Welcome to CS106A!

- Four Handouts
- Today:
  - Course Overview
  - Why Learn to Program?
  - Meet Karel the Robot

Who's Here Today?

- Aeronautical Engineering
- Anthropology
- Art
- Biochemistry
- Biology
- Biophysics
- Business Administration
- Chemical Engineering
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- Civil Engineering
- Classics
- Communication
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- Race and Ethnicity
- Religious Studies
- Science, Technology, and Society
- Statistics
- Symbolic Systems
- Urban Studies

Course Staff

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

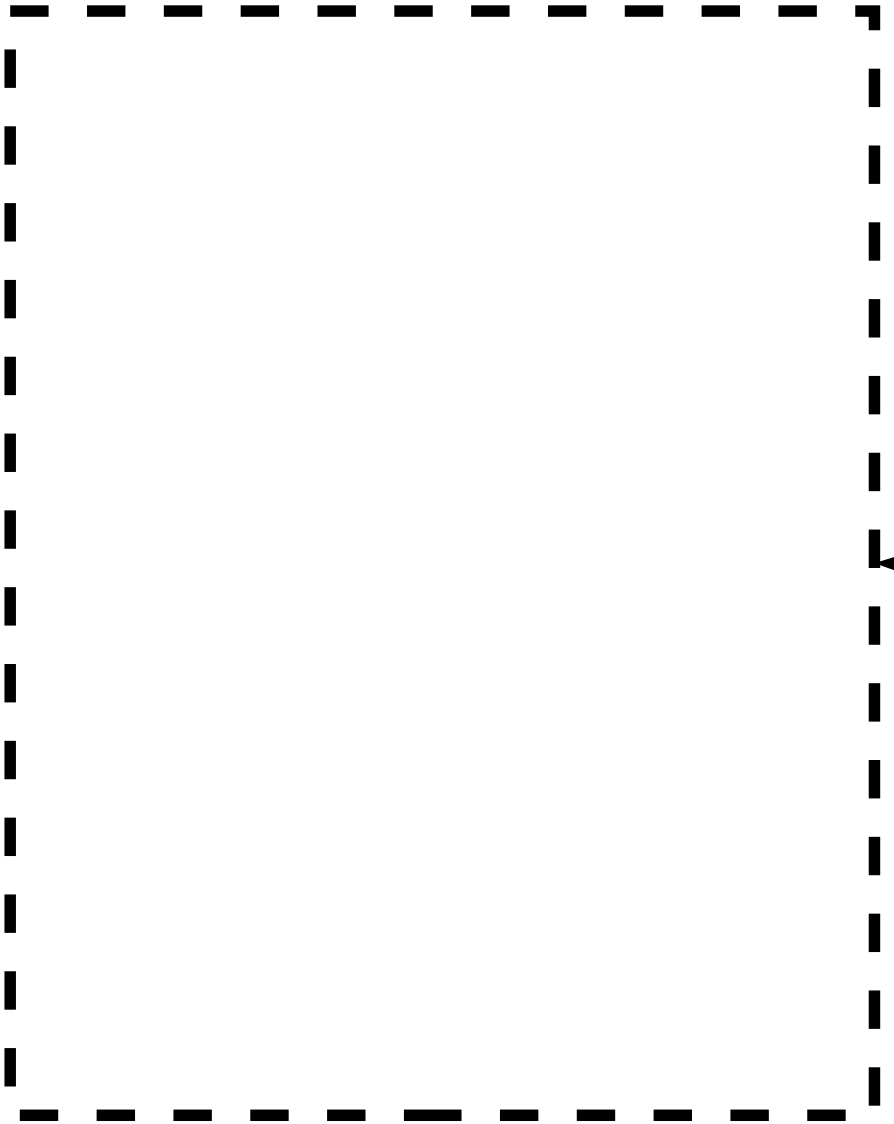
Head TA: Jeremy Keeshin
(jkeeshin@cs.stanford.edu)

The CS106A Section Leaders
The CS106A Course Helpers

Course Website

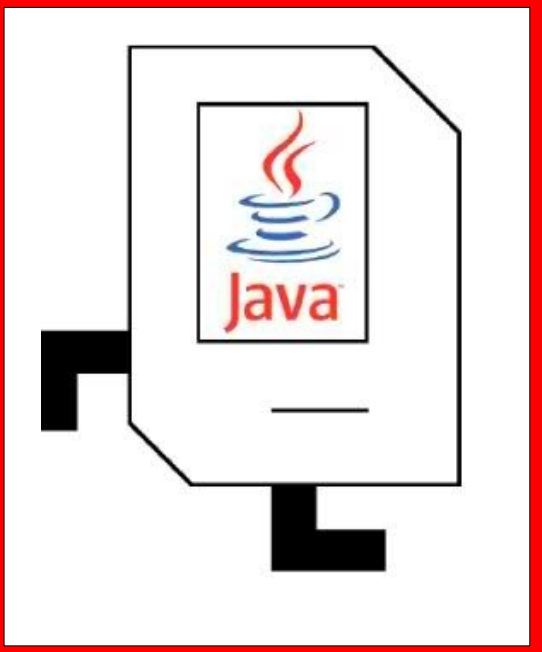
http://cs106a.stanford.edu

Prerequisites



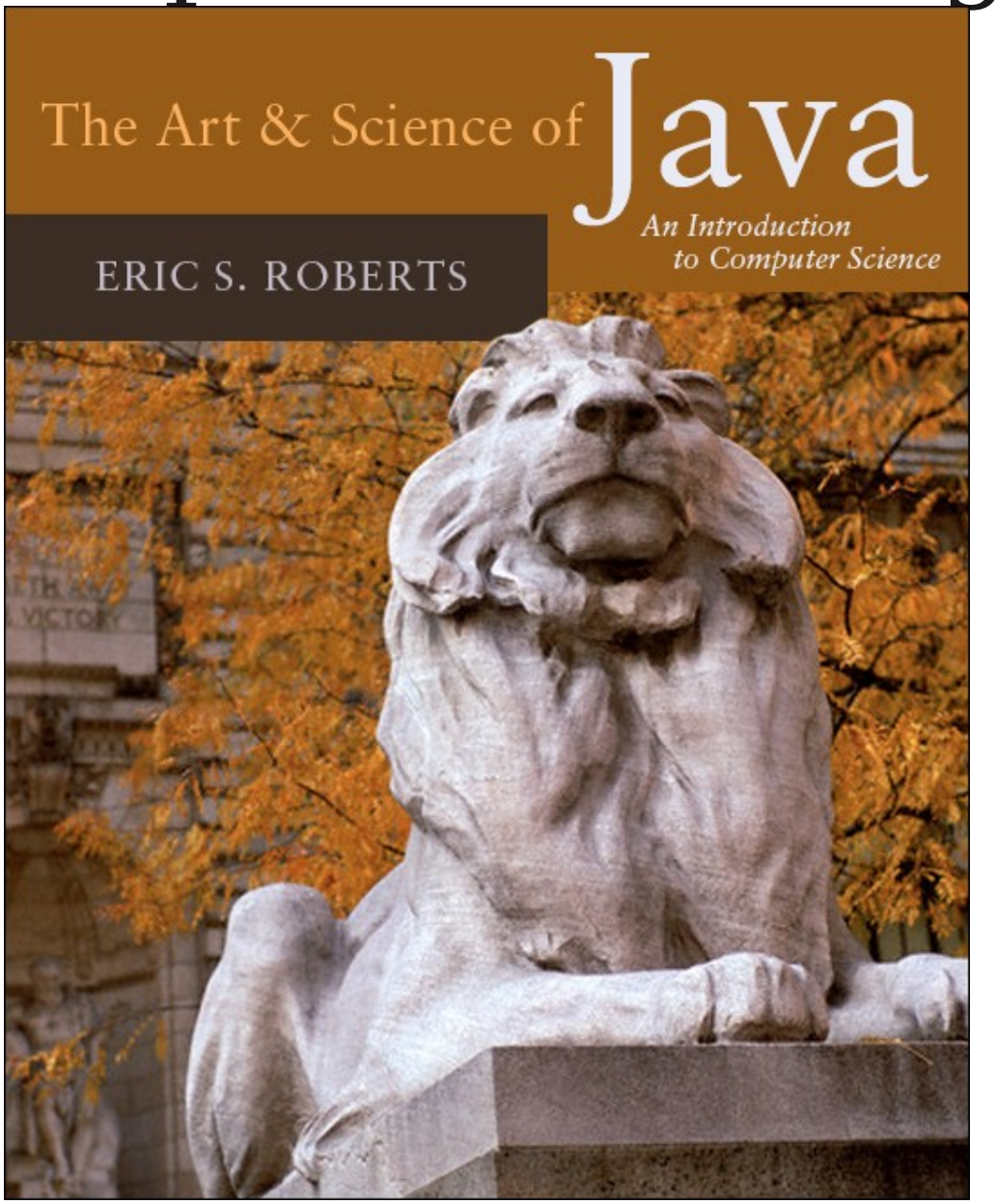
Required Reading

KAREL THE ROBOT



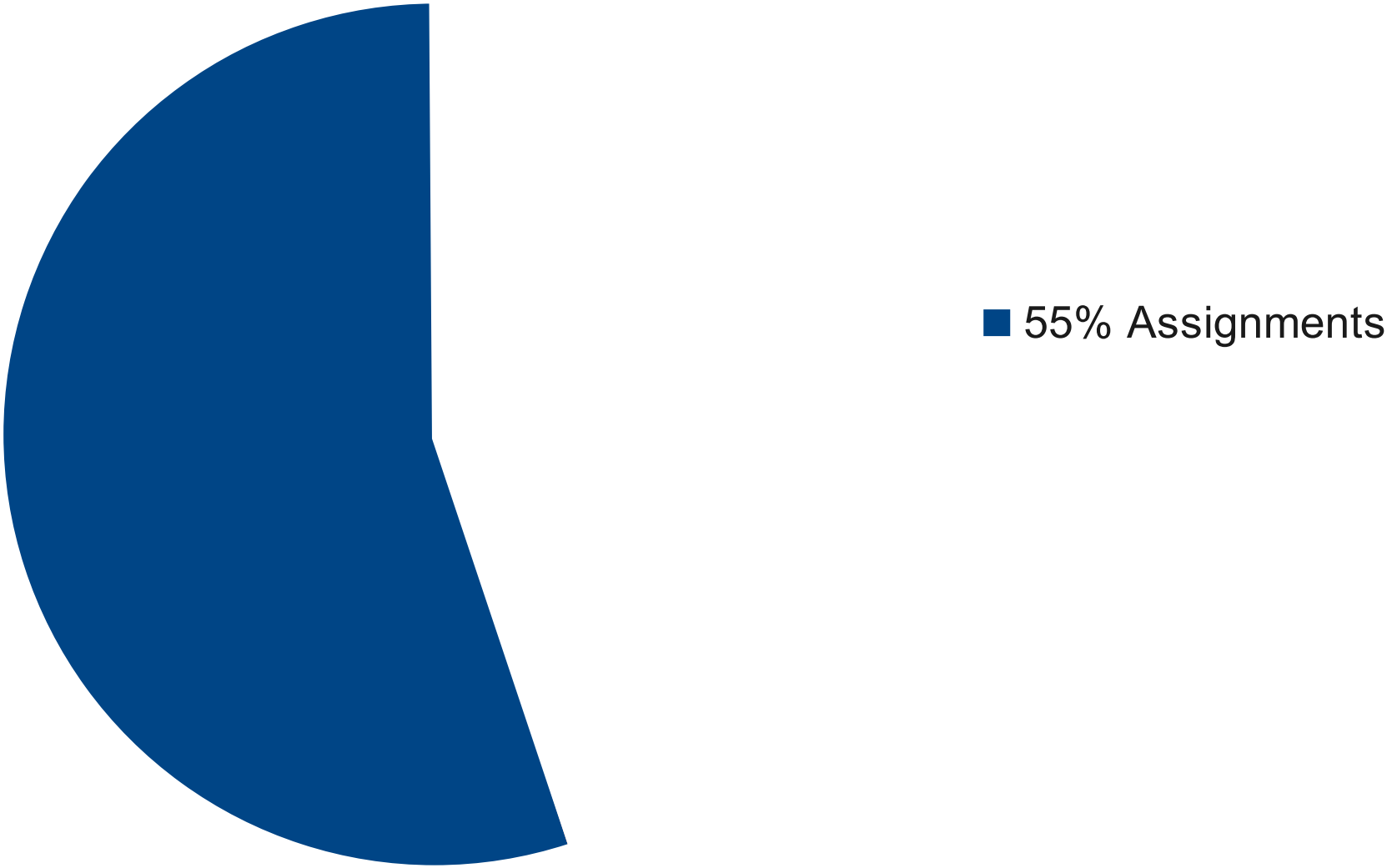
LEARNS JAVA

Required Reading



Grading Policies

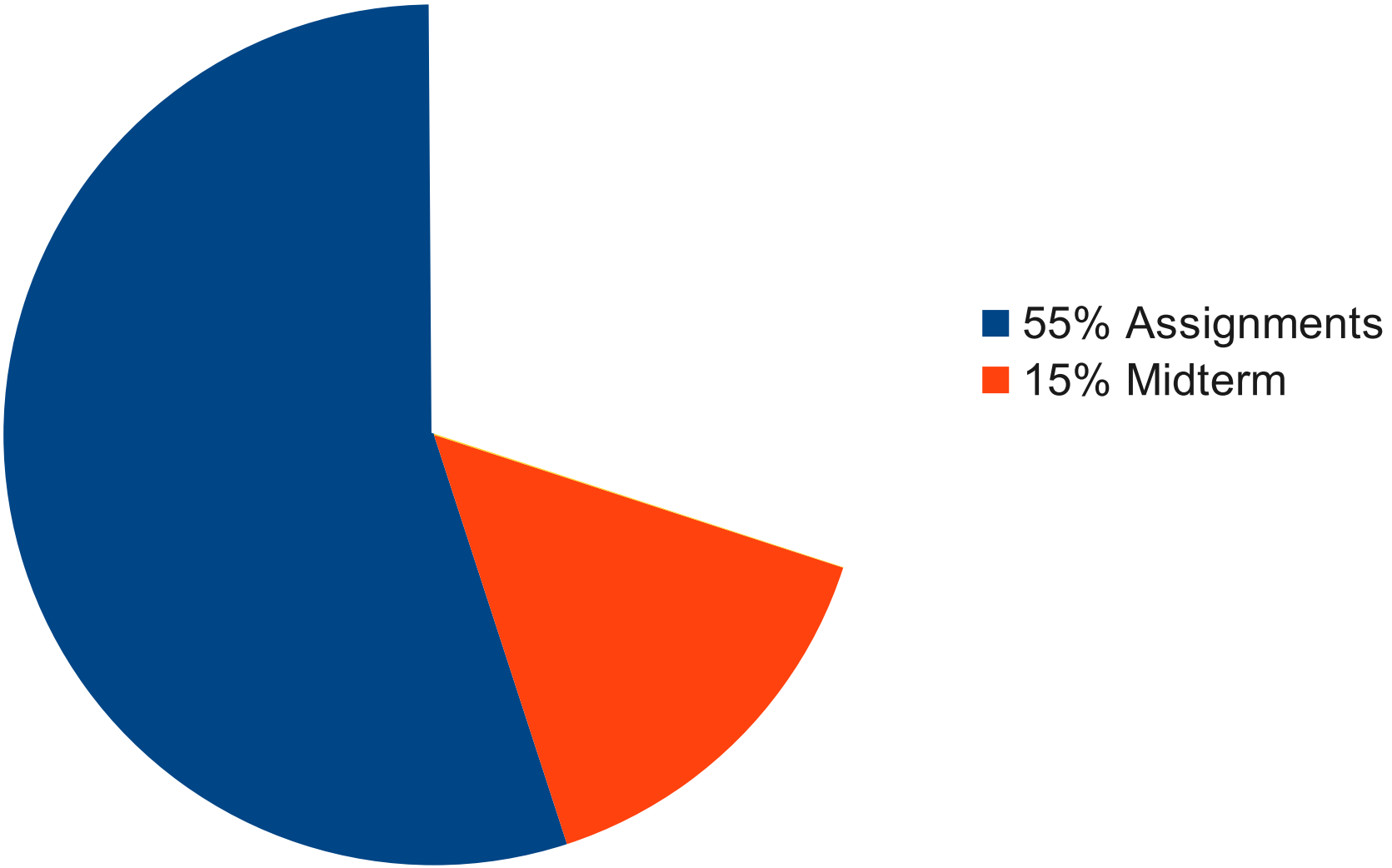
Grading Policies



Grading Policies

7 Programming Assignments

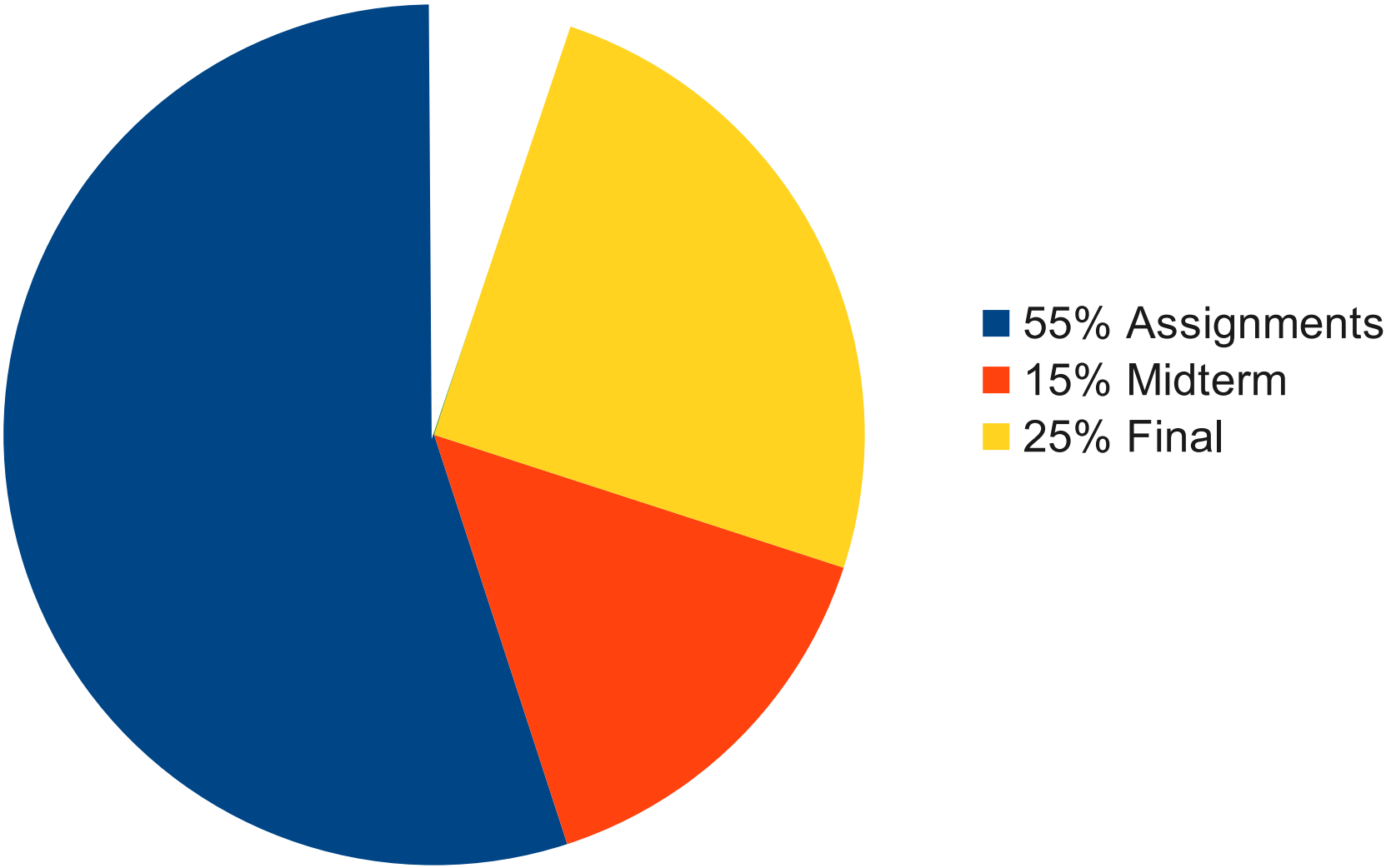
Grading Policies



Grading Policies

Midterm Exam:
Monday, February 13
7:00PM – 9:00PM

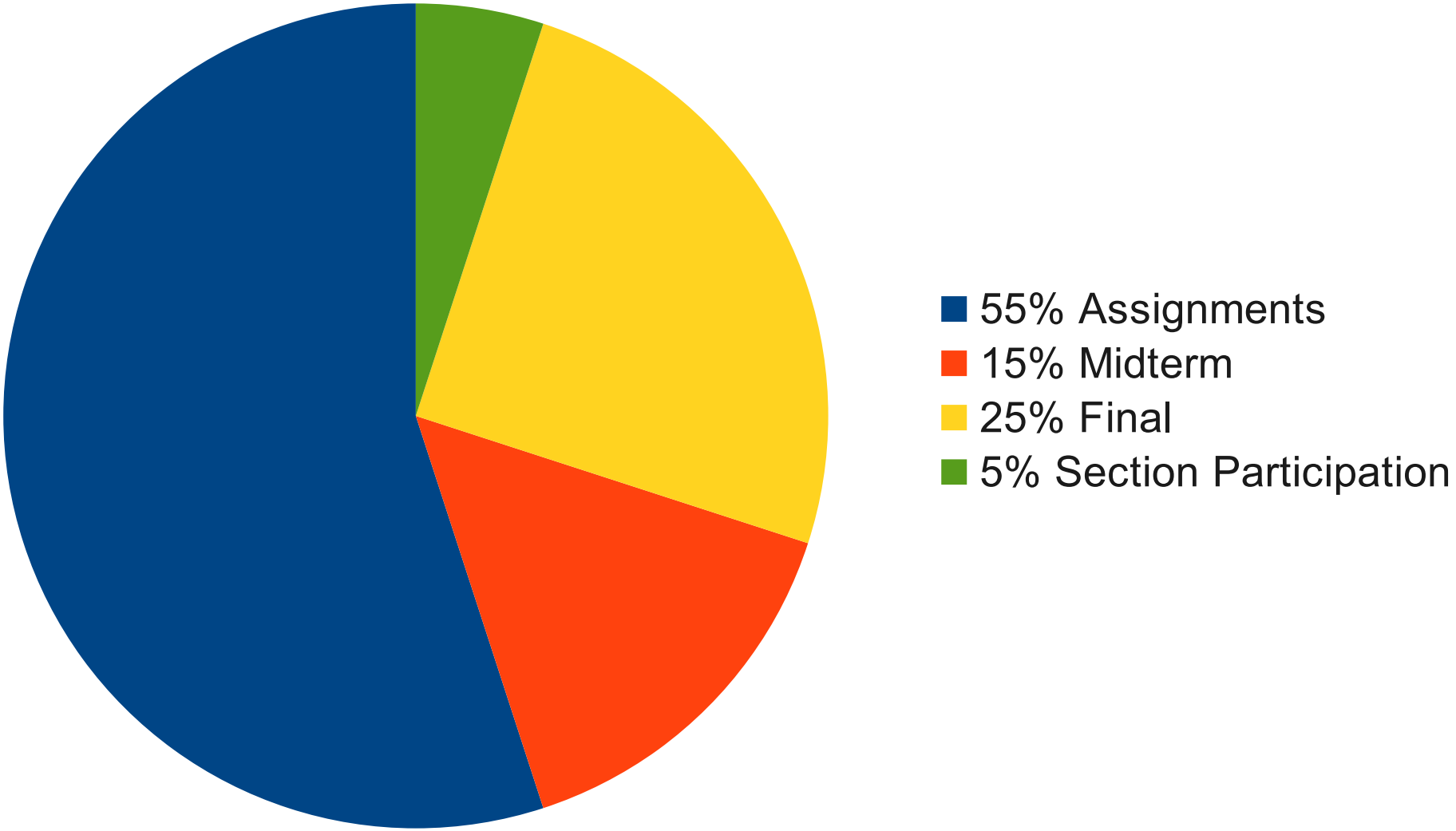
Grading Policies



Grading Policies

Final Exam:
Wednesday, March 21
12:15PM – 3:15PM

Grading Policies

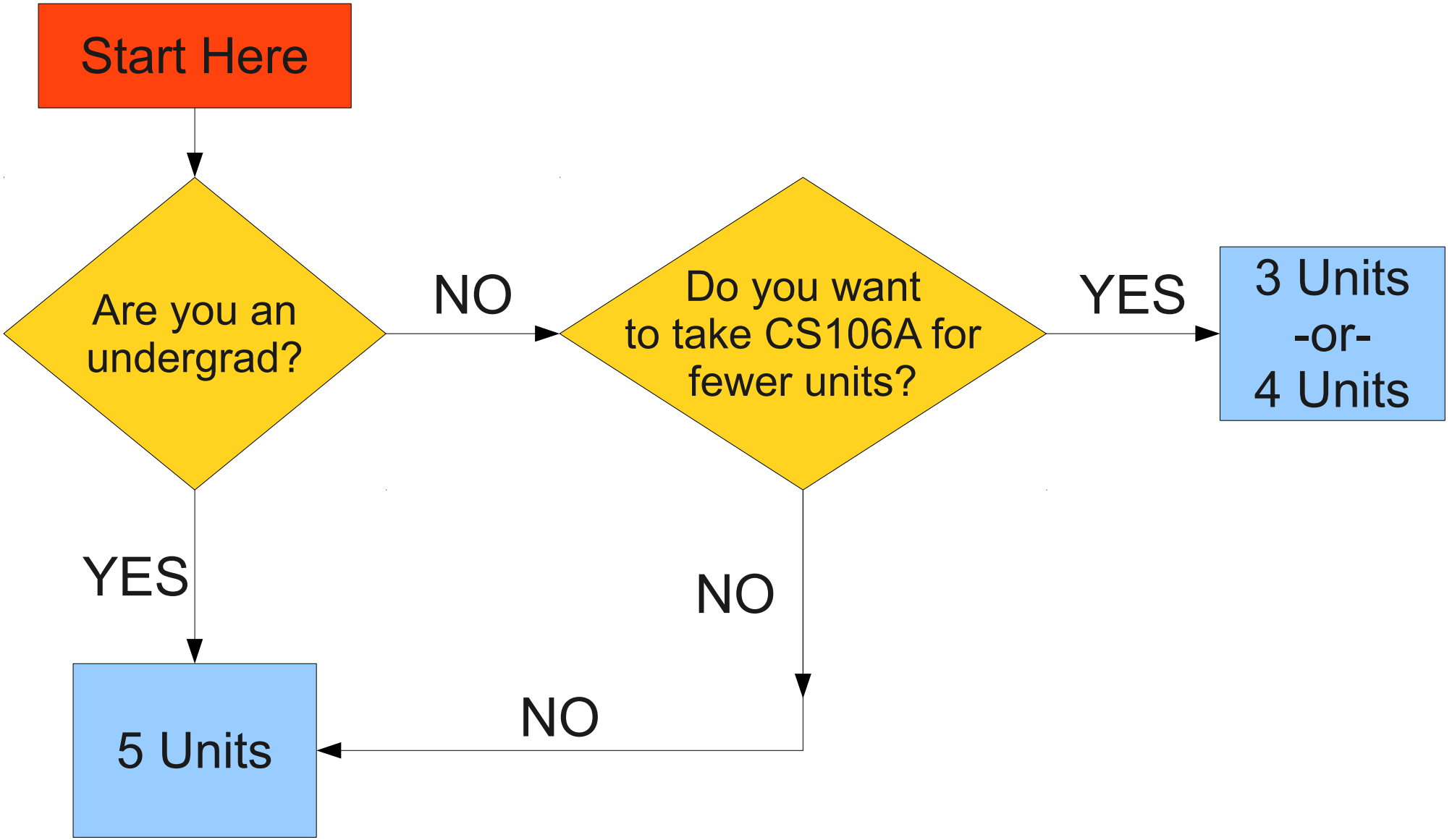


Discussion Sections

- Weekly discussion sections.
- Section attendance is **required** in CS106A.
- Sign up between Thursday, January 12 at 5:00PM and Sunday, January 15 at 5:00PM at

  http://cs198.stanford.edu/section
- Do not enroll through Axess; everything will be handled through the above link.

The CS106A Units Flowchart



A Word on the Honor Code...

A Word on the Honor Code...

- Feel free to discuss general ideas with other students, but **do not** share any programs or code (text of the programs).
- **Cite all sources** you use and everyone you collaborated with.
- This is **not** an exhaustive list; please see Handout #03 for a full discussion of the Honor Code.

On a Happier Note...

- There are 38 hours a week where we're available to help you!
- Section leaders and course helpers staff the Tresidder LaIR Sunday – Thursday, 6PM – Midnight.
  - Starts next Tuesday.
- Keith and Jeremy hold office hours each week.
  - See Handout #00 for details.

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,
"SIGACT trying to get children excited about CS"

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

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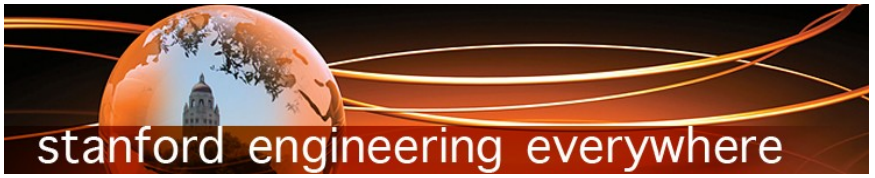
stanford engineering everywhere

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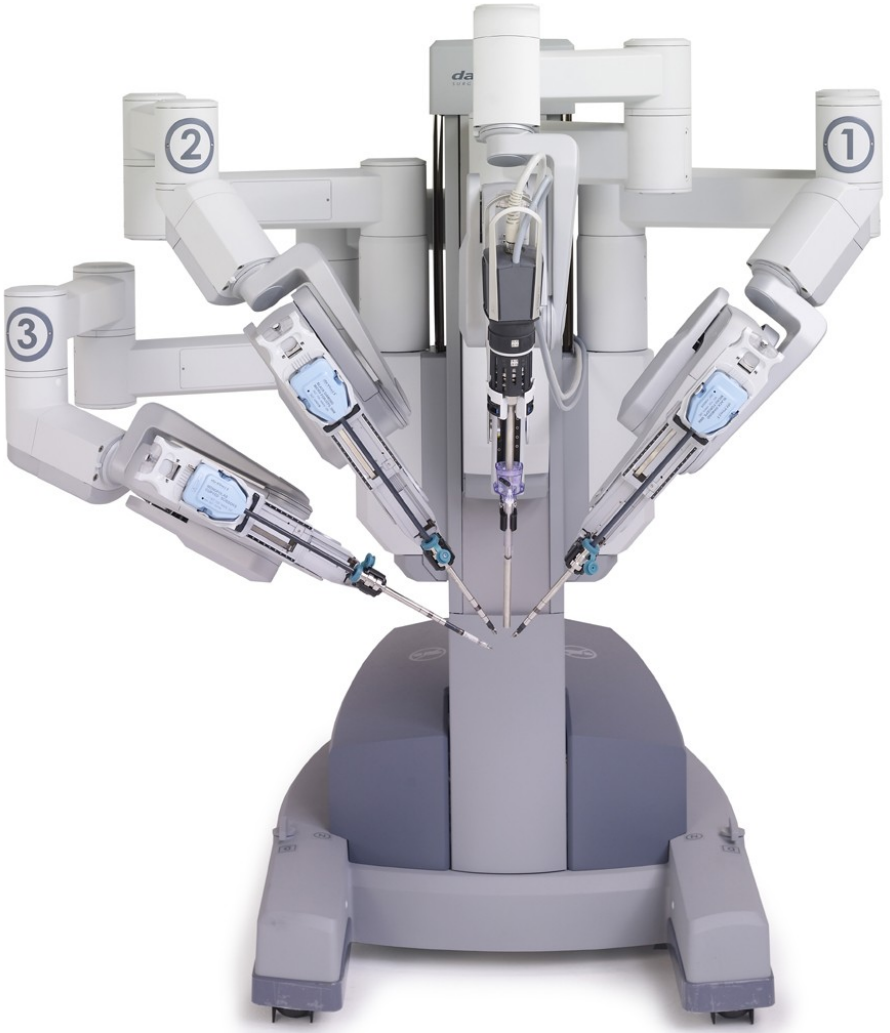

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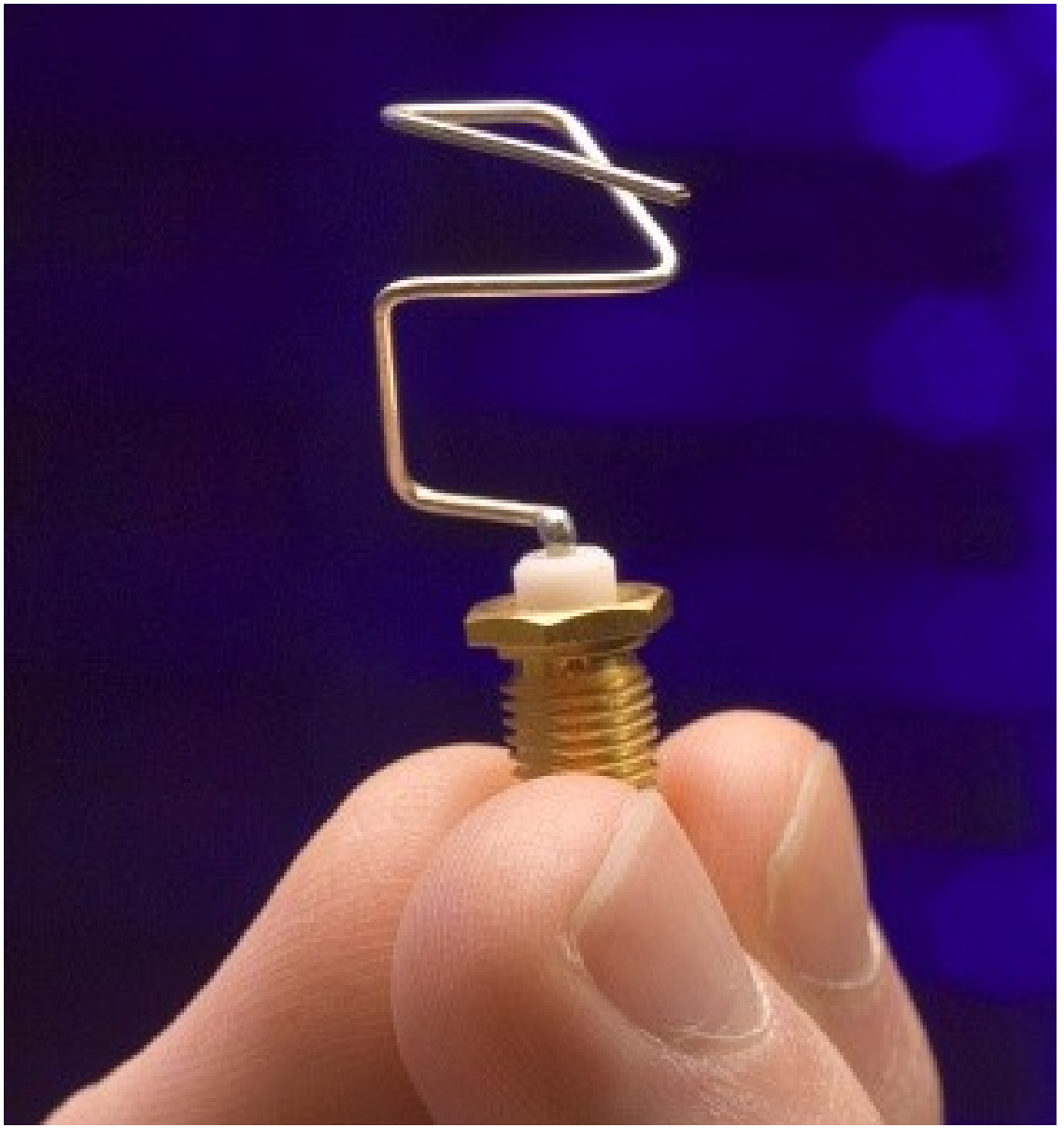

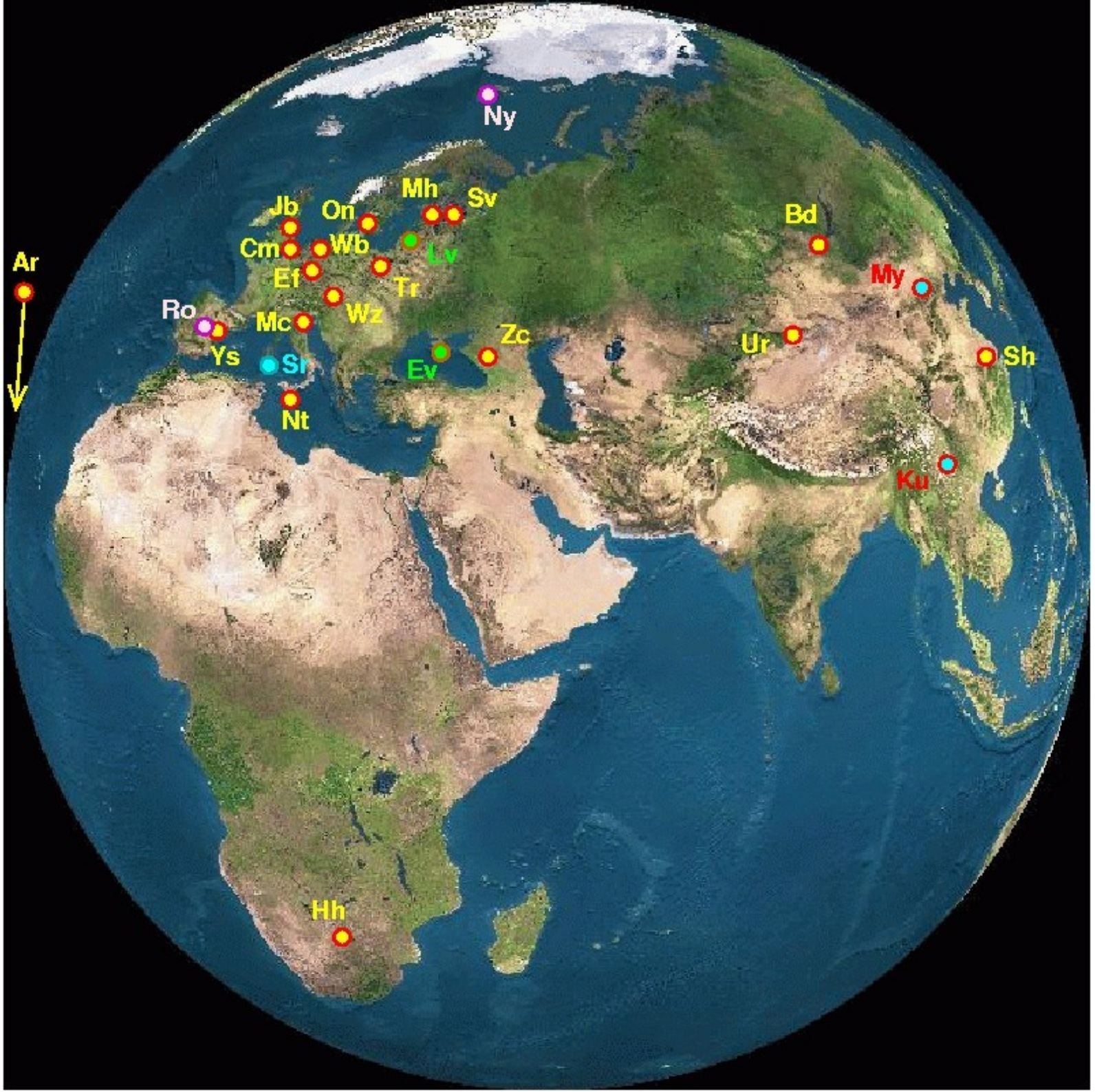
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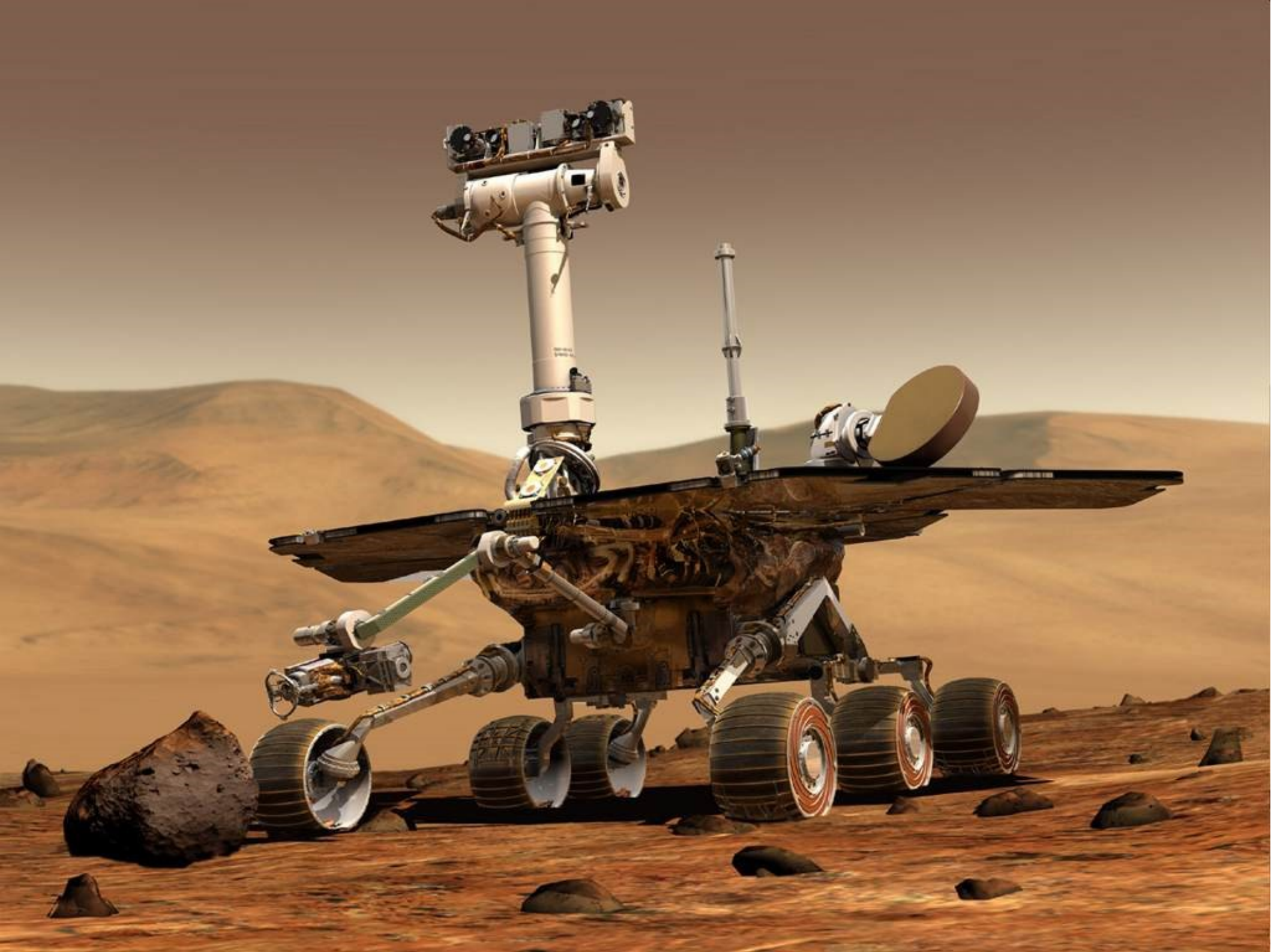

All of these projects occurred within the last ten years.

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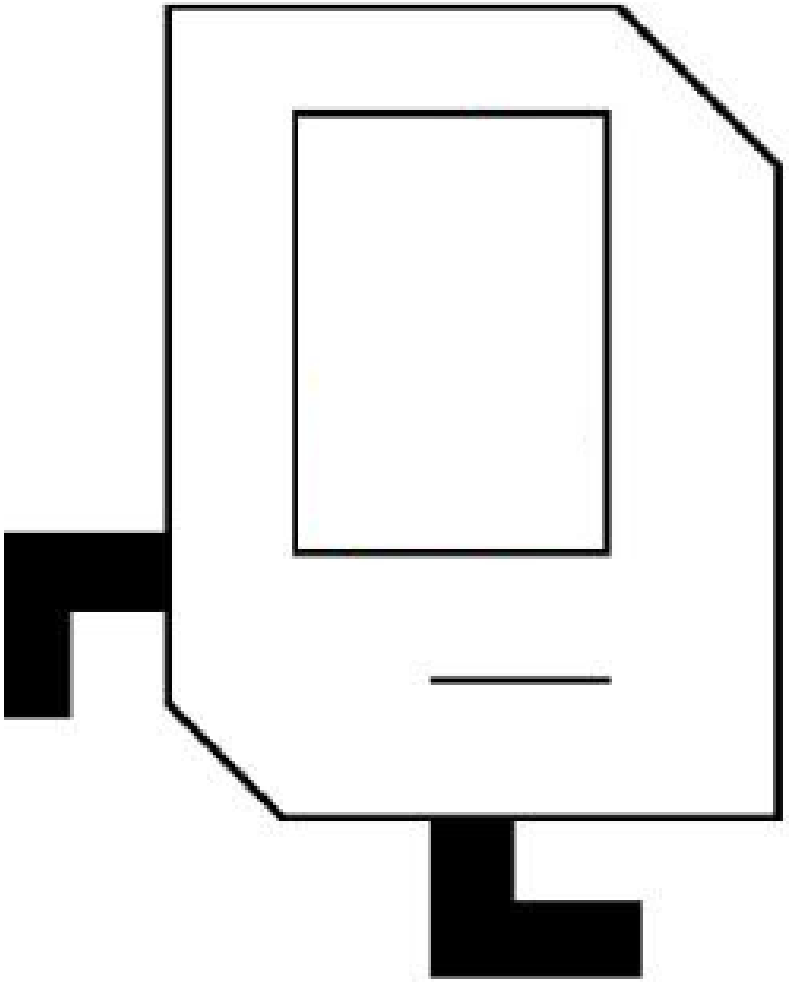
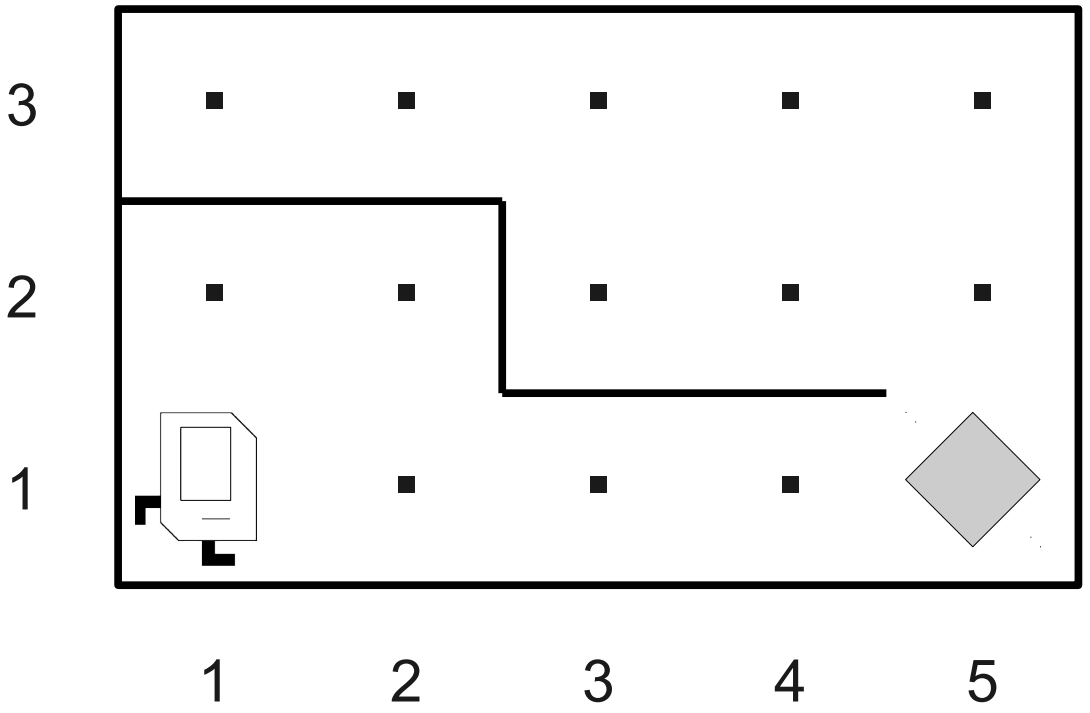
Goals for this Course

- **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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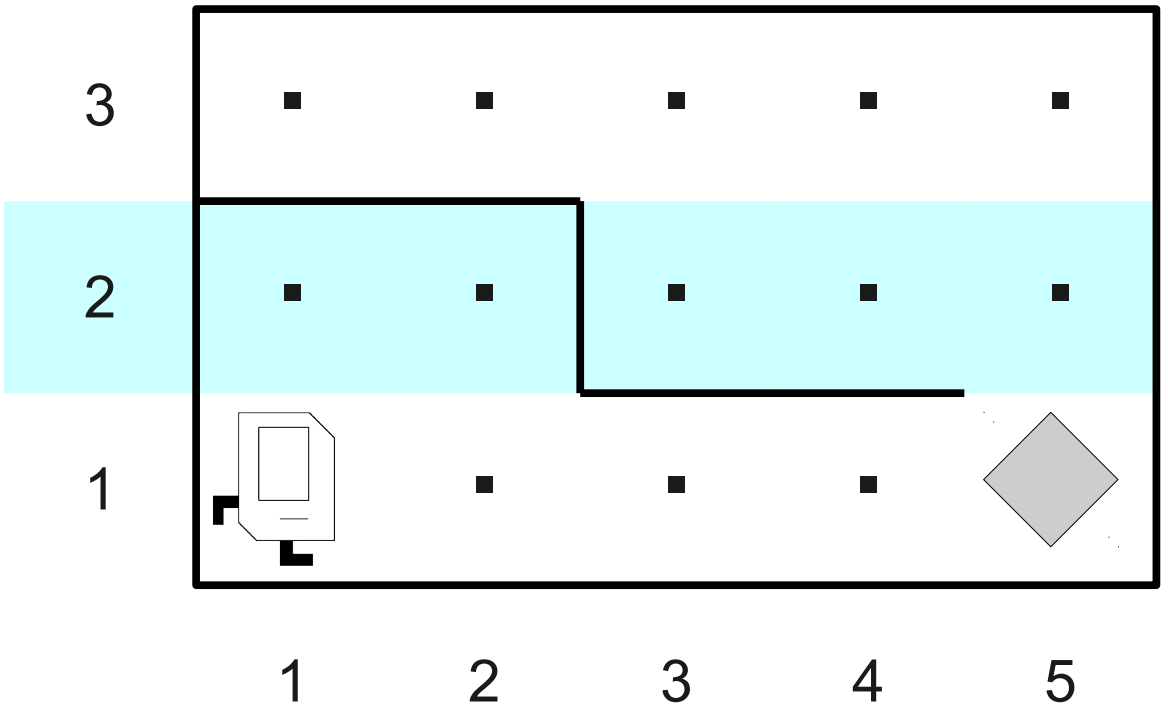

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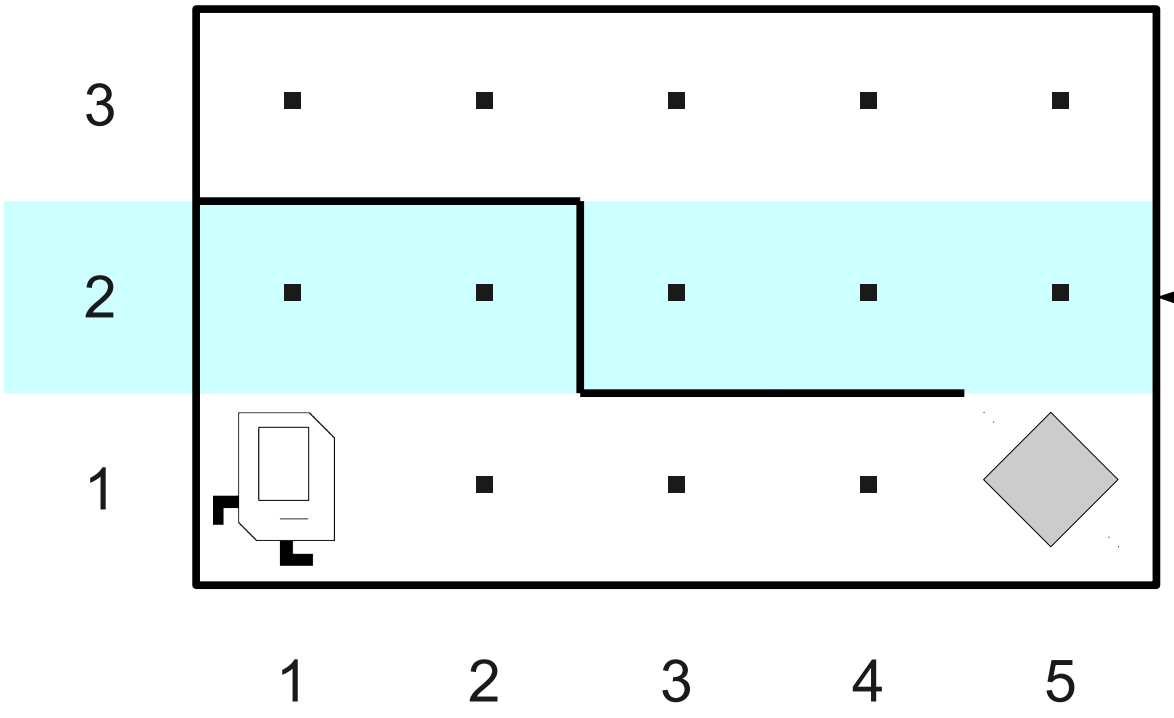
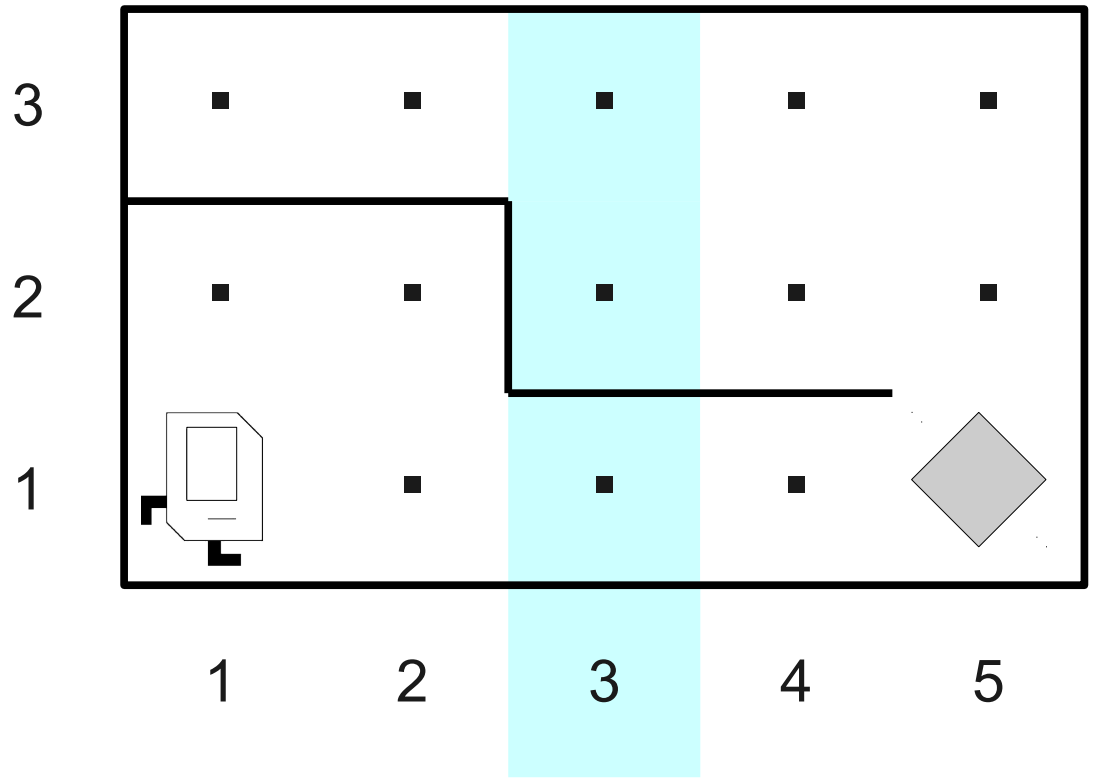


Each row is called a street.

Karel's World



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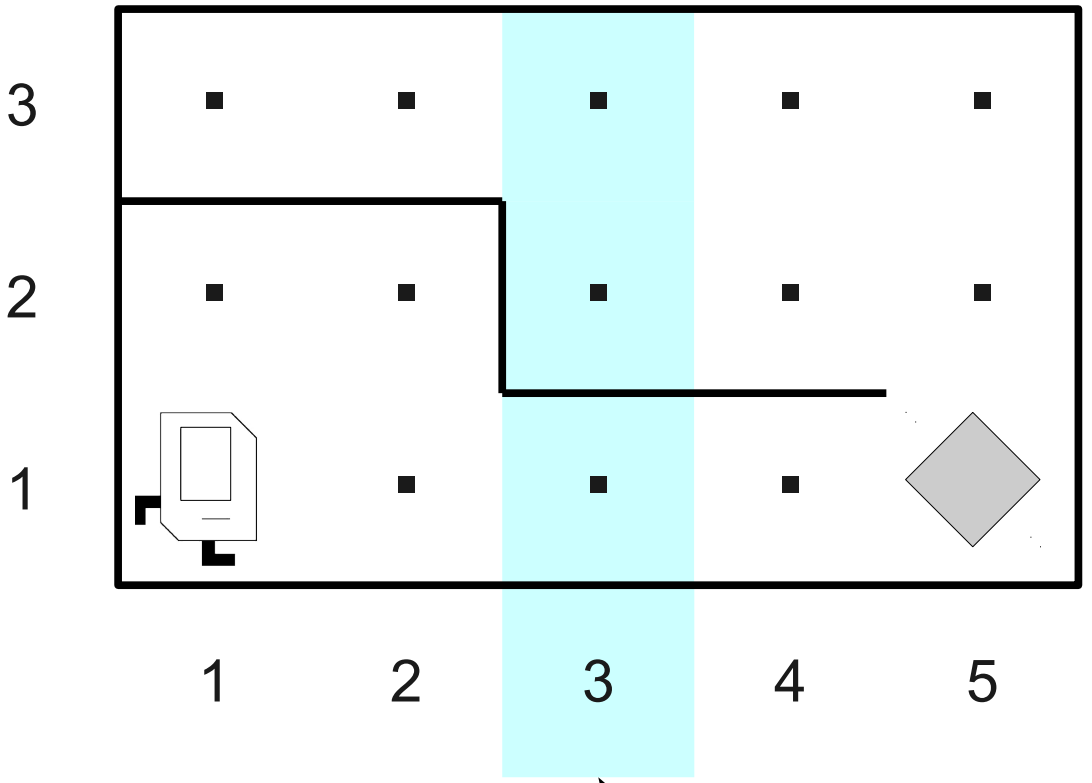
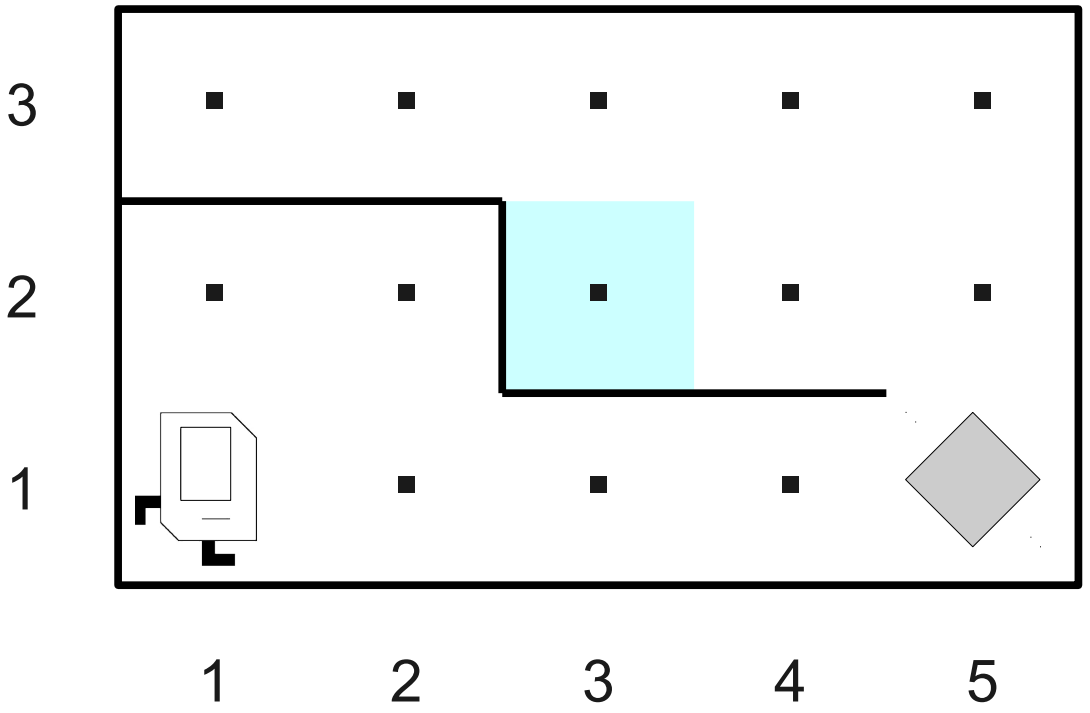


Each column is called an avenue.

Karel's World



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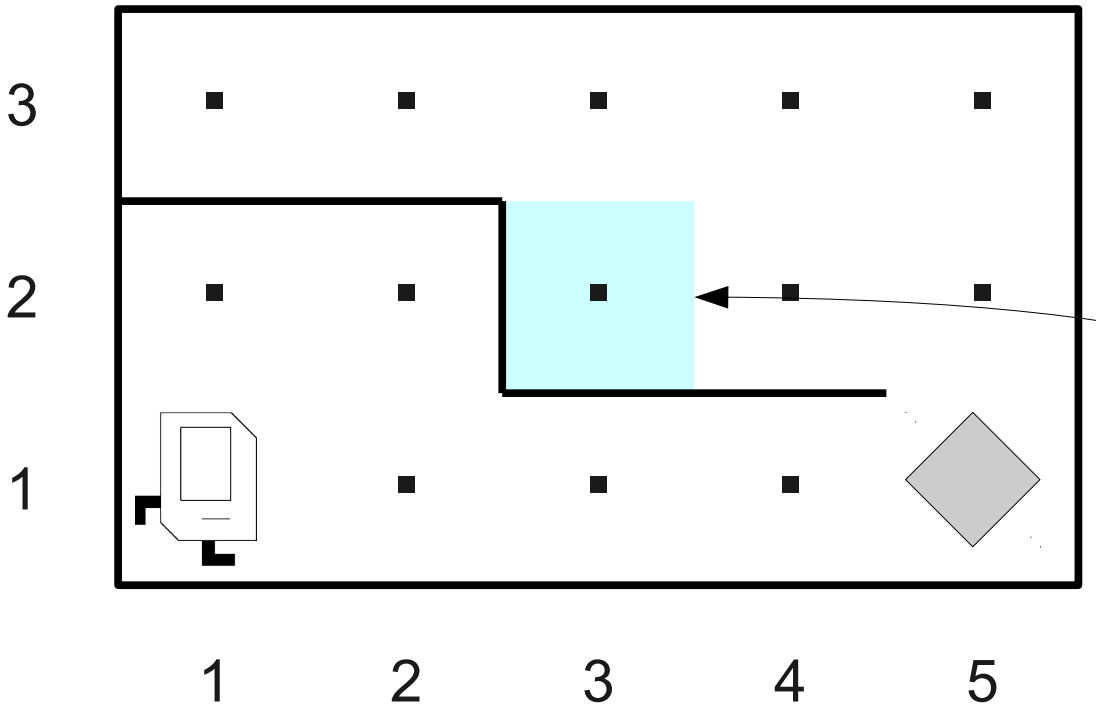
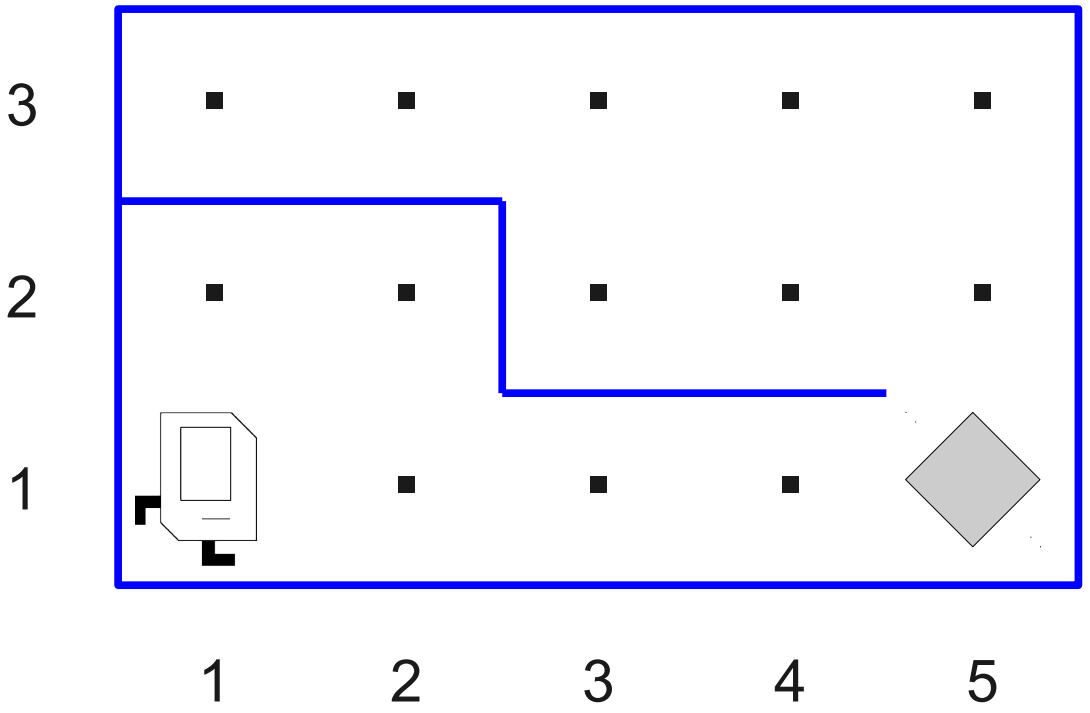


The intersection of a street and an avenue is a corner.

Karel's World



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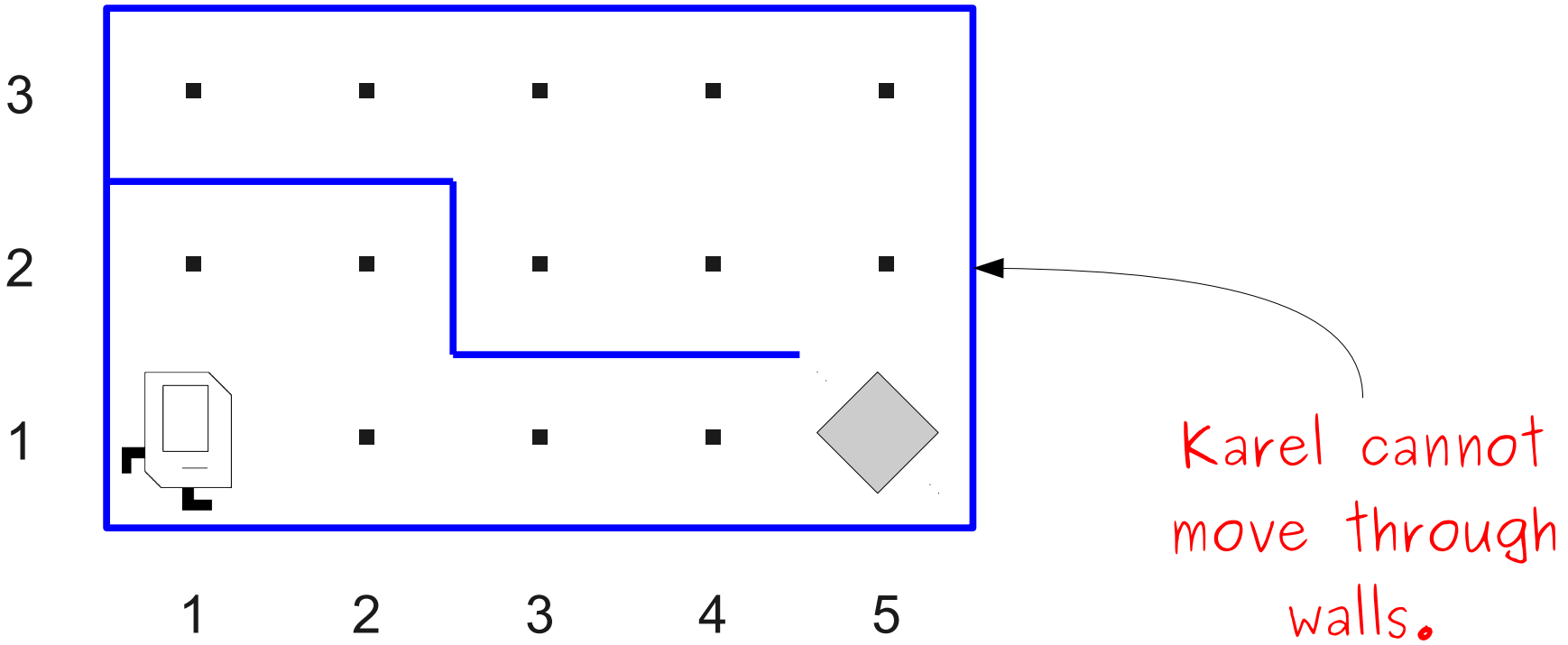

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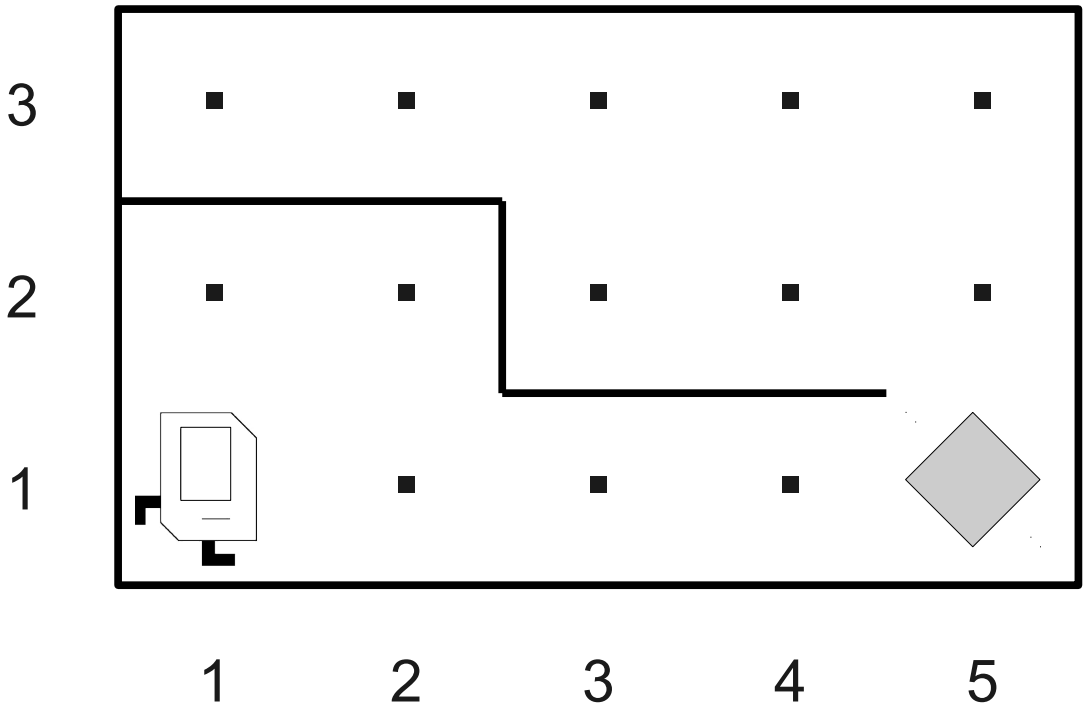

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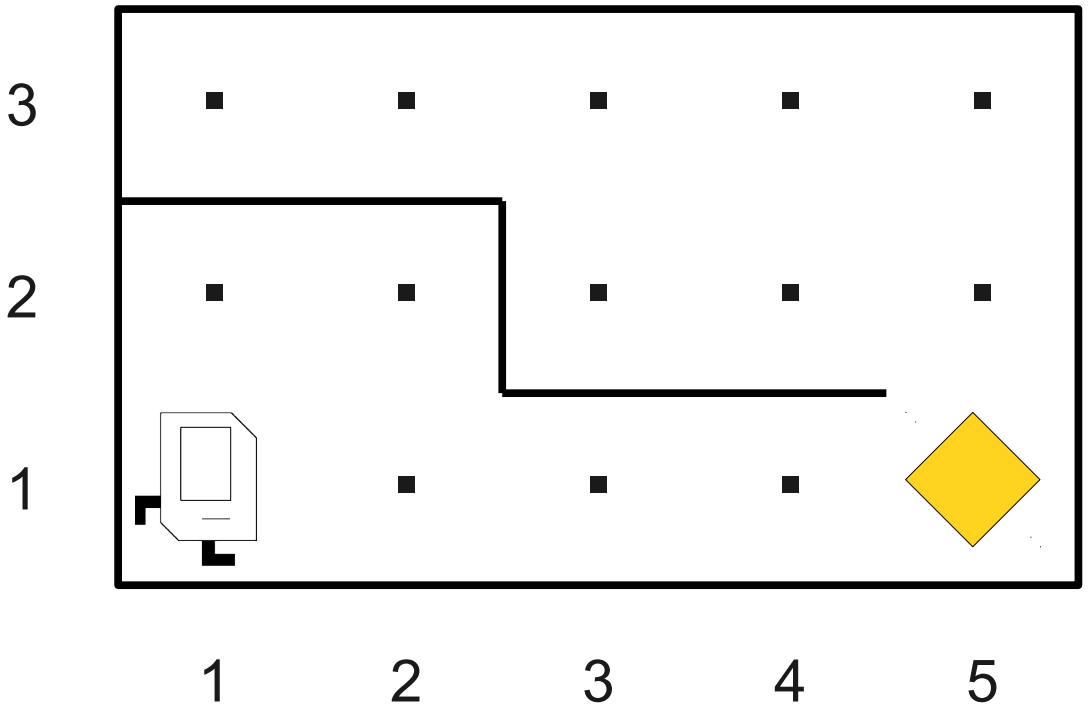

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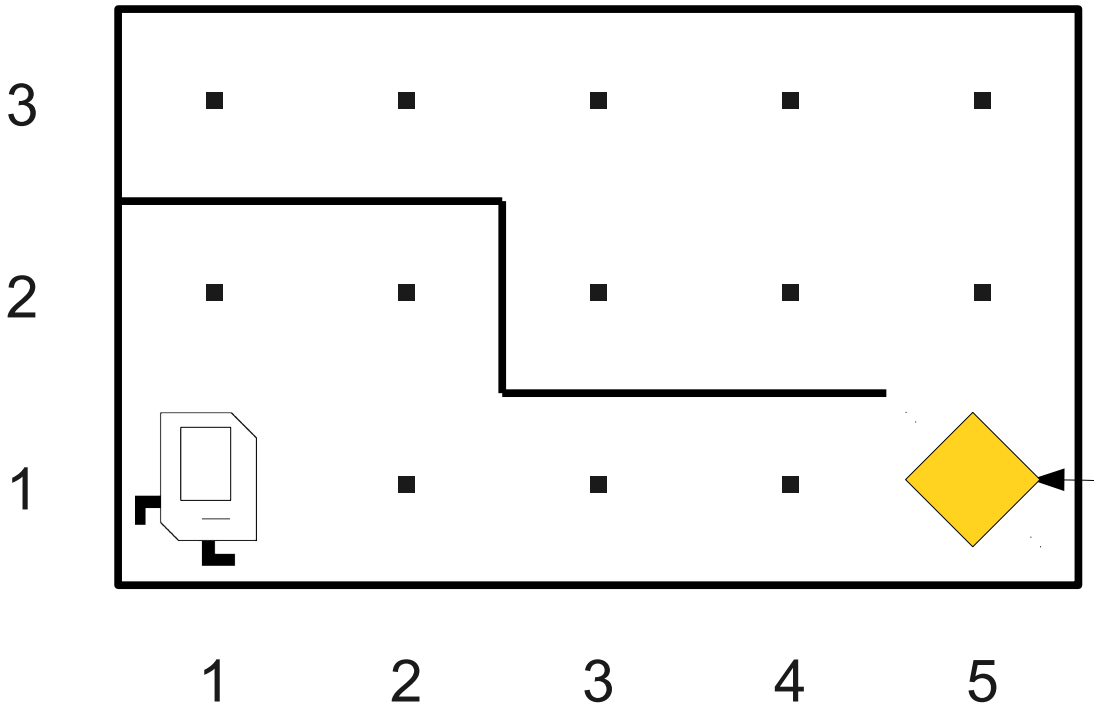
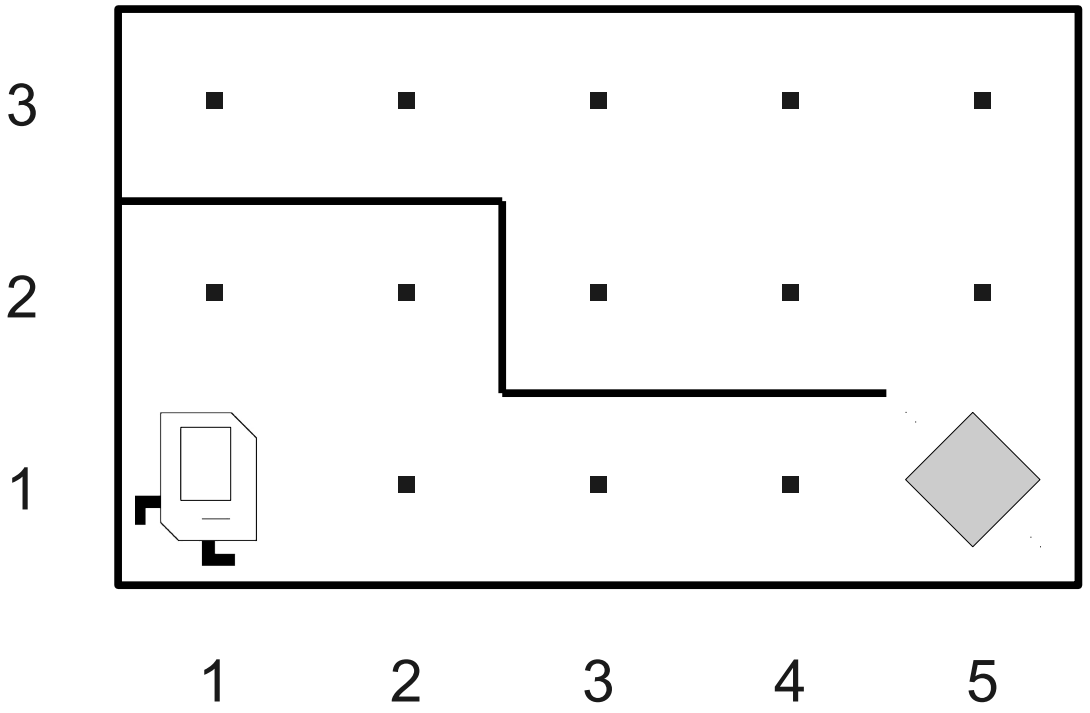


Beepers mark locations in Karel's world.

Karel's World



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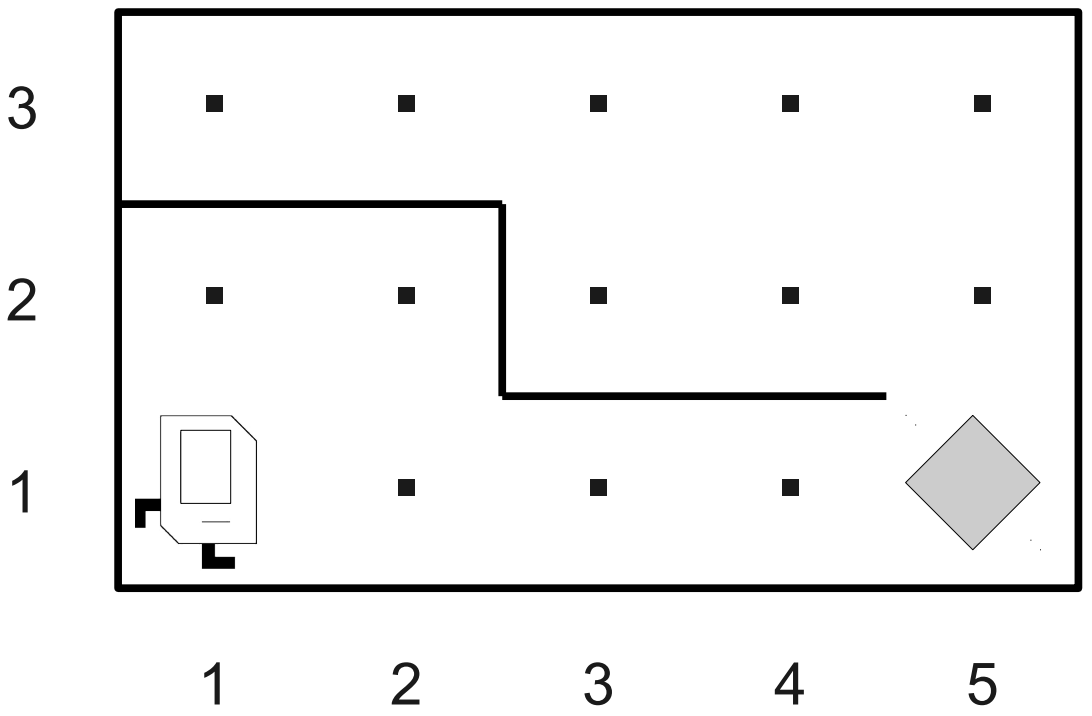
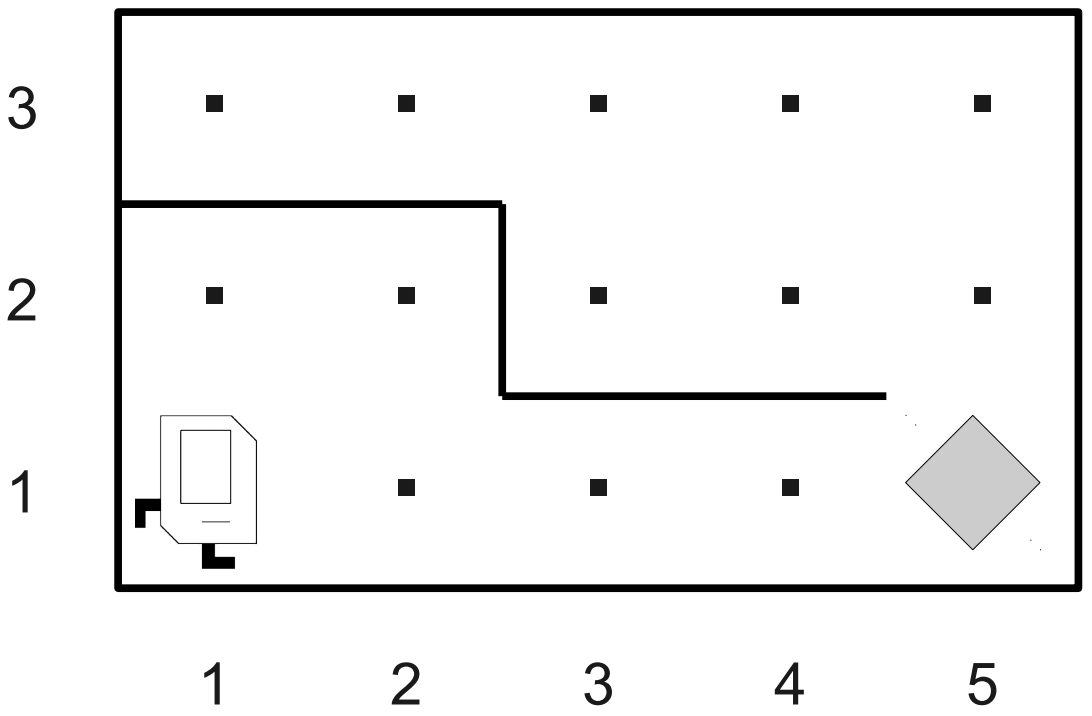


Karel Commands

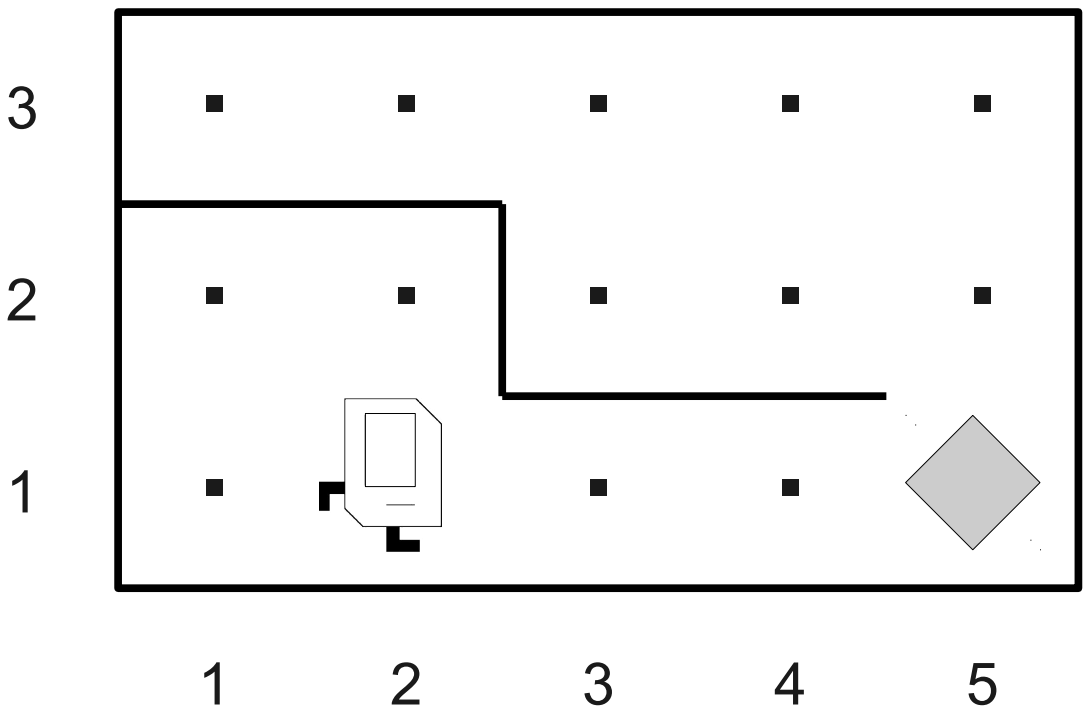
Karel's World



Karel Commands

move

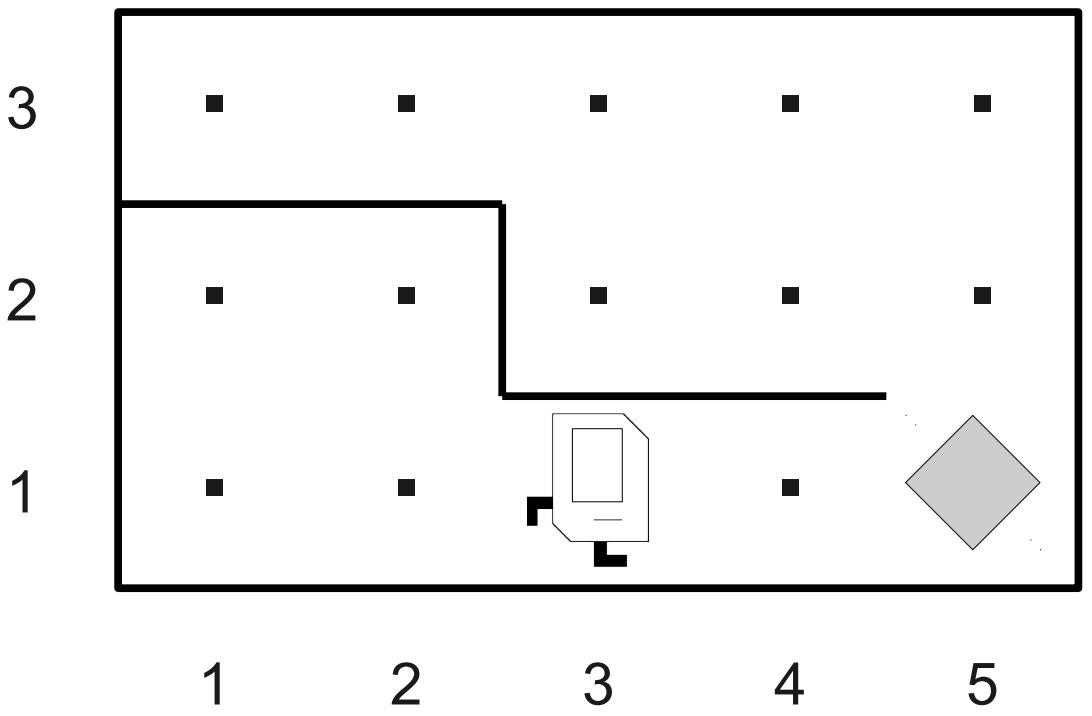
Karel's World



Karel Commands

move

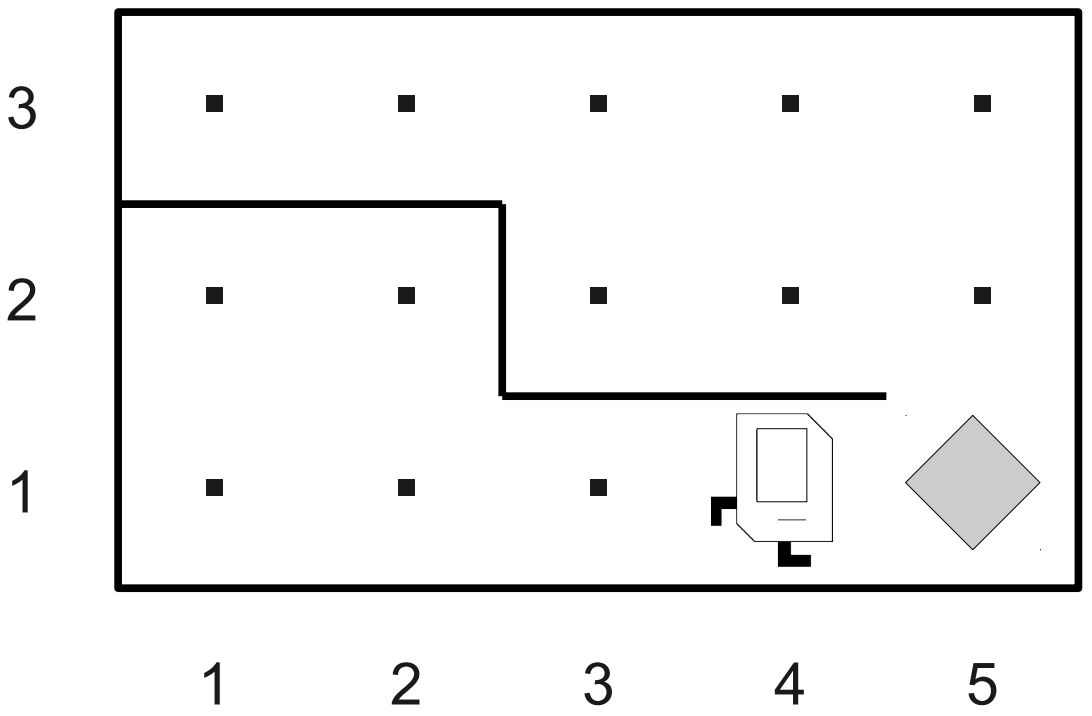
Karel's World



Karel Commands

move

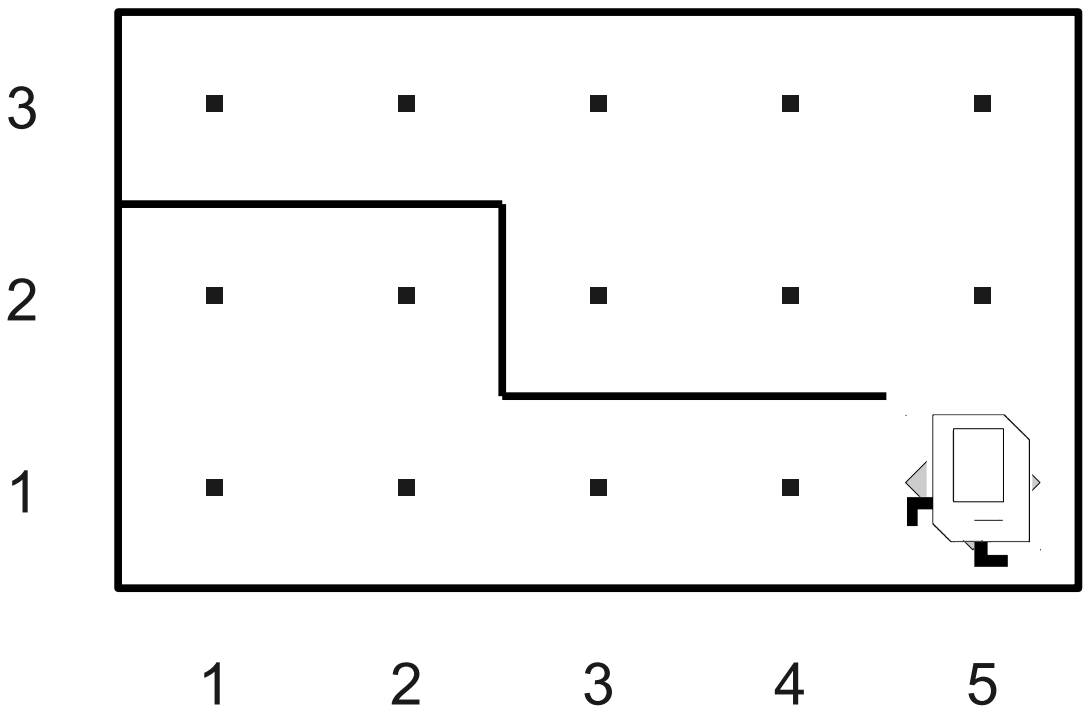
Karel's World



Karel Commands

move

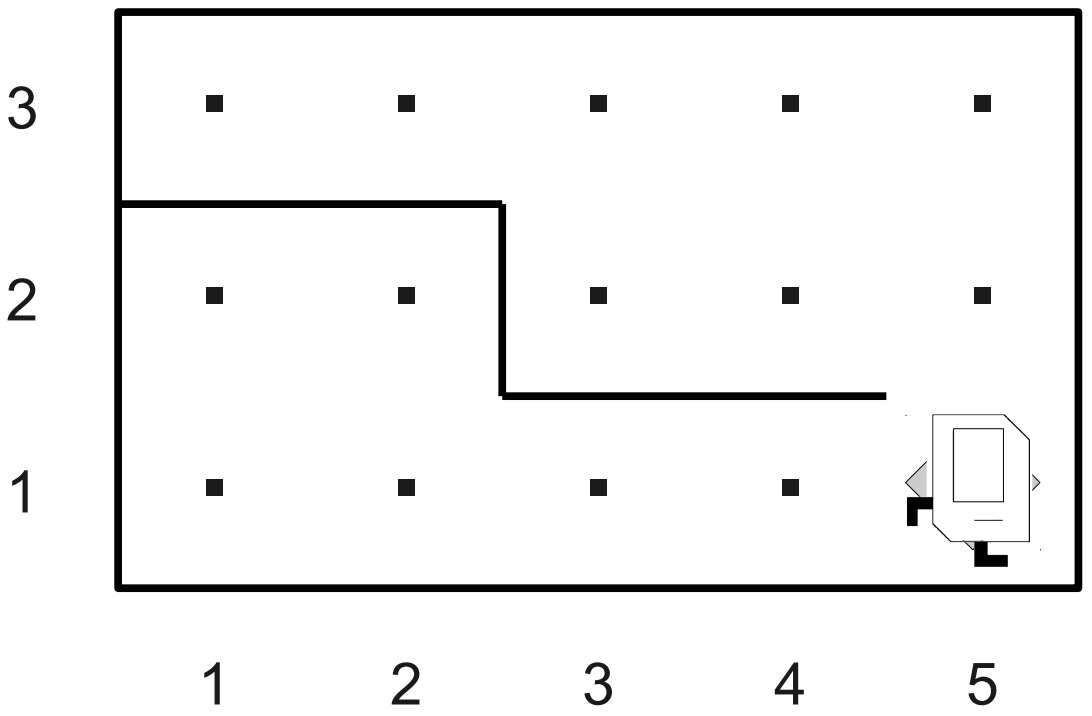
Karel's World



Karel Commands

move

Karel's World

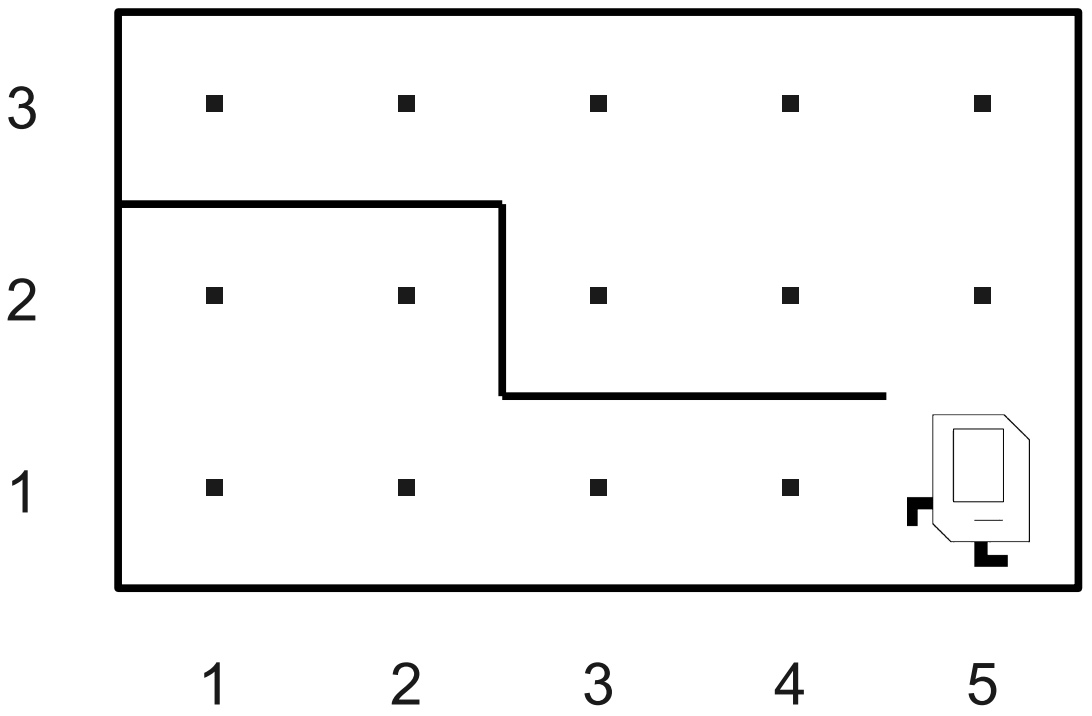


Karel Commands

move

pickBeeper

Karel's World

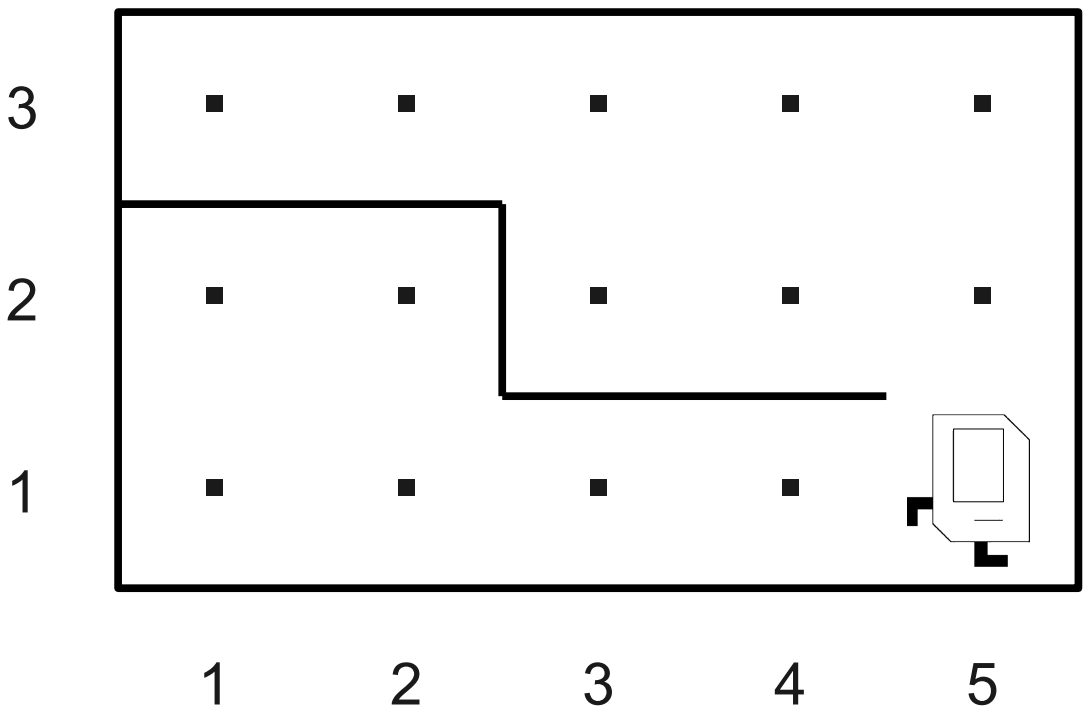


Karel Commands

move

pickBeeper

Karel's World



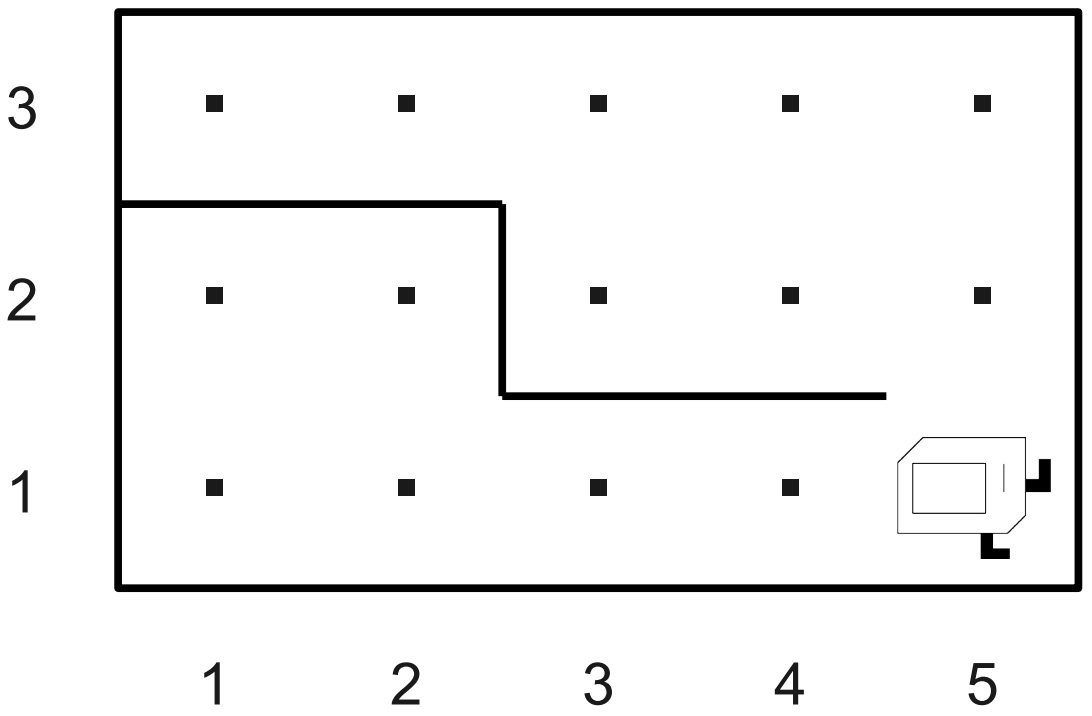
Karel Commands

move

pickBeeper

turnLeft

Karel's World



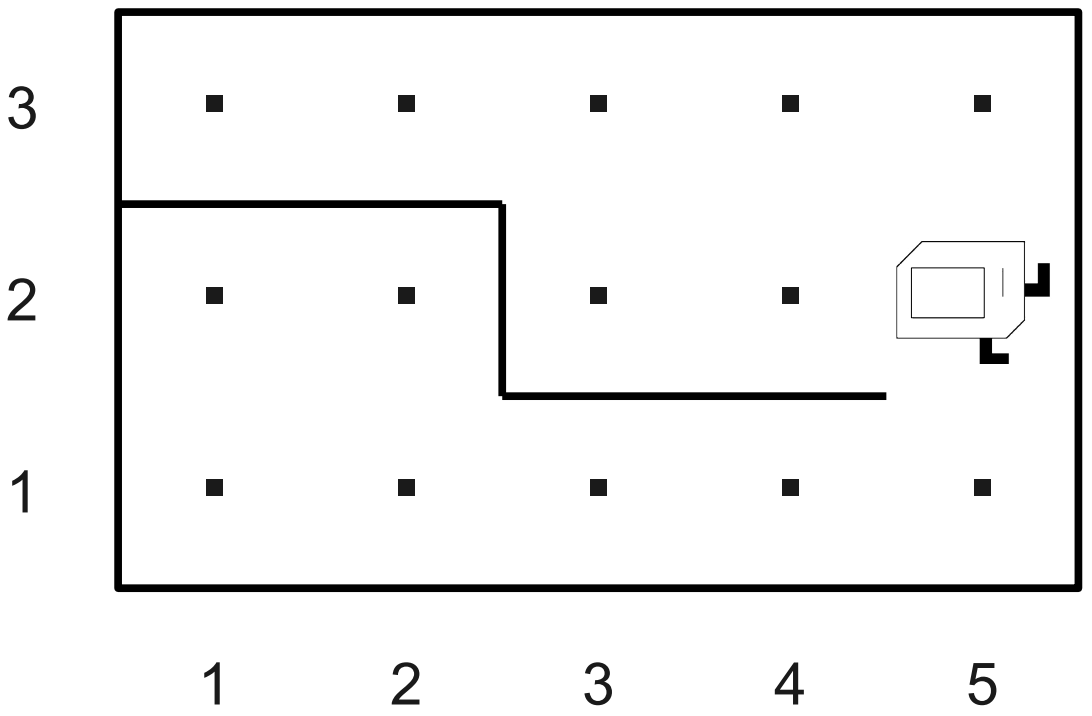
Karel Commands

move

pickBeeper

turnLeft

Karel's World



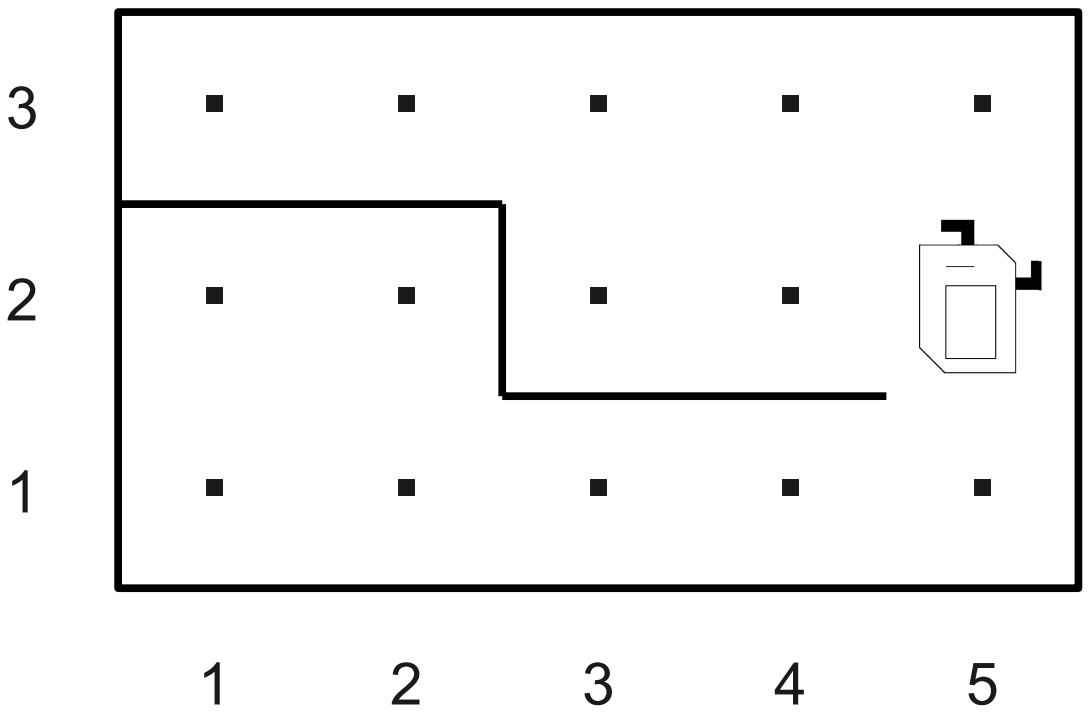
Karel Commands

move

pickBeeper

turnLeft

Karel's World



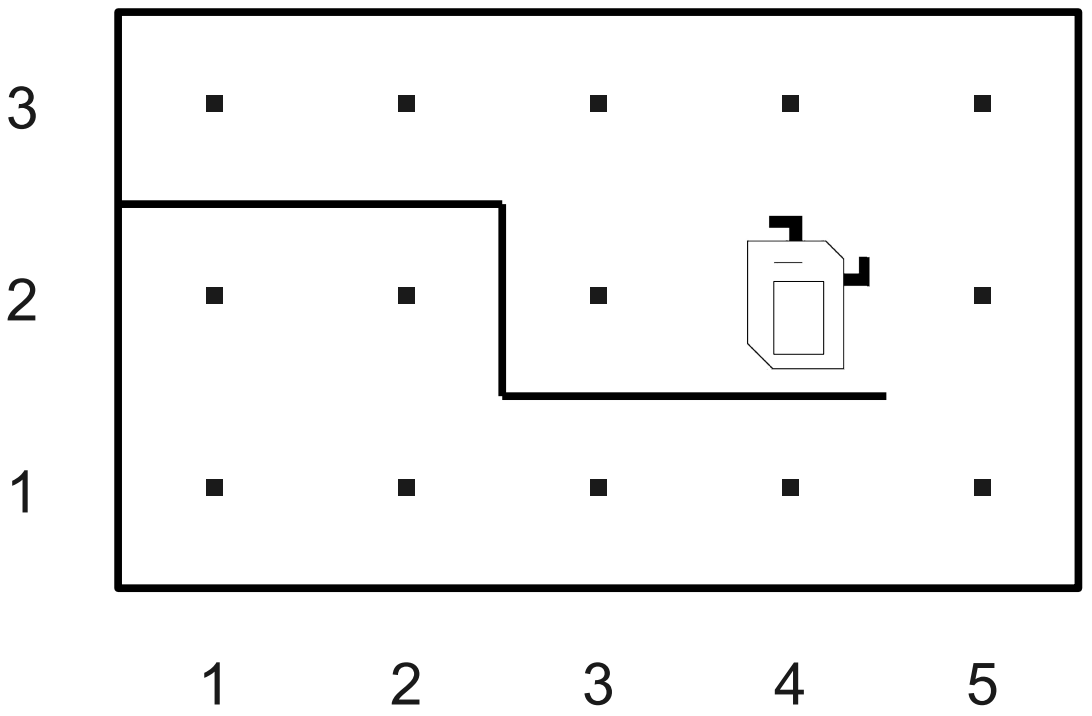
Karel Commands

move

pickBeeper

turnLeft

Karel's World



Karel Commands

move

pickBeeper

turnLeft

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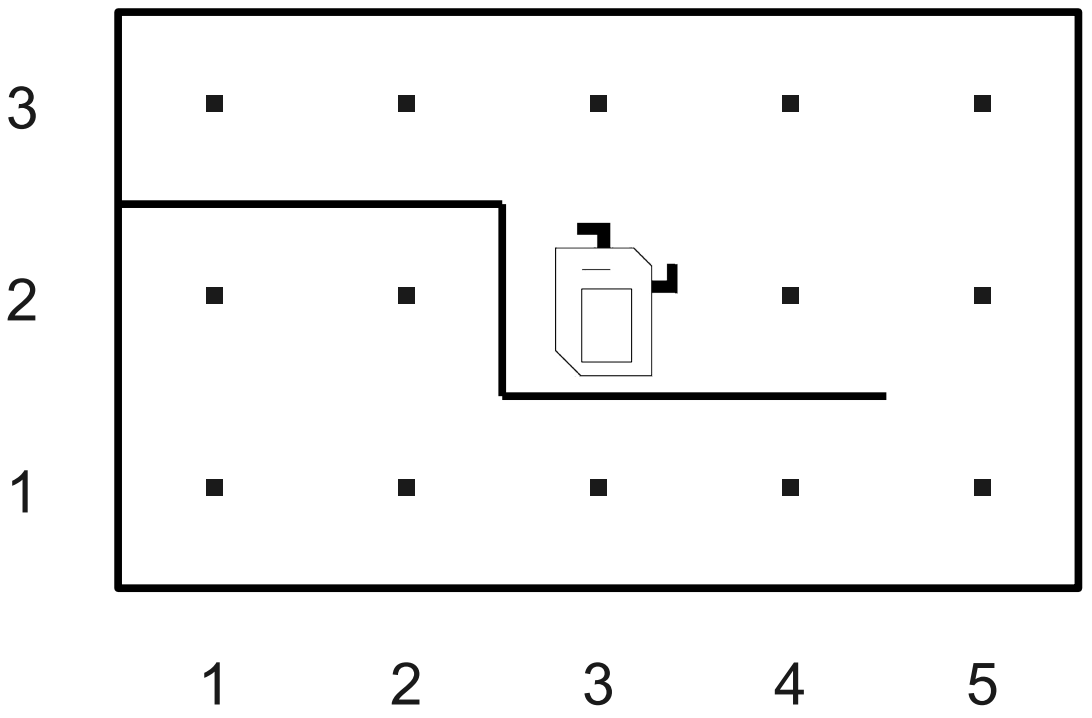

Karel Commands

move

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turnLeft

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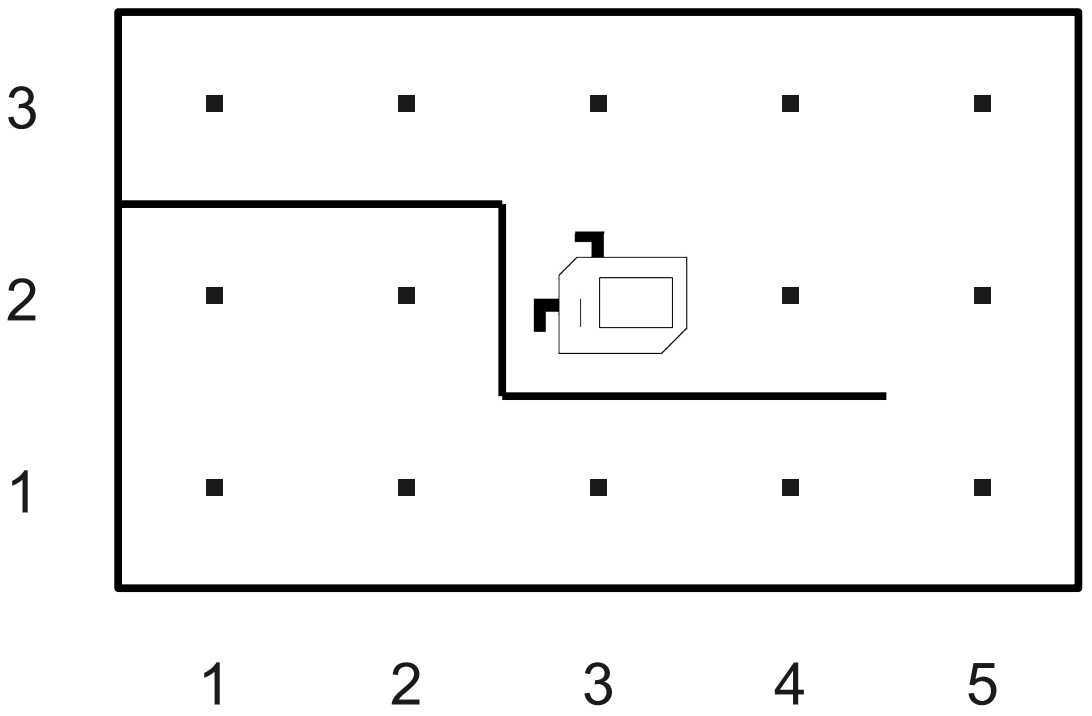

Karel Commands

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pickBeeper

turnLeft

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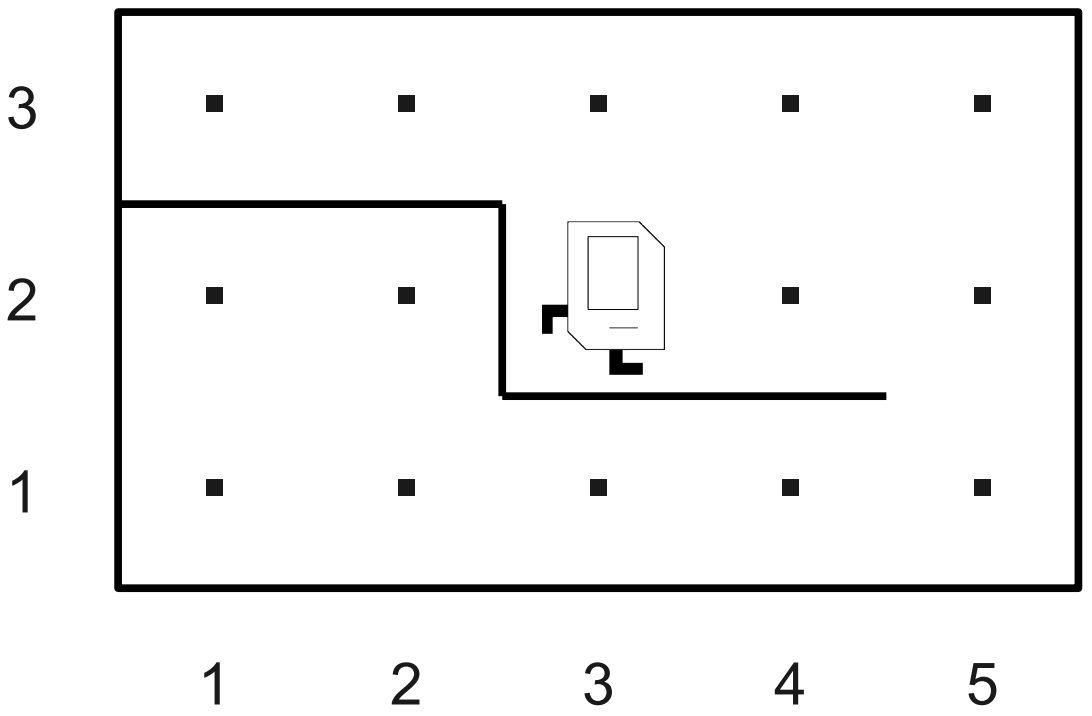

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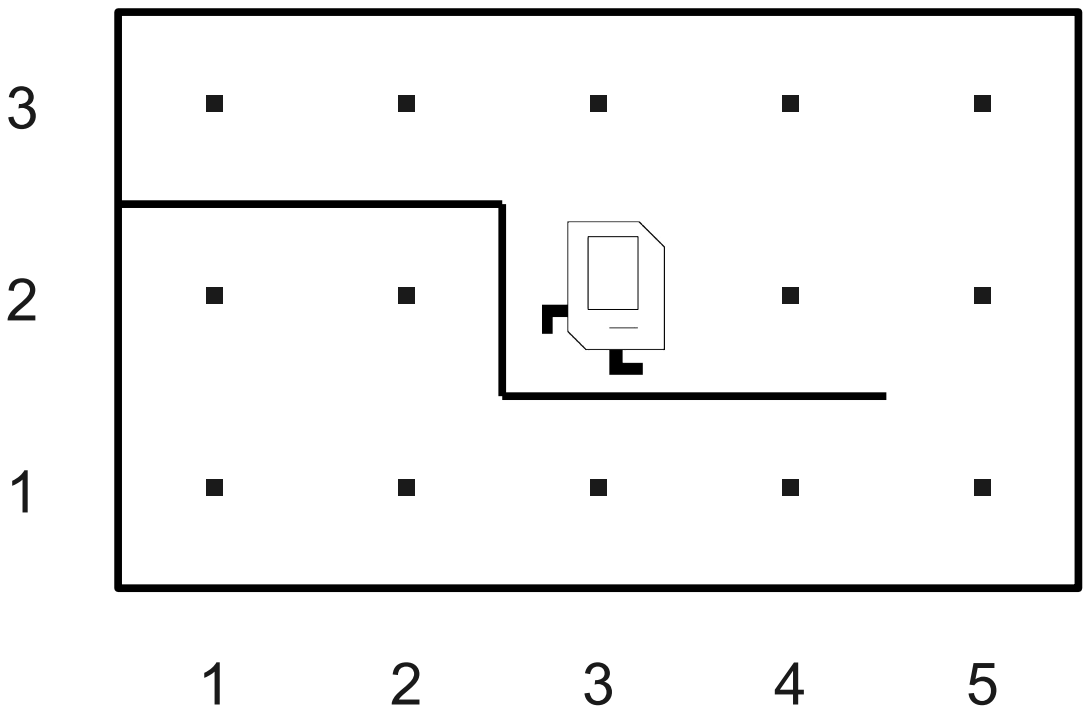

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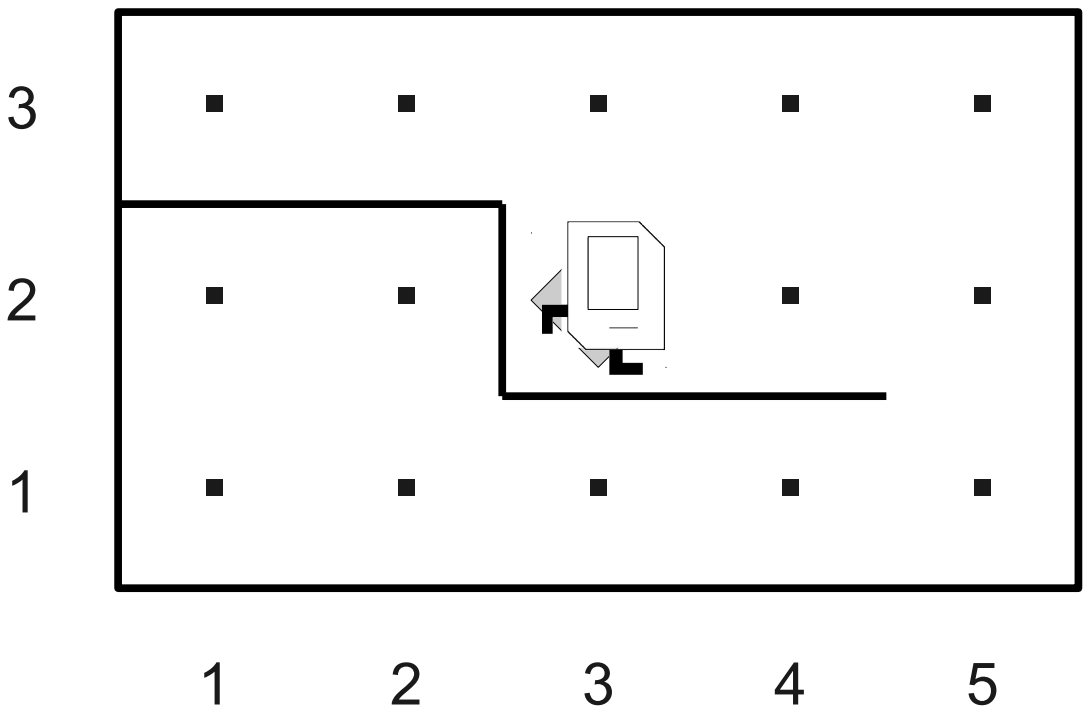
putBeeper

Karel's World



Karel Commands

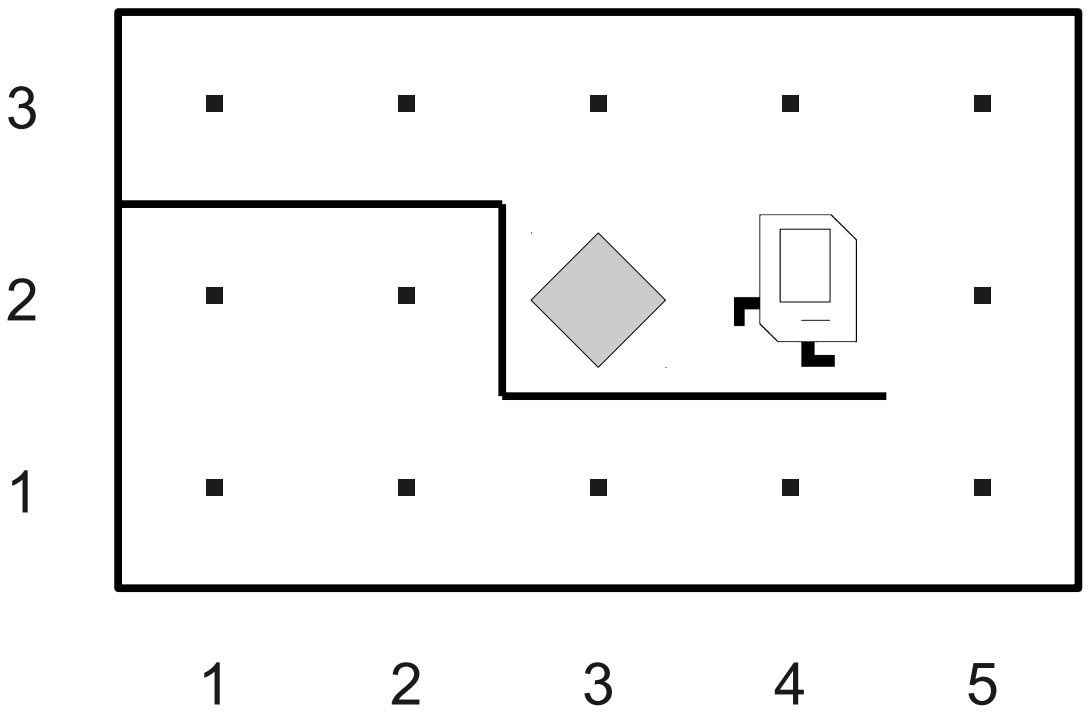
move

pickBeeper

turnLeft

putBeeper

Karel's World



Karel Commands

move

pickBeeper

turnLeft

putBeeper

Get Ready!

It's Time for Your Very First Karel Program!