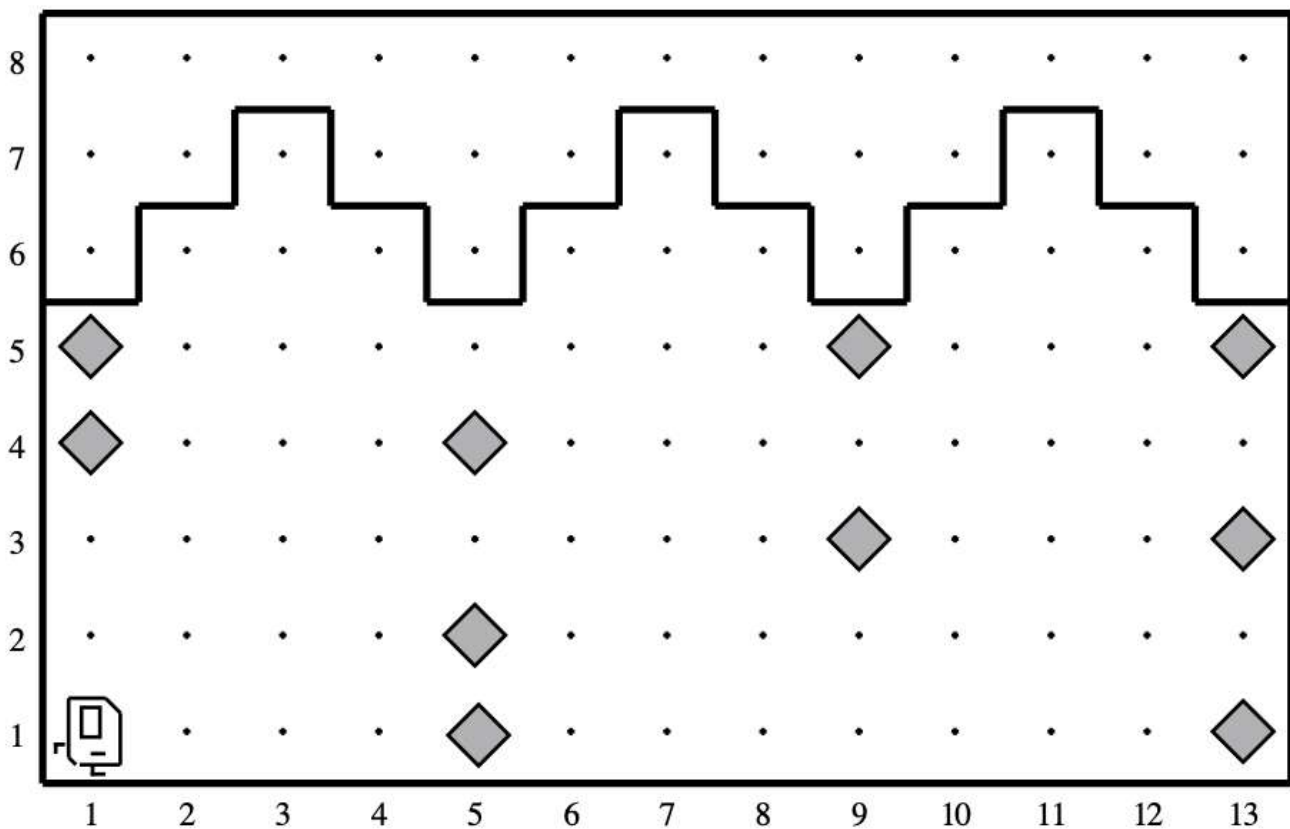


Code in Place 2021 – Lessons

edstem.org/us/courses/10000/lessons/12423/slides/60780

Q6: Stone Mason Karel

Your next task is to repair the damage done to the Stanford Main Quad in the 1989 Loma Prieta earthquake. In particular, Karel should repair a set of arches where some of the stones (represented by beepers, of course) are missing from the columns supporting the arches, as illustrated in the figure below.

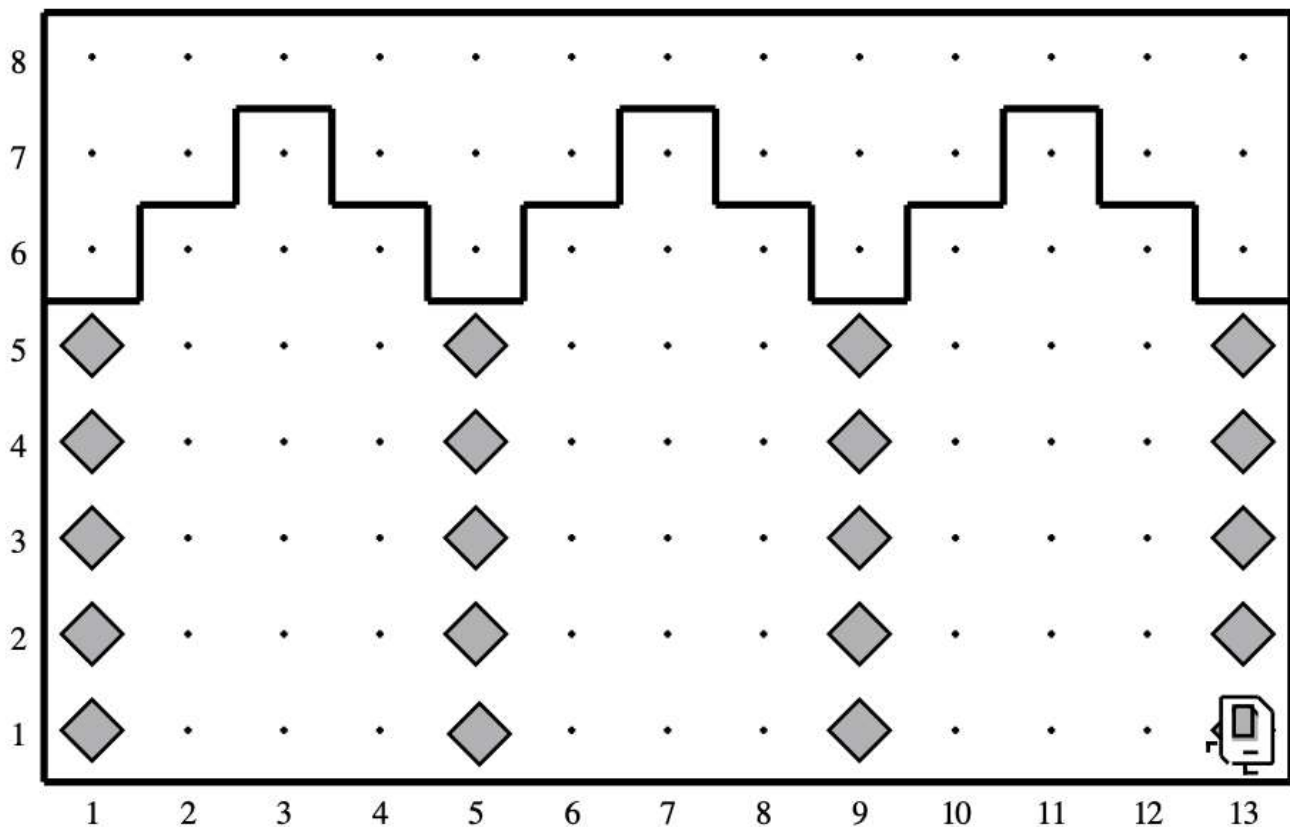


Your program should work on the world shown above, but it should be general enough to handle any world that meets the basic conditions outlined at the end of this problem.

There are three example worlds here, and your program should work correctly in all of them. You can toggle between them by changing the very last line in the file from `run_karel_program('SampleQuad1.w')` to `run_karel_program('SampleQuad2.w')` or `run_karel_program('SampleQuad3.w')` -- you will likely need to press Run (it's fine if you do so without any code written) for the world change to take effect.

When Karel is done, the missing stones in the columns should be replaced by beepers, so that the final picture resulting from the initial world shown in Figure 5 would look like the

illustration below.



Karel's final location and the final direction Karel is facing at the end of the run do not matter. Karel may count on the following facts about the world:

- Karel starts at the corner where 1st Avenue and 1st Street meet, facing east, with an infinite number of beepers in Karel's beeper bag. The first column should be built on 1st Avenue.
- The columns are always exactly four Avenues apart, so they would be built on 1st Avenue, 5th Avenue, 9th Avenue, and so on.
- The final column will always have a wall immediately after it. Although this wall appears after 13th Avenue in the example figure, your program should work for any number of beeper columns.
- The top of a beeper column will always be marked by a wall. However, Karel cannot assume that columns are always five units high, or even that all columns within a given world are the same height.

- In an initial world, some columns may already contain beepers representing stones that are still in place. Your program should not put a second beeper on corners that already have beepers. Avenues that will not have columns will never contain existing beepers.

Note: if you're missing the additional "1x1.w" and "41x41.w" world files, you can download these files below, and then add/upload them to your challenge workspace:

1x1.w

41x41.w

Alternatively, save a copy of your code first, and you can then use the ... -> Reset to Scaffold to update it automatically. All files will be reset back to their original state.

1

Not yet

Testcases

2 / 3 passed

Test failed!

BEEPERS: (13, 2) had 0, expected 1

BEEPERS: (5, 4) had 0, expected 1

StoneMasonKarel.py

43

44

45

46

47

48

49

50

51



52

53

54

55

56

57

```
....if no_beeper_present():
```

```
.....put_beeper()
```

```
def turn_right():
```

```
....turn_left()
```

```
....turn_left()
```

```
....turn_left()
```

```
def move_four():
```

```
....move()
```

```
....move()
```

```
....move()
```

```
....move()
```

```
....
```

```
if __name__ == '__main__':
```

```
....run_karel_program('SampleQuad1.w')
```



Karel57:39

x



