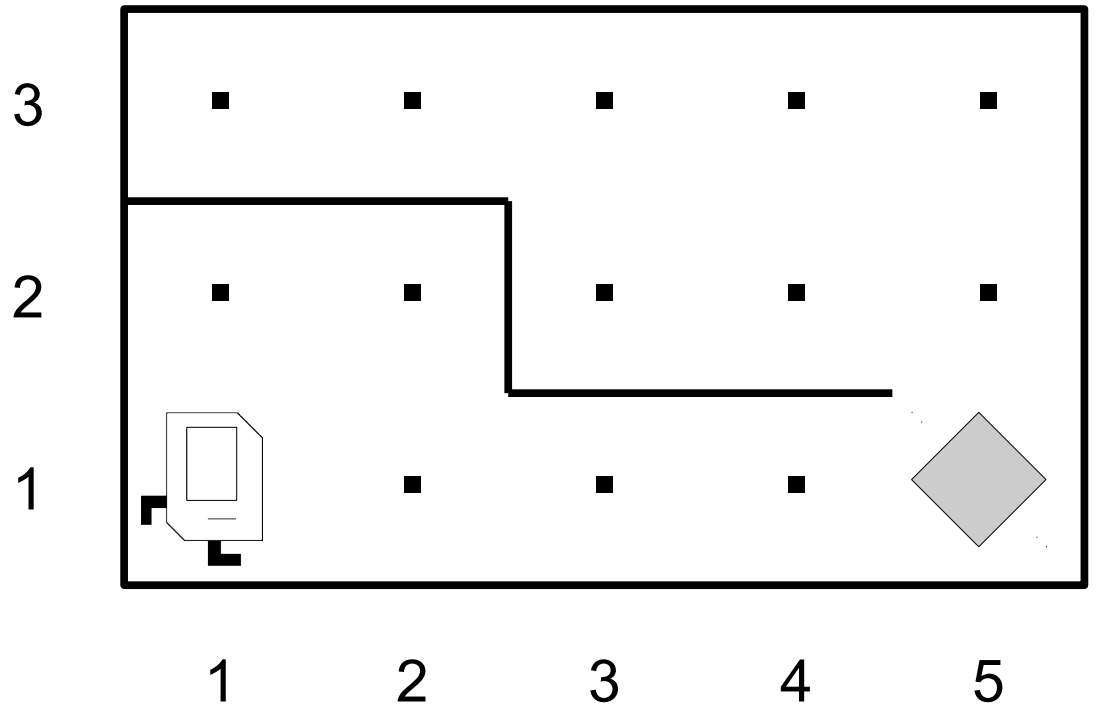

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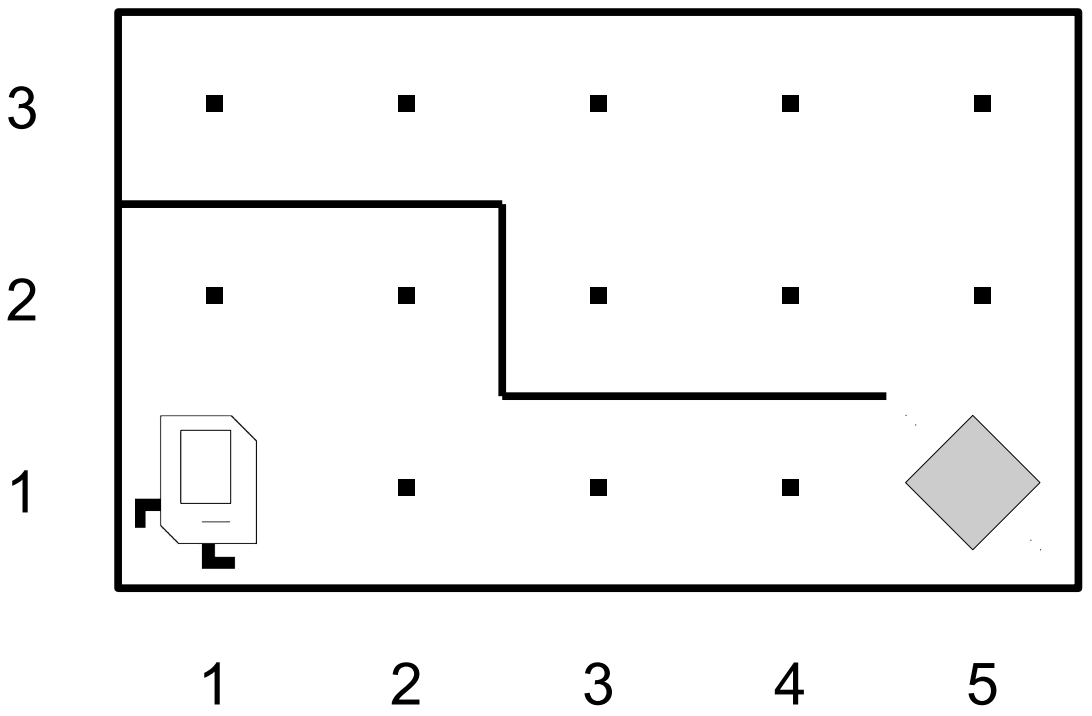
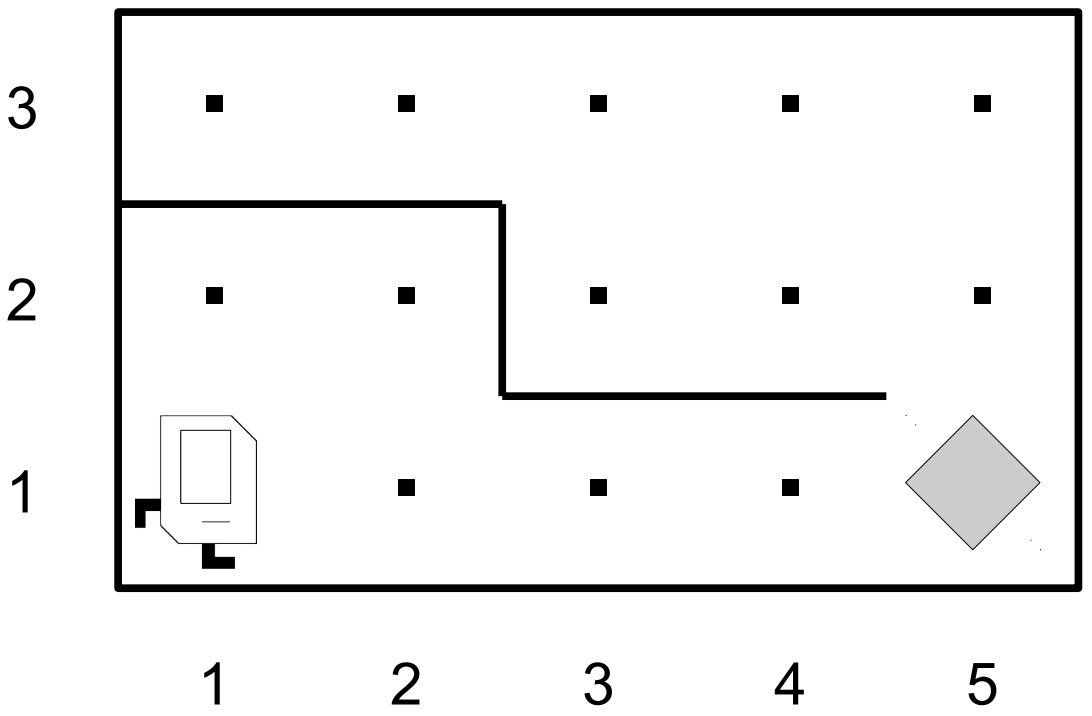


Karel Commands

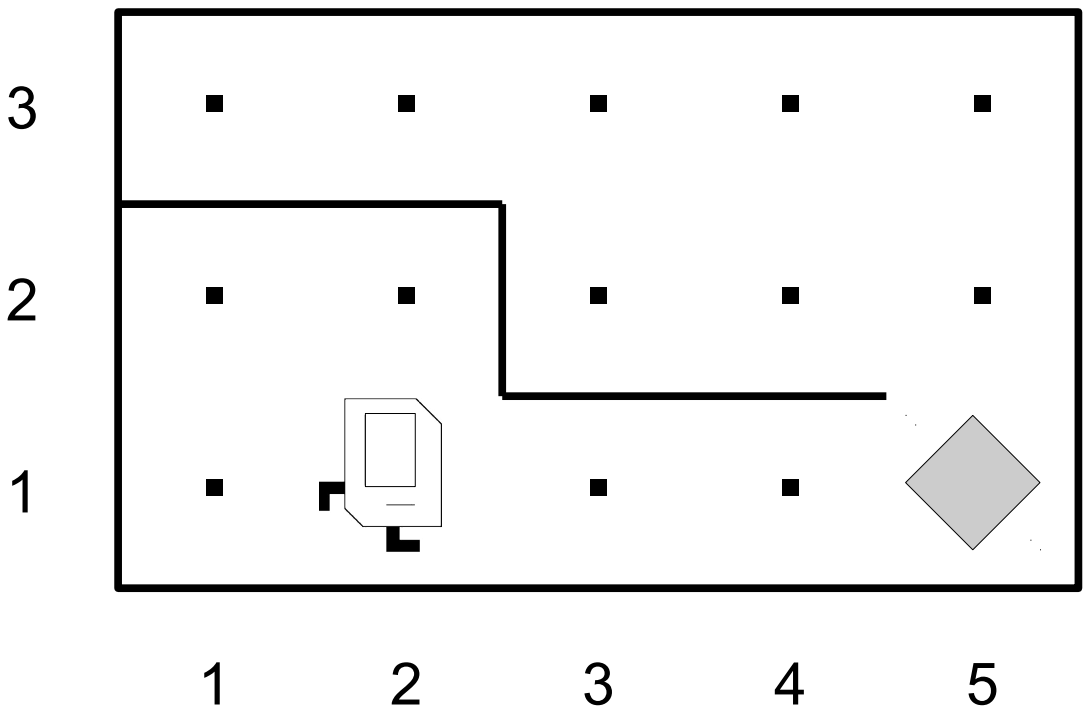
Karel's World



Karel Commands

move

Karel's World



Karel Commands

move

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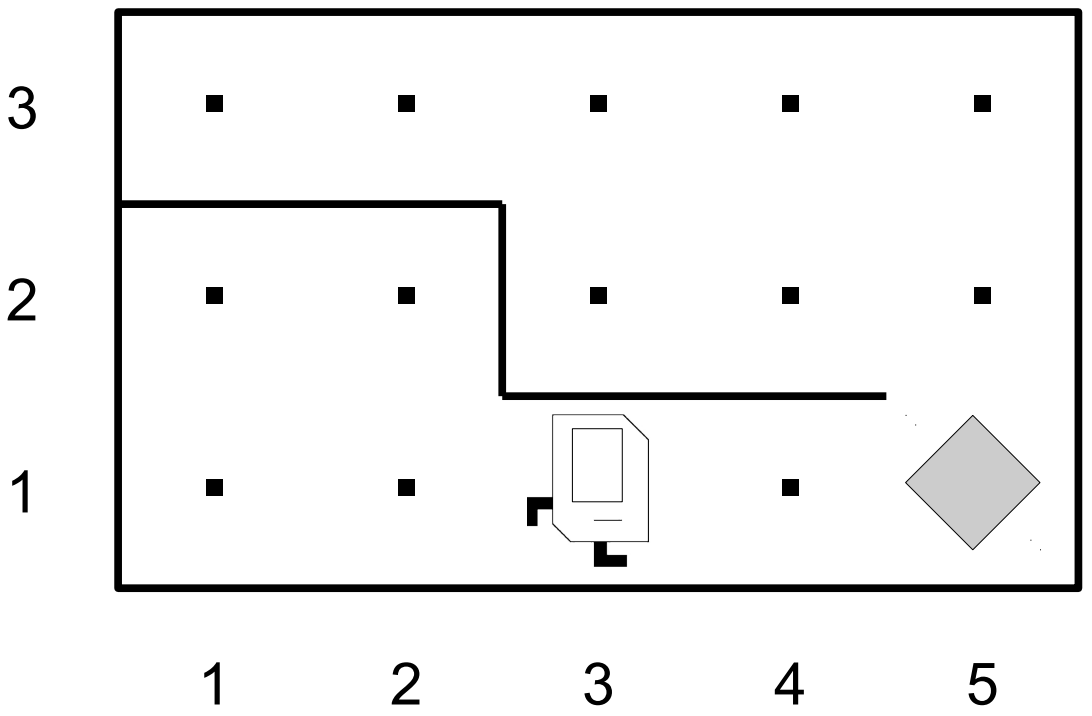
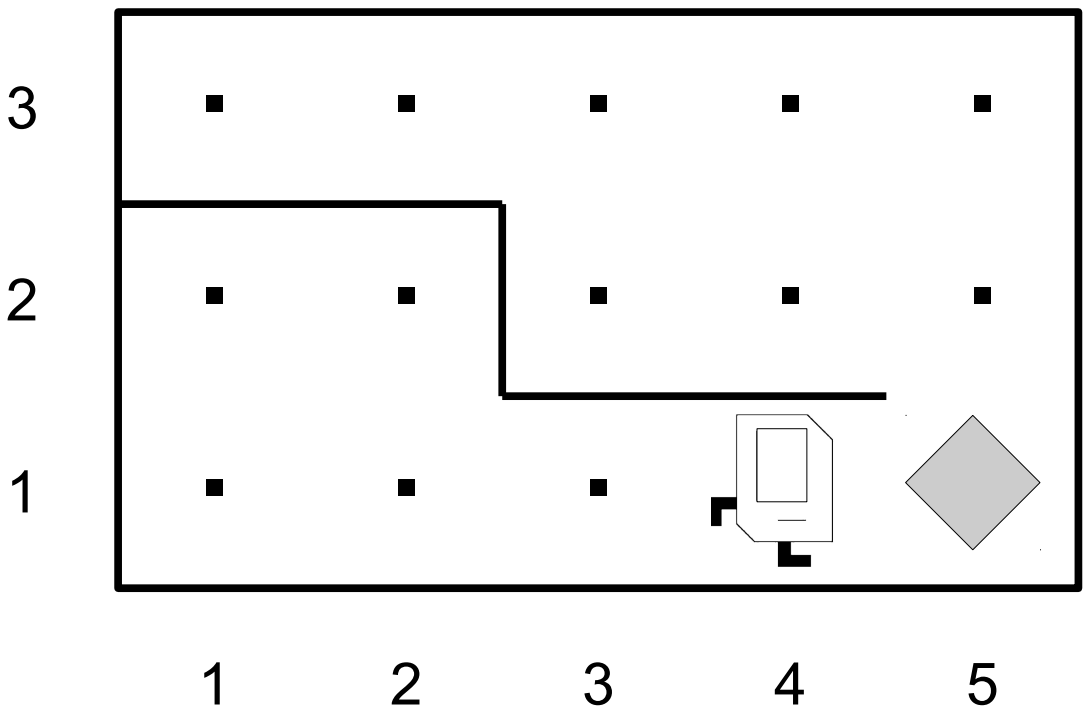


Karel Commands

move

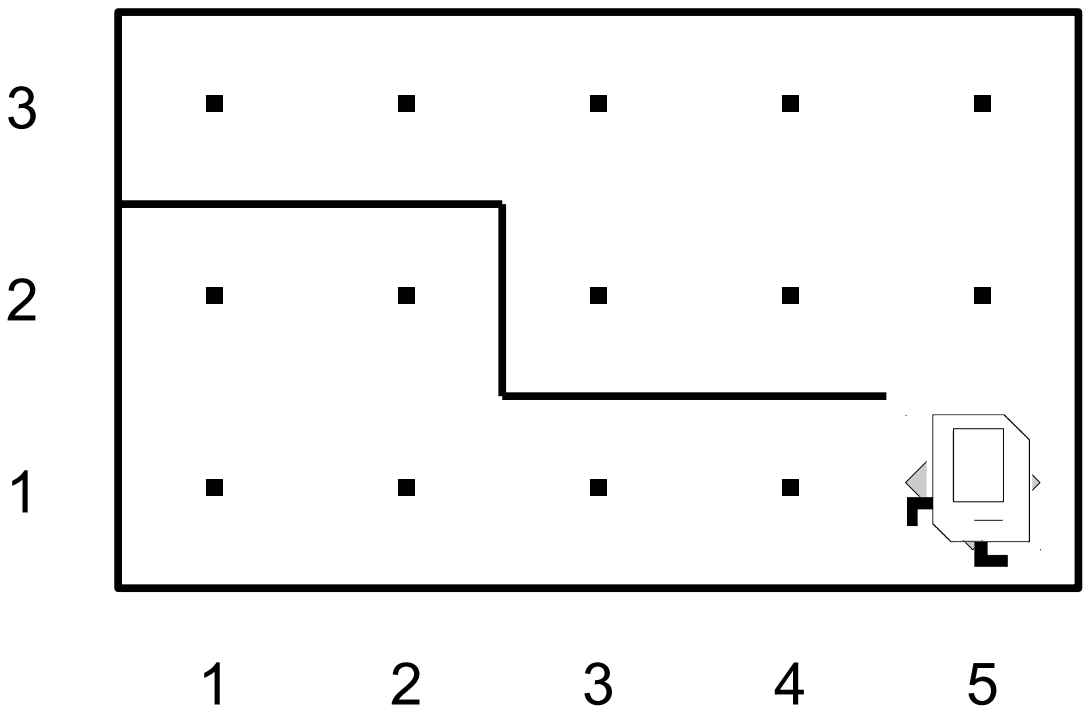
Karel's World



Karel Commands

move

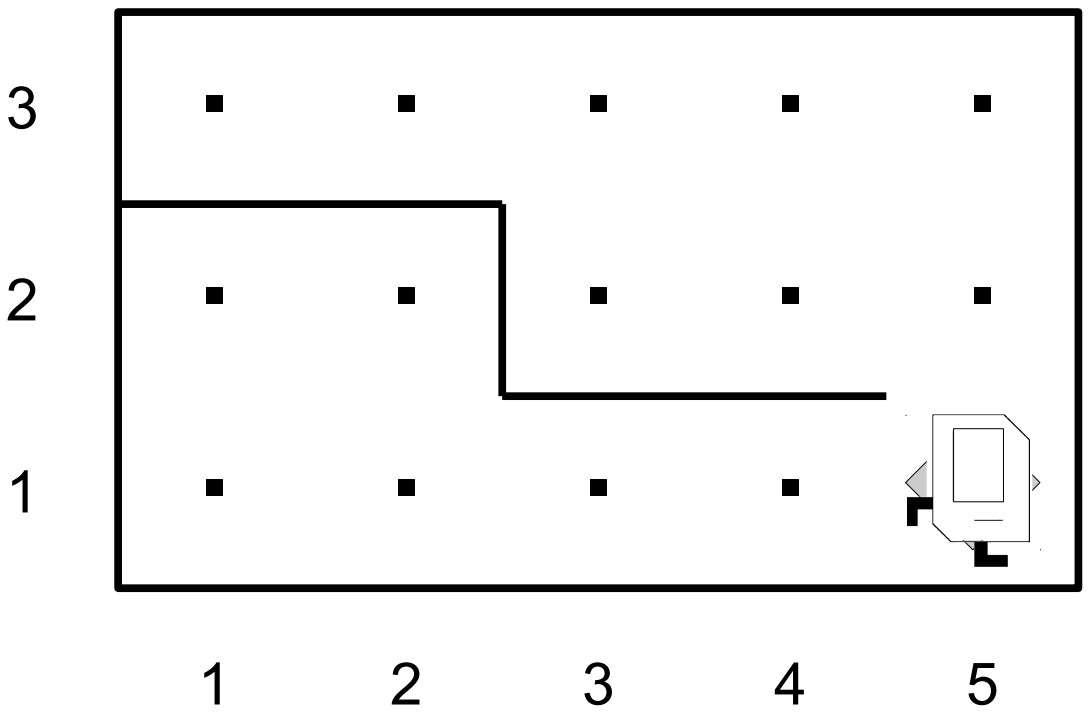
Karel's World



Karel Commands

move

Karel's World

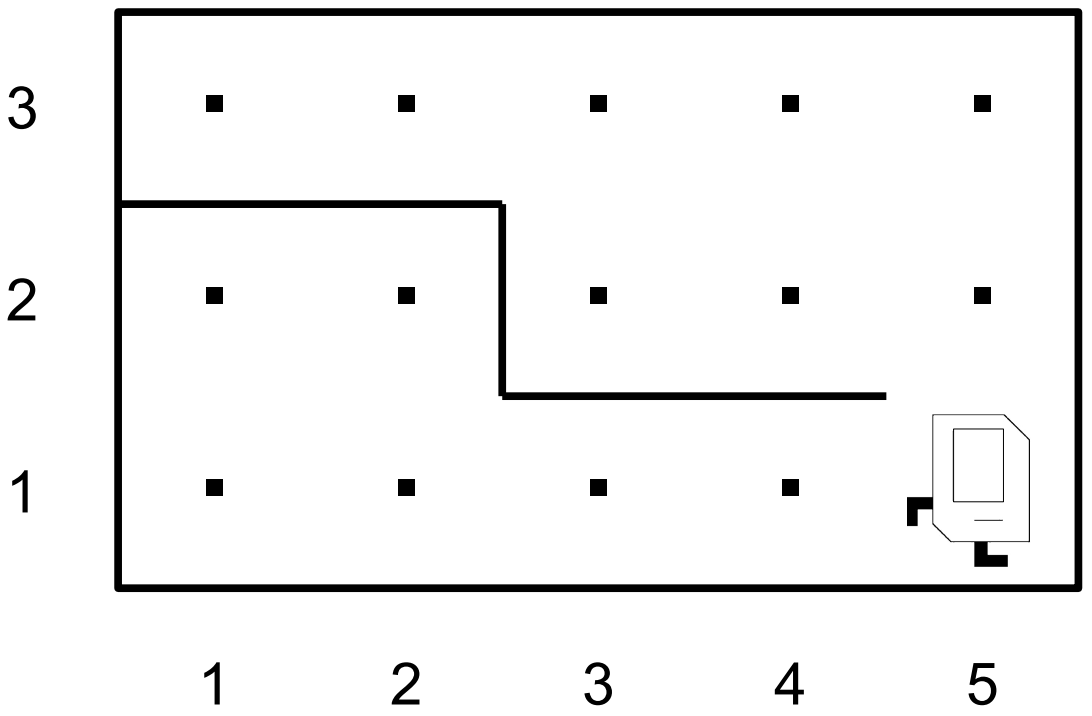


Karel Commands

move

pickBeeper

Karel's World

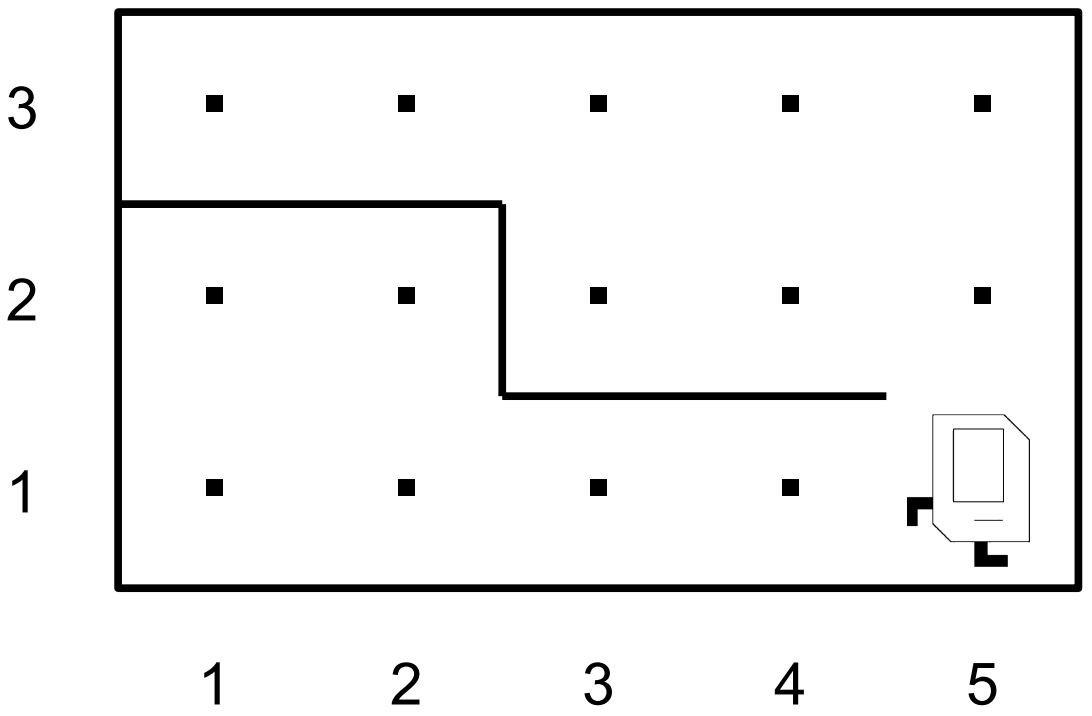


Karel Commands

move

pickBeeper

Karel's World



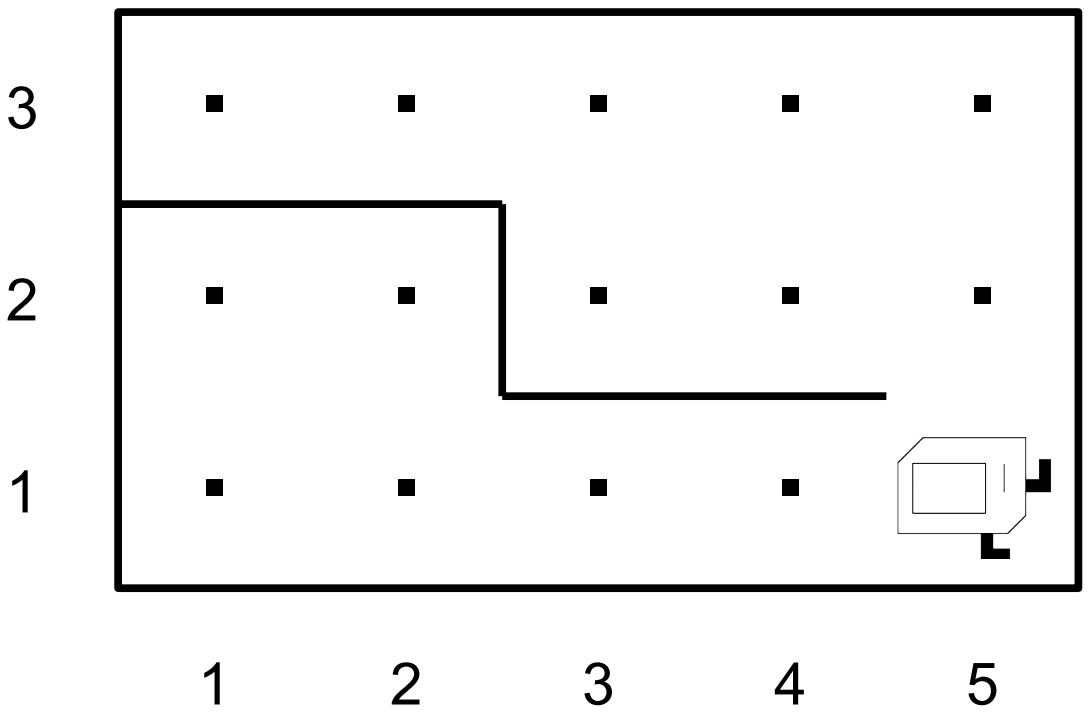
Karel Commands

move

pickBeeper

turnLeft

Karel's World



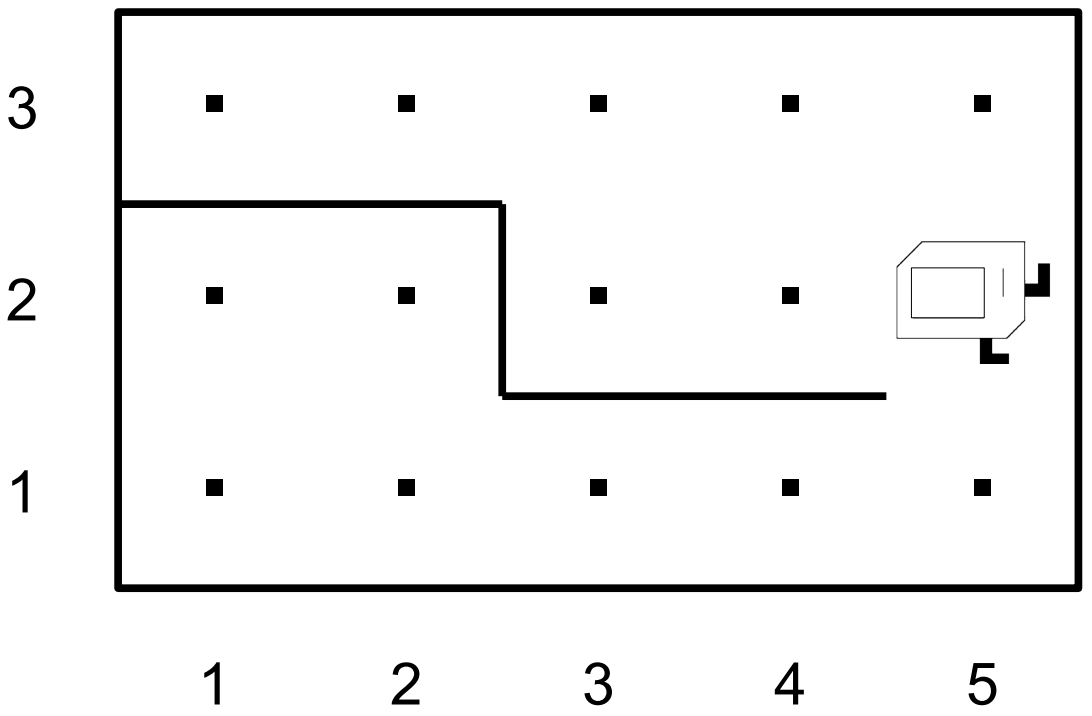
Karel Commands

move

pickBeeper

turnLeft

Karel's World



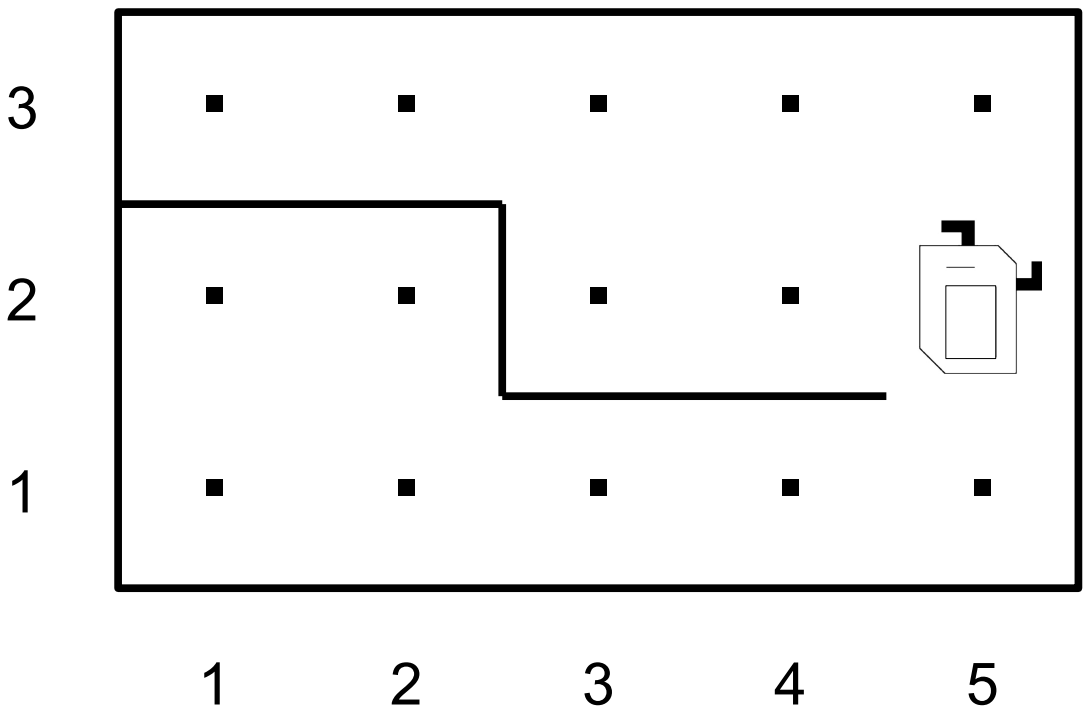
Karel Commands

move

pickBeeper

turnLeft

Karel's World



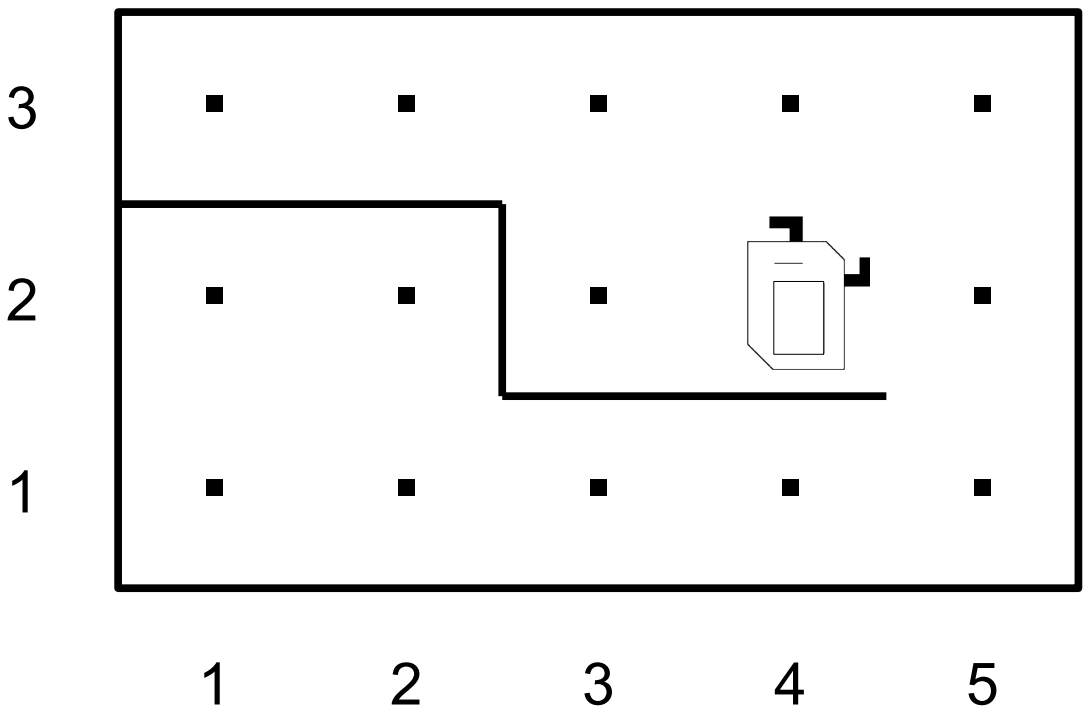
Karel Commands

move

pickBeeper

turnLeft

Karel's World



Karel Commands

move

pickBeeper

turnLeft

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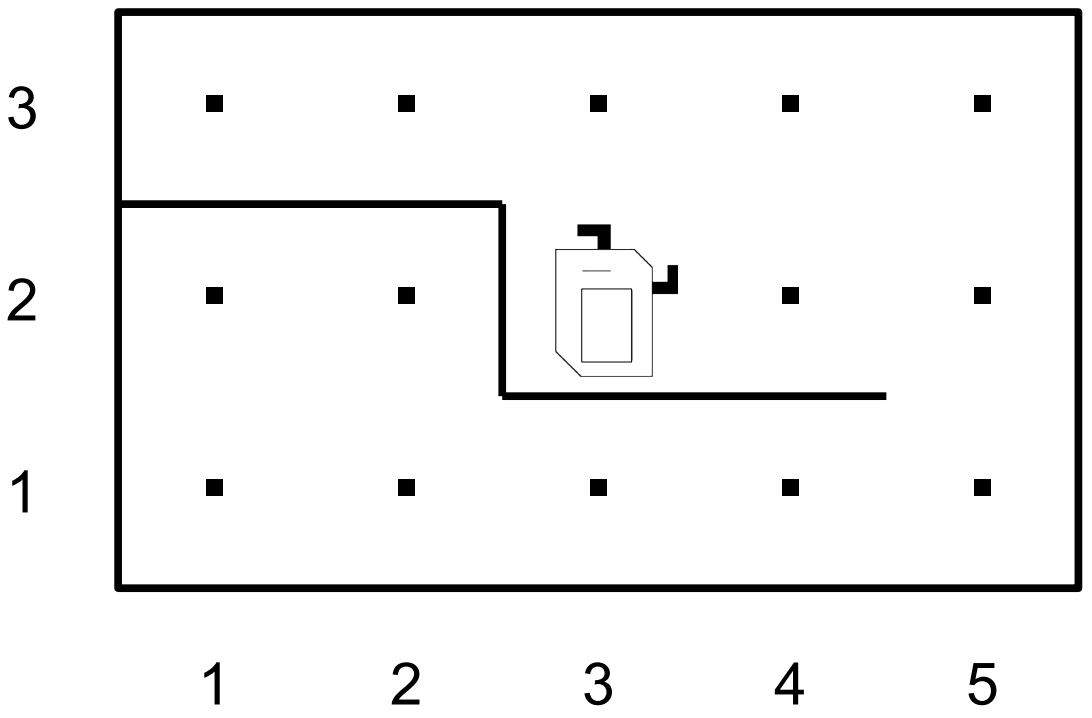

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pickBeeper

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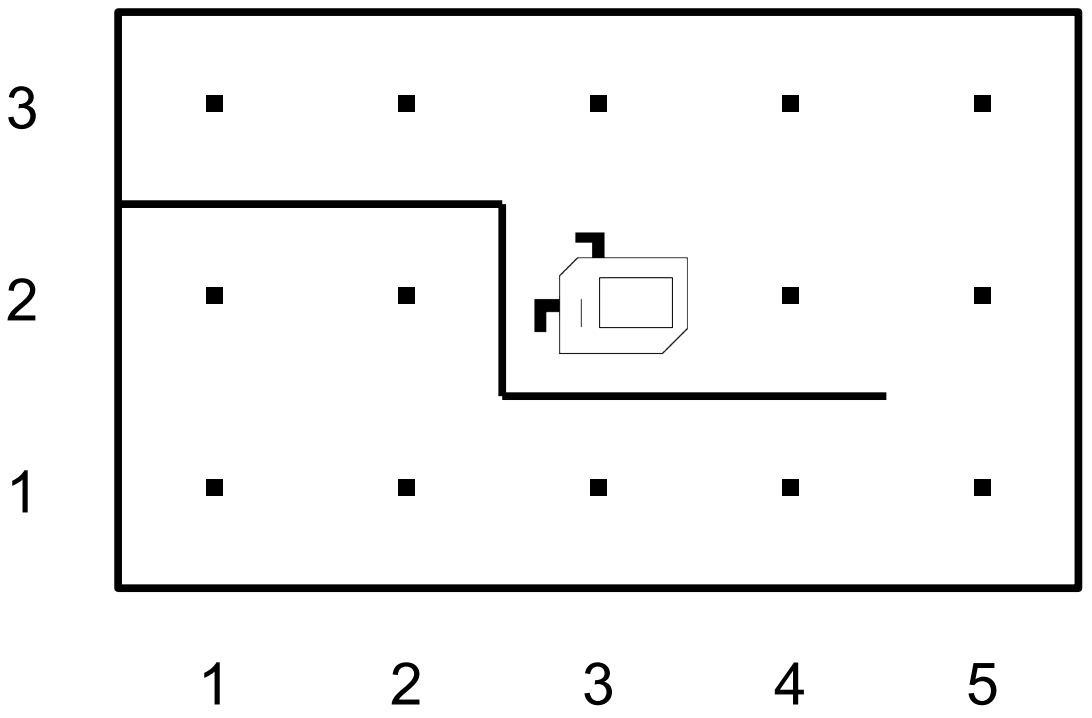

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pickBeeper

turnLeft

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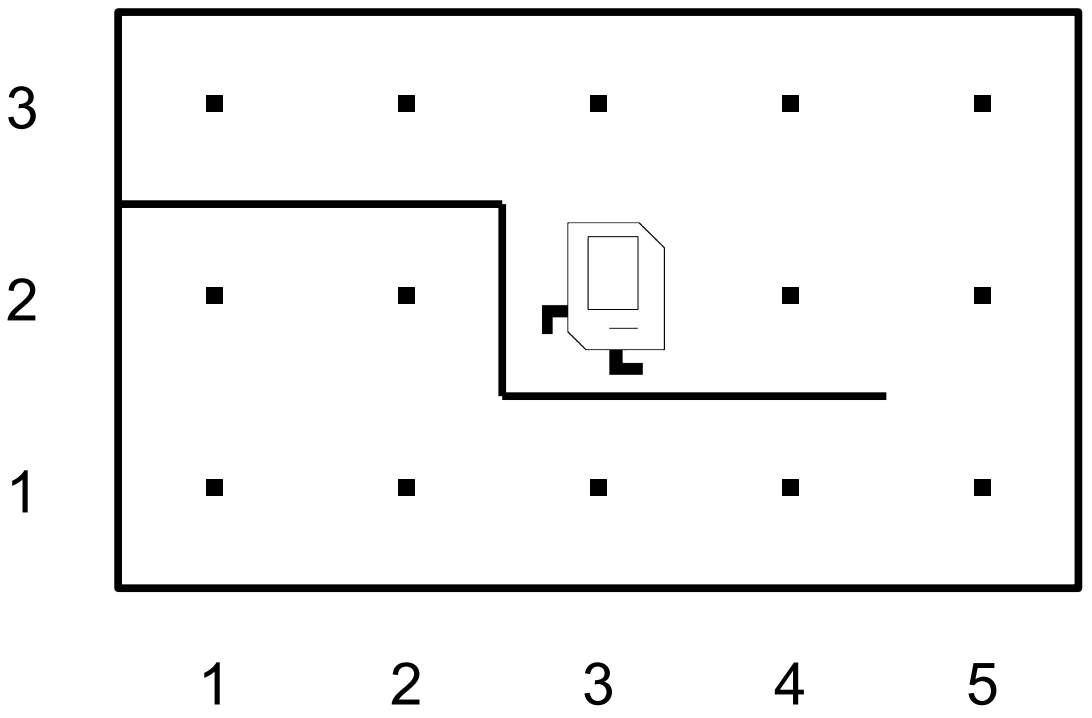

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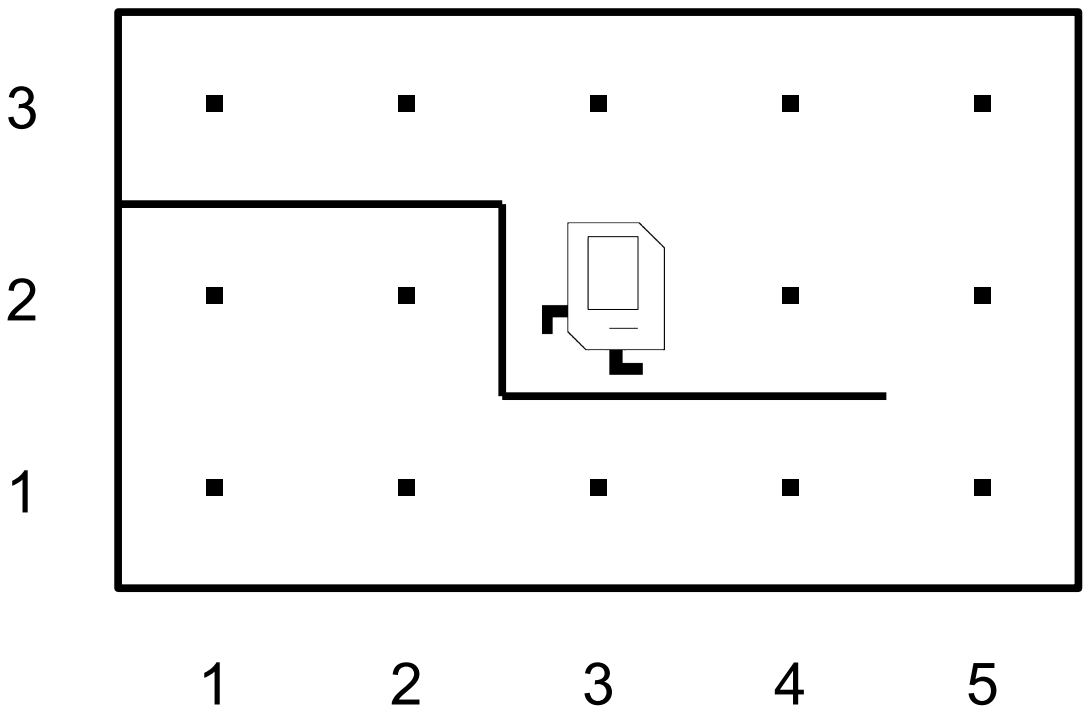

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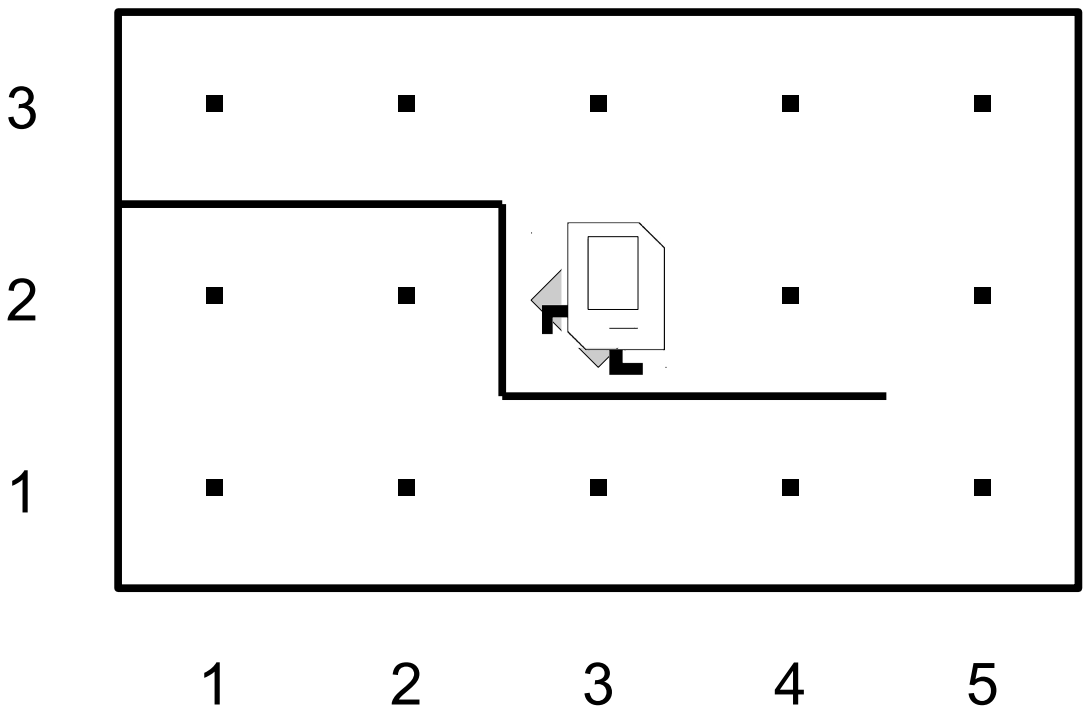
putBeeper

Karel's World



Karel Commands

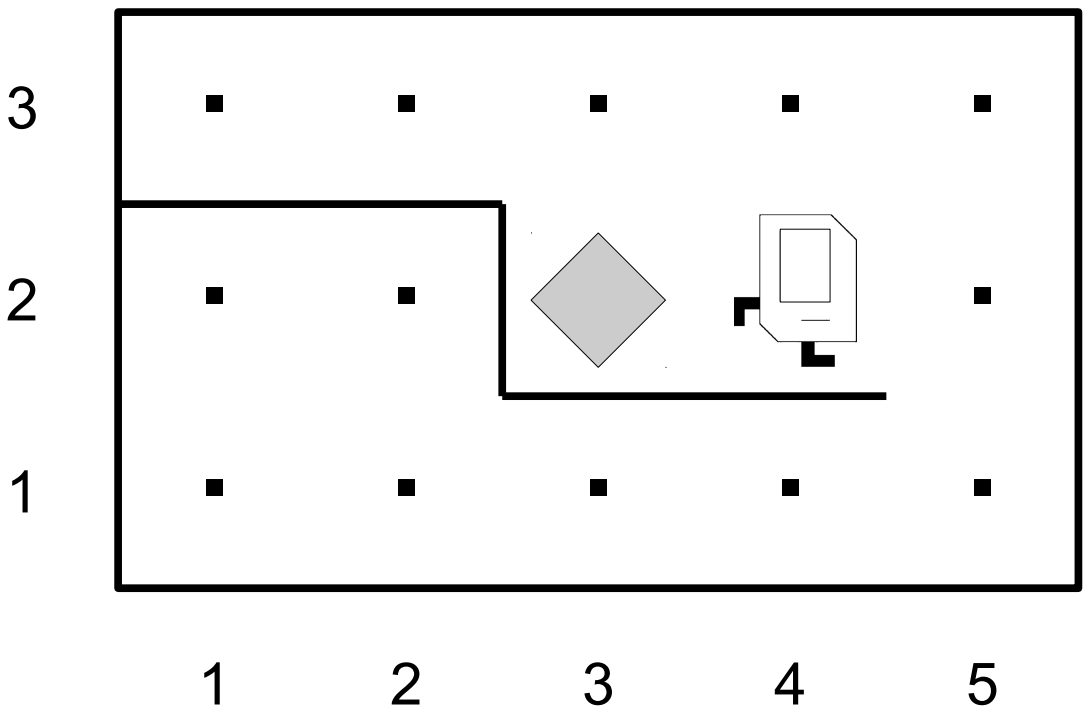
move

pickBeeper

turnLeft

putBeeper

Karel's World



Karel Commands

move

pickBeeper

turnLeft

putBeeper

Get Ready!

It's Time for Your Very First Karel Program!