

Welcome to Kodename

New Project

Open Project



/Path/To/Current/Location



Folder A



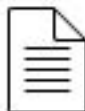
Folder B



Folder C



Folder D



Open

Cancel

New Project



Open Project

Click here to reset the world, removing all walls and beepers.

Open World

Save World

Generate Random World

Clear

4

x

4

Drag and drop beepers into any location.



Beeper Tool

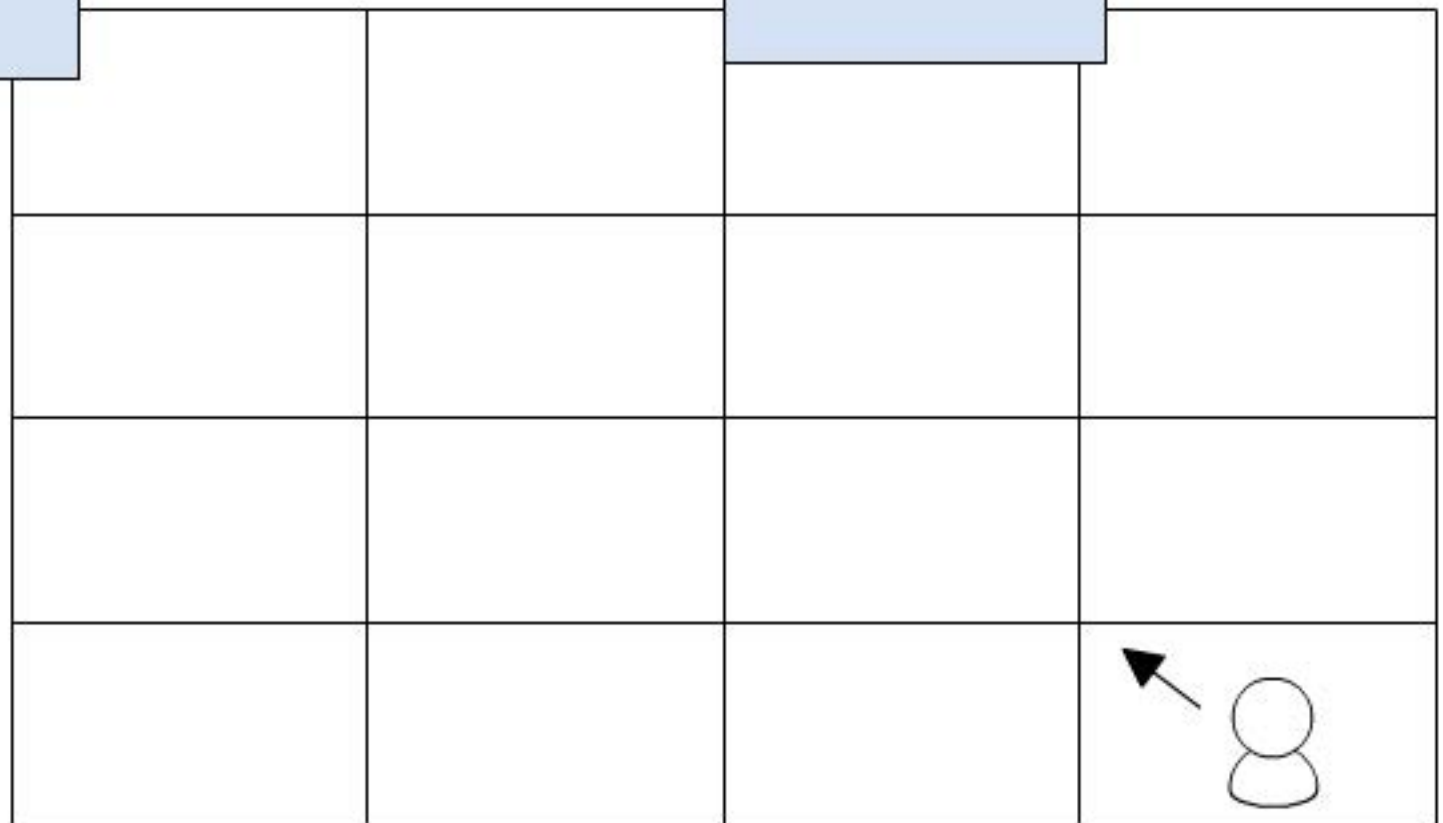
Set the dimensions of the world.

Wall Tool

Draw lines on the grid that represent walls.

Ok

Cancel



Open World

Save World

Generate Random
World

Clear

3

x

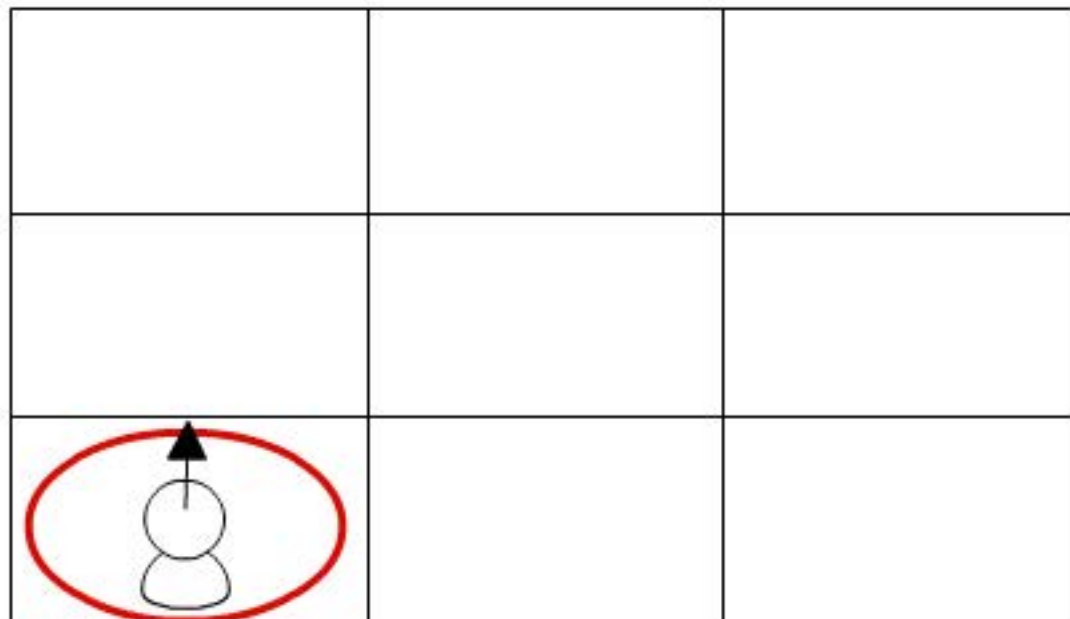
3



Beeper Tool



Wall Tool



Ok

Cancel

Open World

Save World

Generate Random
World

Clear

3

x

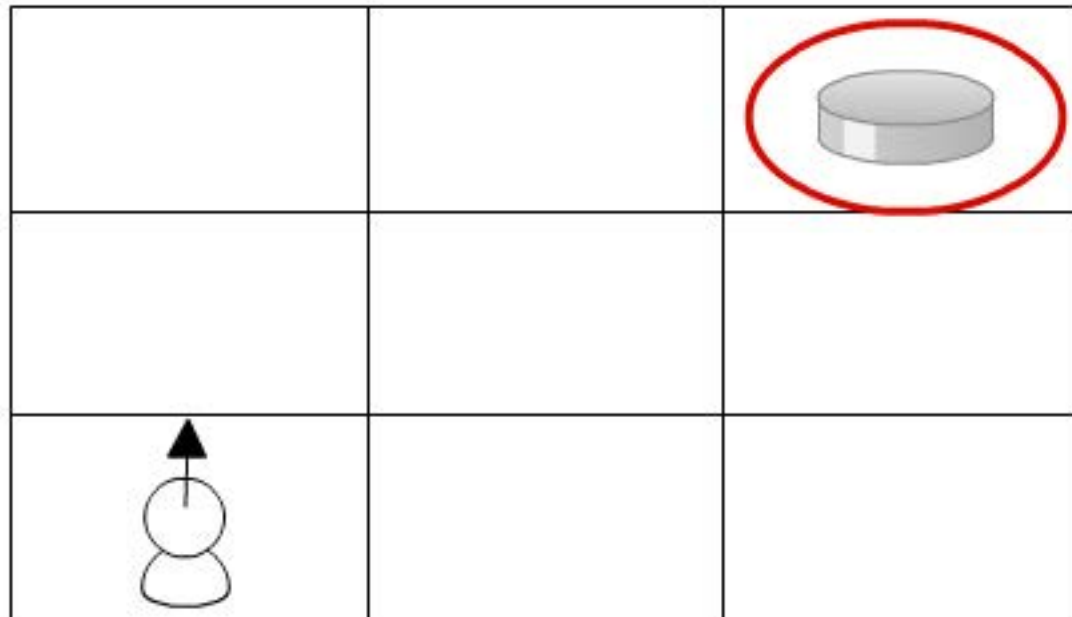
3



Beeper Tool



Wall Tool



Ok

Cancel

Open World

Save World

Generate Random
World

Clear

3

x

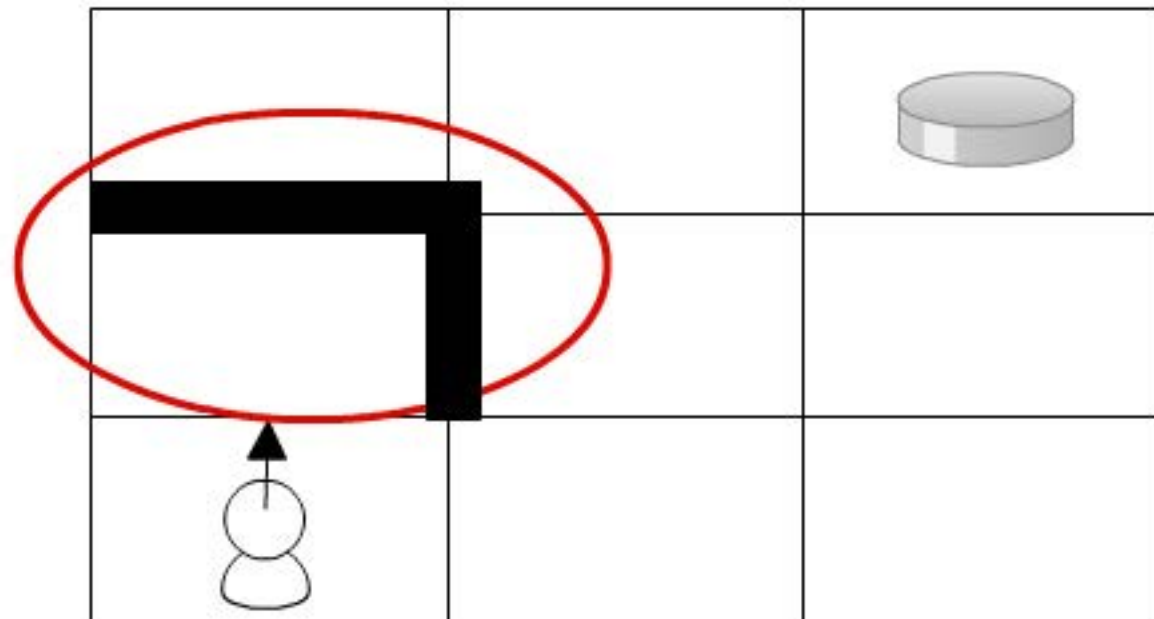
3



Beeper Tool



Wall Tool



Ok

Cancel

Save

X

Basic Actions

Custom

Loops

Booleans

Move

Drop Beeper

Pick Up Beeper

Turn Left

Shut Down

Pseudocode

Karel Source

Delete Action

Clear

Undo

Play / Pause

Next Step

3

2

1

1

2

3

Save

X

Basic Actions

Control

Custom

Booleans

if() {
}

if() {
} else {
}

while() {
}

loop() {
}

not

Pseudocode

Karel Source

Delete Action

Clear

Undo

Play / Pause

Next Step

3

2

1

1

2

3

Save

X

Basic Actions

Control

Custom

Booleans

Any Beeper in Bag?

Facing North?

Facing East?

Facing South?

Facing West?

Is There Wall in Front?

Beeper is Here?

Pseudocode

Karel Source

Delete Action

Clear

Undo

Play / Pause

Next Step

3

2

1

1

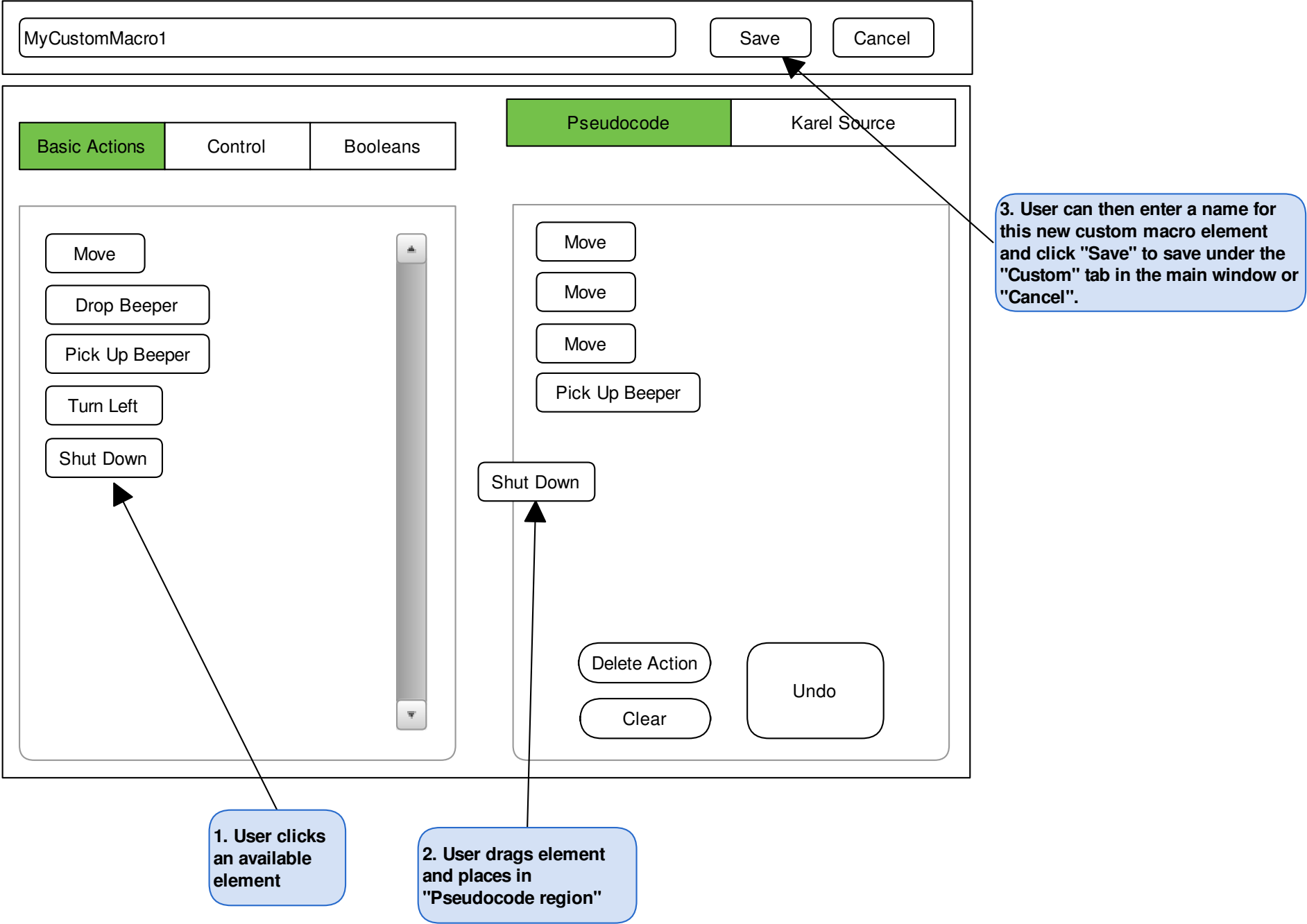
2

3

Base - Board4

The screenshot displays the Karel programming environment with three main panels:

- Left Panel (Custom Functions):** Contains a table with "Basic Actions" and "Custom" tabs. The "Custom" tab is active, showing a list of custom functions. A blue callout box points to the "Add a Custom Function" button. Below the list are "Edit", "Delete", and "Add a Custom Function" buttons.
- Middle Panel (Pseudocode Editor):** Contains a "Pseudocode" tab and a "Karel Source" tab. The "Pseudocode" tab is active, showing a large text area for writing pseudocode. Below the text area are "Delete Action", "Clear", and "Undo" buttons.
- Right Panel (Karel World):** Contains a "Play / Pause" button and a "Next Step" button. Below these is a 3x3 grid representing the Karel world. A red line indicates the path Karel has taken, starting from the bottom-left cell (1,1) and moving up to (1,2), then right to (2,2), and finally down to (2,1). A Karel robot icon is positioned at (1,1), and a coin icon is positioned at (3,3).



Enter name of new custom action...

Save

Cancel

Basic Actions

Control

Booleans

Move

Drop Beeper

Pick Up Beeper

Turn Left

Shut Down

Pseudocode

Karel Source

Move

Move

Move

Pick Up Beeper

Shut Down

Delete Action

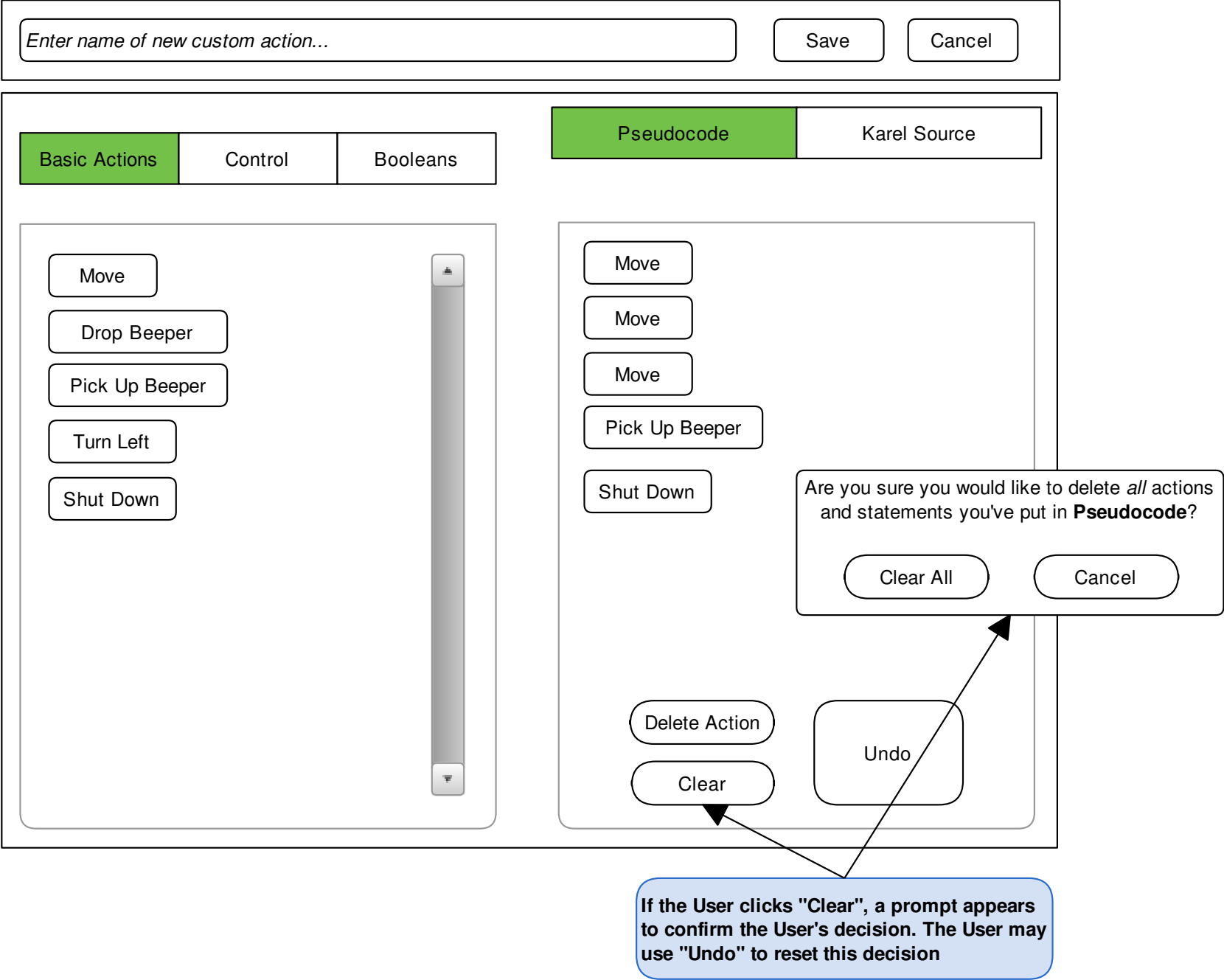
Clear

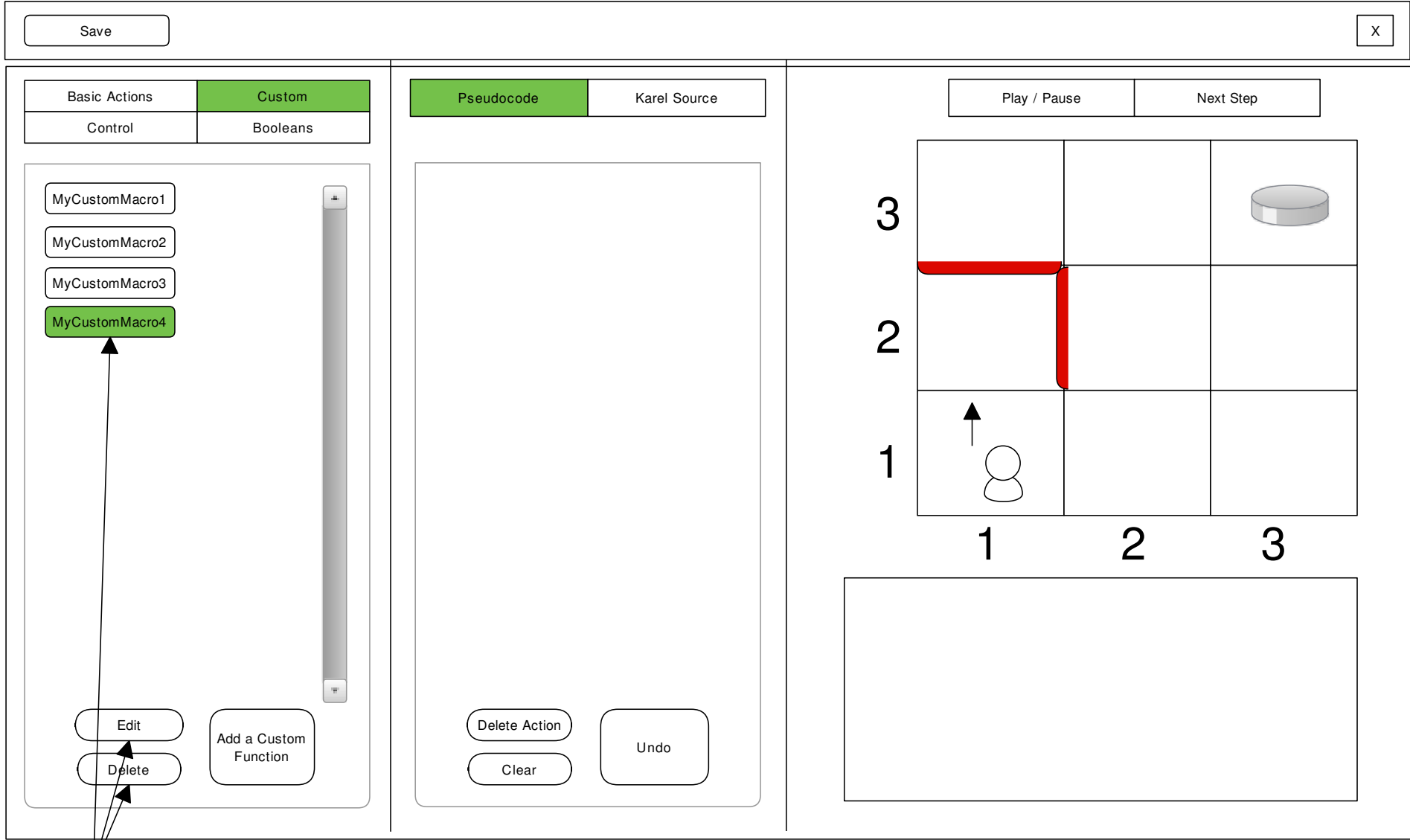
Undo

User can delete elements they have placed in the "Pseudocode" region by selecting and clicking "Delete Action"

Deletes all "Pseudocode"

Undos the last action, e.g. dropping in a new element, deleting an element, or clearing of all code





The User can edit or delete an existing custom macro by first selecting the macro from the list and then either clicking "Delete" or "Edit". If the User clicks "Edit", the custom macro creation window is brought up.

Save

X

Basic Actions

Custom

Control

Booleans

if(){\n}\n}

if(){\n\n}else{\n}\n}

while(){\n}\n}

loop(){\n}\n}

not

while(){\n}\n}

Delete Action

Clear

Undo

Play / Pause

Next Step

3

2

1

1

2

3

The User clicks and drags an element from the code block pane to the "Pseudocode" pane. Note that the User *cannot* drop code into the "Karel Source" tab.

Save

X

Basic Actions

Custom

Loops

Booleans

Move

Drop Beeper

Pick Up Beeper

Turn Left

Shut Down

Pick Up Beeper

Pseudocode

Karel Source

while(not Facing East?){
 Turn Right
}

loop(2){
 Move
}

Turn Left

loop(2){
 Move
}

if(Beeper is Here?){
 Pick Up Beeper
}

Delete Action

Clear

Undo

Play / Pause

Next Step

3

2

1

1

2

3

The User clicks and drags an element from the code block pane and drops it in the "Pseudocode" pane. Note that the User *cannot* drop code into the "Karel Source" tab.

Depending on the element the User has selected, it is possible to nest certain actions and conditions inside other elements. As shown here, an "Action" is nested inside an "if-statement".

Save

X

Basic Actions

Custom

Loops

Booleans

Move

Drop Beeper

Pick Up Beeper

Turn Left

Shut Down

Pseudocode

Karel Source

while(not Facing East?){
 Turn Right
}

loop(2){
 Move
}

Turn Left

loop(2){
 Move
}

if(Beeper is Here?){
 Pick Up Beeper
}

Delete Action

Clear

Undo

Play / Pause

Next Step

3

2

1

1

2

3

- The user can clear the entire program and start fresh.
- To Delete an item, simply select the unwanted piece of code and press the "Delete Action" Button.
- Undos the last action, e.g. dropping in a new element, deleting an element, or clearing of all code

Joe's storyboard.pdf - Pseudocode 2

Save

X

Basic Actions

Custom

Loops

Booleans

Move

Drop Beeper

Pick Up Beeper

Turn Left

Shut Down

Pseudocode

Karel Source

while(not Facing East?){
 Turn Right
}

loop(2){
 Move
}

Turn Left

loop(2){
 Move
}

if(Beeper is Here?){
 Pick Up Beeper
}

Delete Action

Clear

Undo

Play / Pause

Next Step

3

2

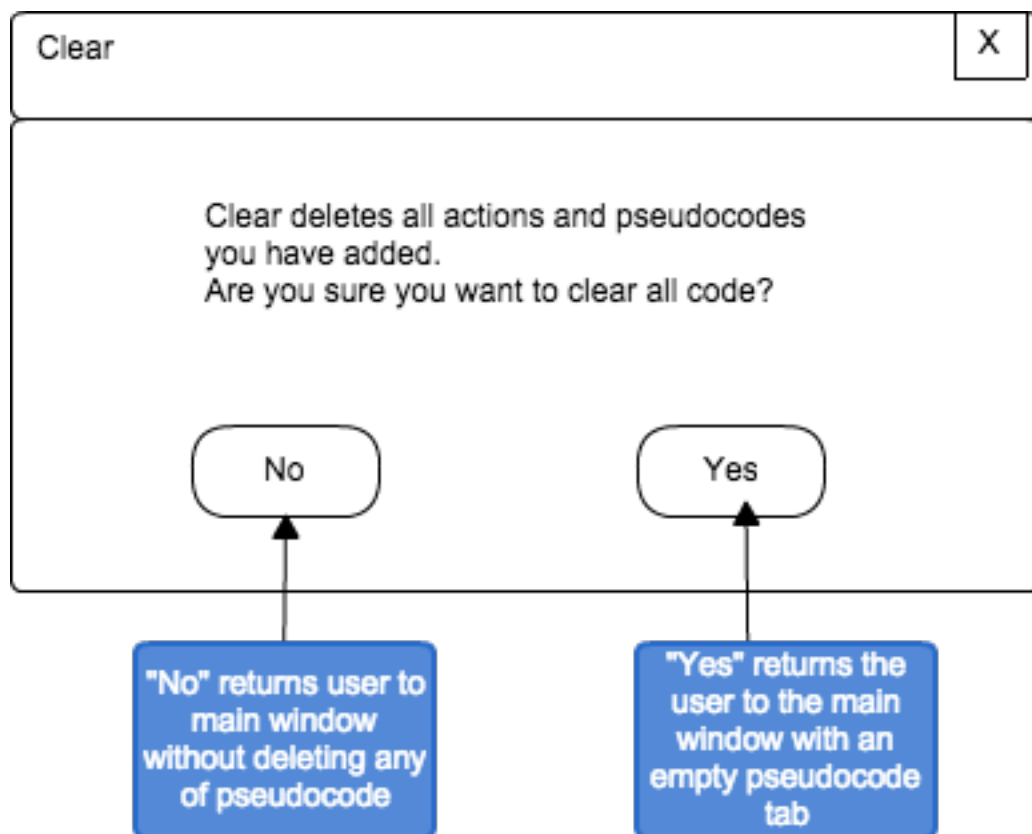
1

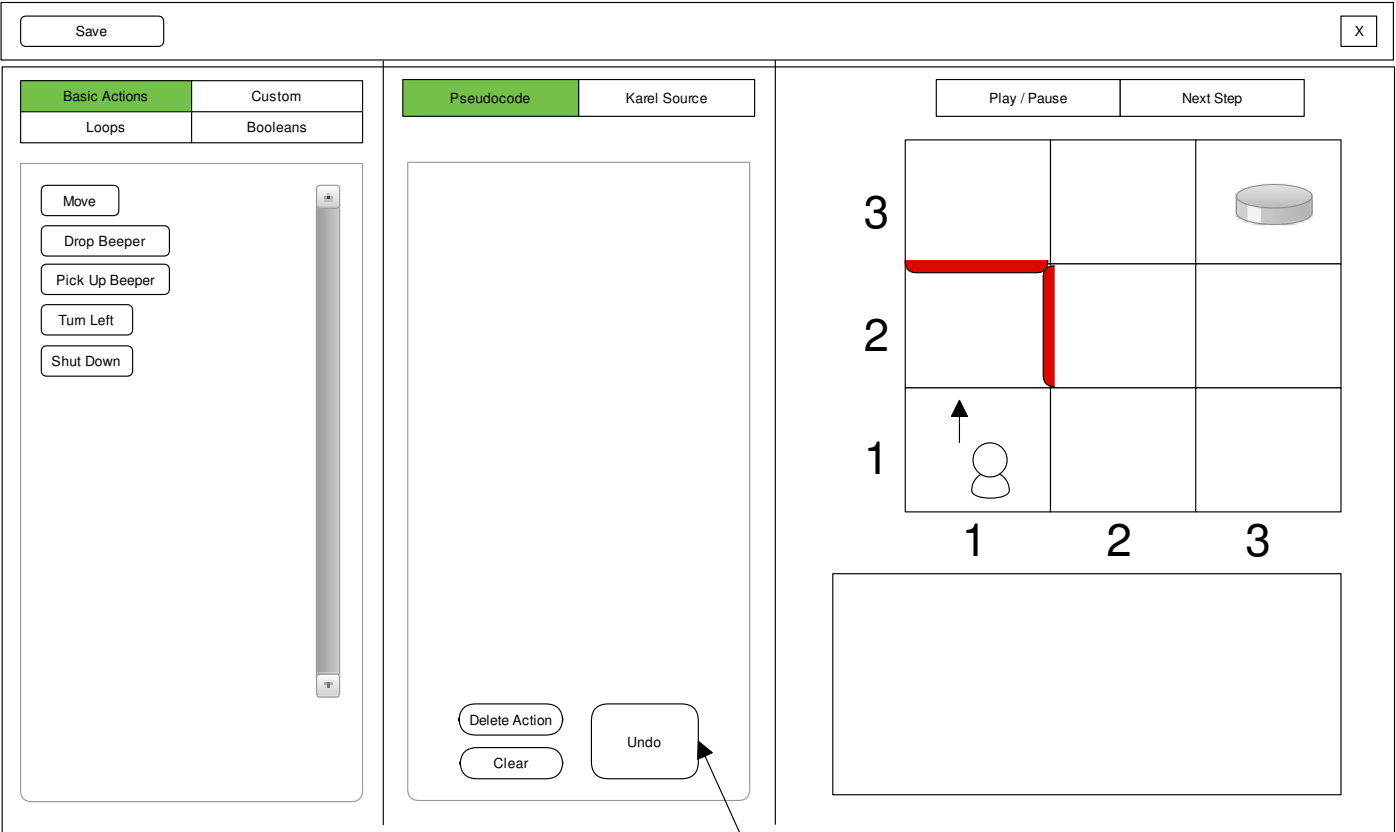
1

2

3

If the User clicks "Clear", a prompt appears to confirm the User's decision. The User may use "Undo" to reset this decision





All of the Pseudocode created is now erased. The User can start over and continue programming.

If clearing the program was a mistake, the User can press "Undo" and revert the program back to the prior state.

Joe's storyboard.pdf - Pseudocode 4

Save

X

Basic Actions

Custom

Loops

Booleans

Move

Drop Beeper

Pick Up Beeper

Turn Left

Shut Down

Pseudocode

Karel Source

```
while( not Facing East? ){
  Turn Right
}

loop( 2 ){
  Move
}

Turn Left

loop( 2 ){
  Move
}

if( Beeper is Here? ){
  Pick Up Beeper
}
```

Delete Action

Clear

Undo

Play / Pause

Next Step

3

2

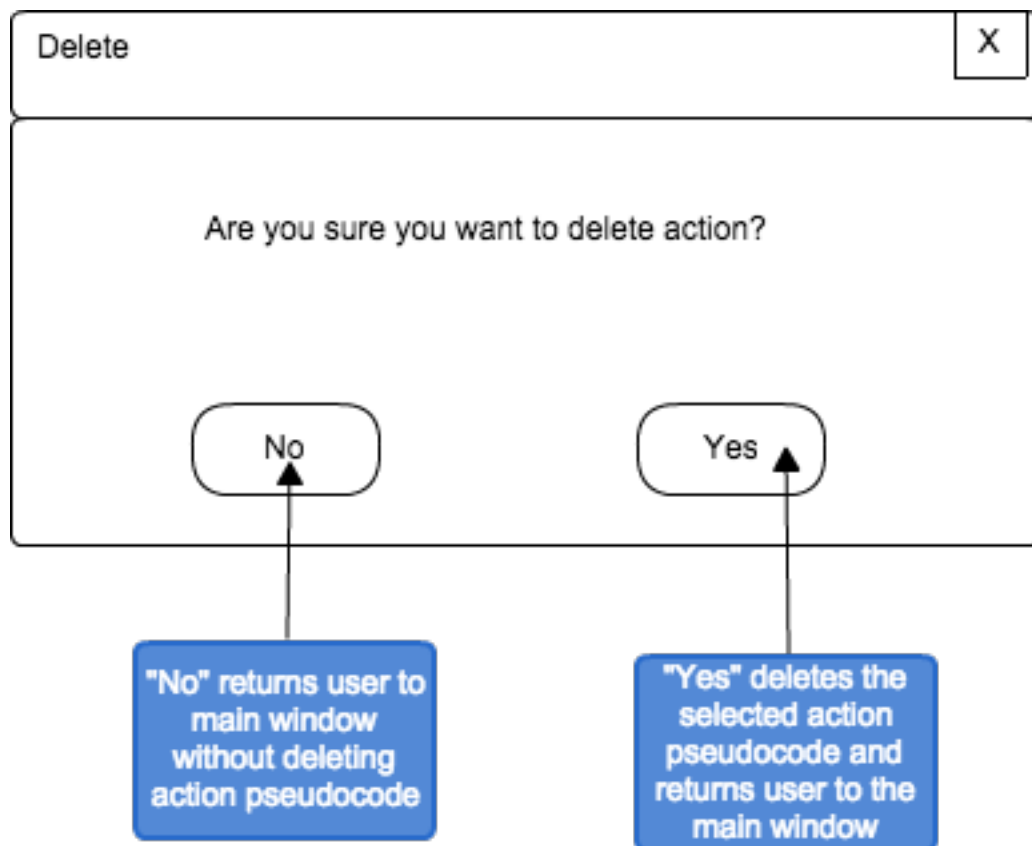
1

1

2

3

To Delete an item, simply select the unwanted piece of code and press the "Delete Action" Button. A prompt appears to confirm the User's decision. The User may use "Undo" to reset this decision.



Save

X

Basic Actions

Custom

Loops

Booleans

Move

Drop Beeper

Pick Up Beeper

Turn Left

Shut Down

Pseudocode

Karel Source

while(not Facing East?){
 Turn Right
}

loop(2){
 Move
}

Turn Left

loop(2){
 Move
}

Delete Action

Clear

Undo

Play / Pause

Next Step

3

2

1

1

2

3

Code is removed from the panel. Deletes can be reversed by the "Undo" button.

Save

X

Basic Actions

Custom

Loops

Booleans

Move

Drop Beeper

Pick Up Beeper

Turn Left

Shut Down

Pseudocode

Karel Source

```
while(notFacingEast()){
  turnRight();
}

for(int i=0; i < 2 ; i++){
  move();
}

turnLeft();

for(int i=0; i < 2 ; i++){
  move();
}
```

Play / Pause

Next Step

3

2

1

1

2

3

The deleted action and pseudocode is also reflected in the Karel Source code

The Karel Source tab does not have any buttons because all editing actions are expected to occur on the pseudocode. The user is only meant to inspect and "see" what Karel source code looks like.

Save

X

Basic Actions	Custom
Loops	Booleans

- Move
- Drop Beeper
- Pick Up Beeper
- Turn Left
- Shut Down

Pseudocode	Karel Source
------------	--------------

```
while( not Facing East? ){  
    Turn Right  
}
```

```
loop( 2 ){  
    move  
}
```

Turn left

```
loop( 2 ){  
    move  
}
```

```
if( Beeper is Here? ){  
    Pick Up Beeper  
}
```

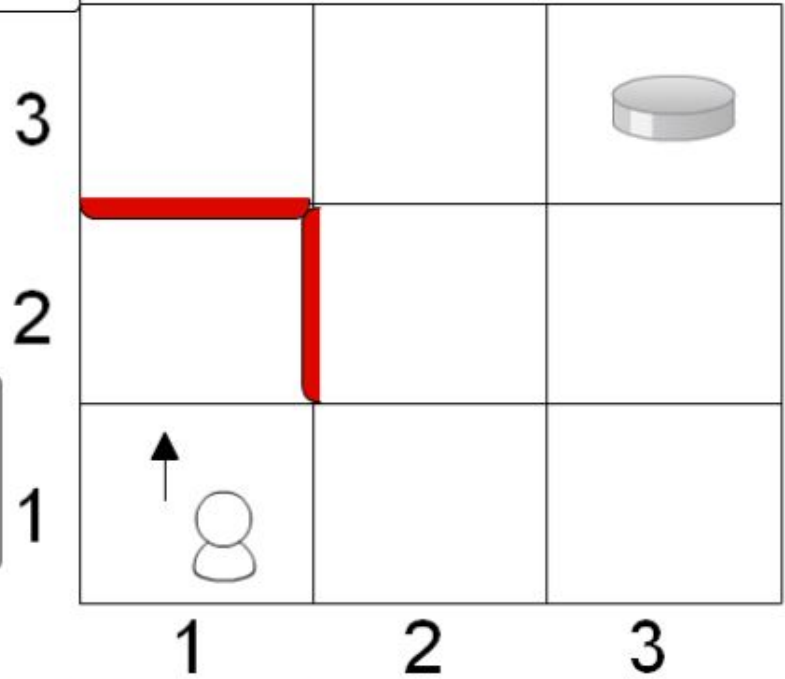
Delete Action

Clear

Undo

When the user hits the play button Karel will move around the world according to the actions set.

Play / Pause	Next Step
--------------	-----------



To differentiate one action from another, each action will be highlighted and have a 3 second pause in between.

1:26:30: KAREL PROGRAM STARTED
1:26:33: Karel is not facing east

Save

X

Basic Actions

Custom

Loops

Booleans

Pseudocode

Karel Source

Play / Pause

Next Step

```
while(notFacingEast){
  turnRight();
}

for(int i=0; i < 2; i++){
  move();
}

turnLeft();

for(int i=0; i < 2; i++){
  move();
}

if(beeperIsHere()){
  pickBeeper();
}
```

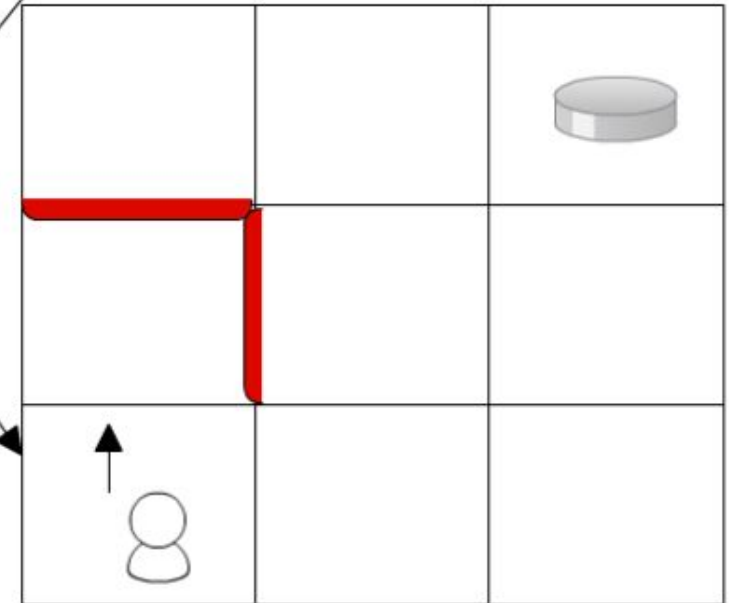
When the user hits the play button Karel will move around the world according to the actions set.

To differentiate one action from another, each action will be highlighted and have a 3 second pause in between.

3

2

1



1:26:30: KAREL PROGRAM STARTED
1:26:33: Karel is not facing east

Save

X

Basic Actions	Custom
Loops	Booleans

- Move
- Drop Beeper
- Pick Up Beeper
- Turn Left
- Shut Down

Pseudocode	Karel Source
------------	--------------

```
while( not Facing East? ){  
    Turn Right  
}
```

```
loop( 2 ){  
    move  
}
```

```
loop( 2 ){  
    move  
}
```

```
if( Beeper is Here? ){  
    Pick Up Beeper  
}
```

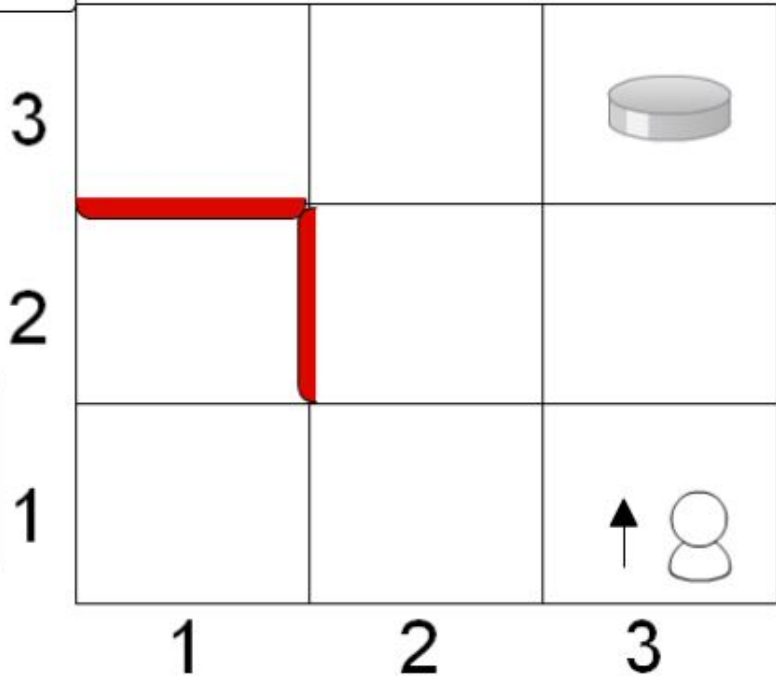
Delete Action

Clear

Undo

When the user hits the play button Karel will move around the world according to the actions set.

Play / Pause	Next Step
--------------	-----------



To differentiate one action from another, each action will be highlighted and have a 3 second pause in between.

1:26:30: KAREL PROGRAM STARTED
1:26:33: Karel is not facing east
1:26:36: Karel turned right
1:26:39 Karel is facing east
1:26:45: Karel moved one space
1:26:51: Karel moved one space
1:26:57: Karel turned left

Save

X

Basic Actions	Custom
Loops	Booleans

- Move
- Drop Beeper
- Pick Up Beeper
- Turn Left
- Shut Down

Pseudocode	Karel Source
------------	--------------

```
while( not Facing East? ){  
    Turn Right  
}
```

```
loop( 2 ){  
    move  
}
```

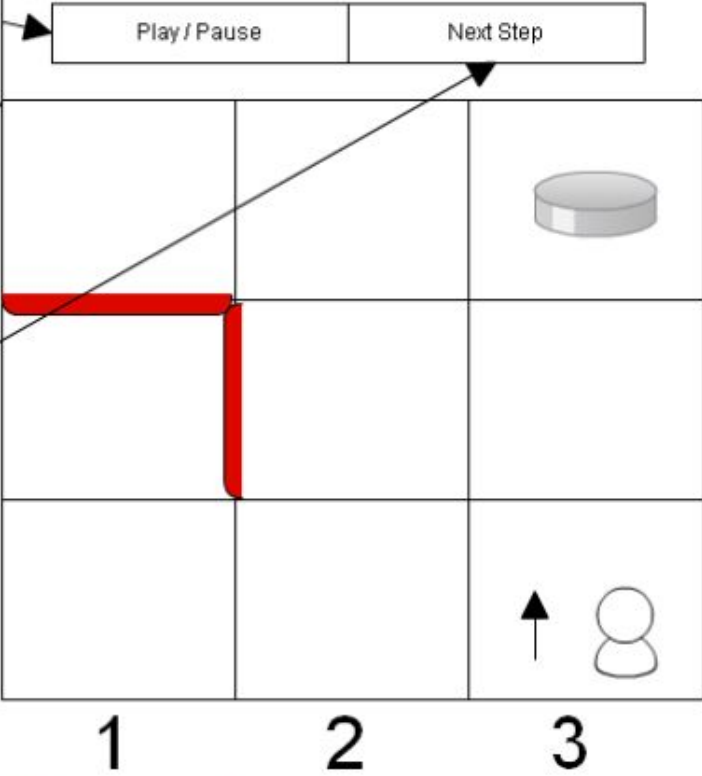
```
loop( 2 ){  
    move  
}
```

```
if( Beeper is Here? ){  
    Pick Up Beeper  
}
```

- Delete Action
- Clear
- Undo

When the user presses the pause button Karel will stop at the last action made that is highlighted in our Pseudocode

Pressing the next step button will execute one action at a time.



```
1:26:30: KAREL PROGRAM STARTED  
1:26:33: Karel is not facing east  
1:26:36: Karel turned right  
1:26:39: Karel is facing east  
1:26:45: Karel moved one space  
1:26:51: Karel moved one space  
1:26:57: Karel turned left  
1:26:58: PROGRAM PAUSED  
1:27:02: PROGRAM RESUMED IN MANUAL MODE
```

Save

X

Basic Actions

Custom

Loops

Booleans

Move

Drop Beeper

Pick Up Beeper

Turn Left

Shut Down

Pseudocode

Karel Source

```
while( not Facing East? ){  
    Turn Right  
}
```

```
loop( 2 ){  
    move  
}
```

Turn left

```
loop( 2 ){  
    move  
}
```

```
if( Beeper is Here? ){  
    Pick Up Beeper  
}
```

Delete Action

Clear

Undo

Pressing the next step button will execute one action at a time.

Play / Pause

Next Step

3

2

1

1

2

3

1:26:30: KAREL PROGRAM STARTED
1:26:33: Karel is not facing east
1:26:36: Karel turned right
1:26:39 Karel is facing east
1:26:45: Karel moved one space
1:26:51: Karel moved one space
1:26:57: Karel turned left
1:26:58: PROGRAM PAUSED
1:27:02: PROGRAM RESUMED IN MANUAL MODE

Save

X

Basic Actions	Custom
Loops	Booleans

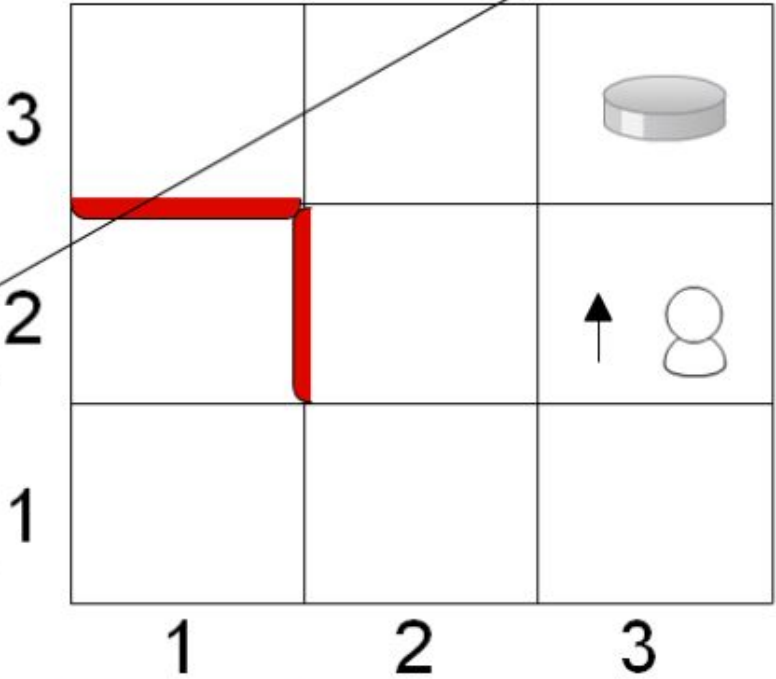
- Move
- Drop Beeper
- Pick Up Beeper
- Turn Left
- Shut Down

Pseudocode	Karel Source
------------	--------------

```
while( not Facing East? ){  
    Turn Right  
}  
  
loop( 2 ){  
    move  
}  
  
Turn left  
  
loop( 2 ){  
    move  
}  
  
if( Beeper is Here? ){  
    Pick Up Beeper  
}
```

- Delete Action
- Clear
- Undo

Play / Pause	Next Step
--------------	-----------



Pressing the next step button will execute one action at a time.

1:26:30: KAREL PROGRAM STARTED
1:26:33: Karel is not facing east
1:26:36: Karel turned right
1:26:39 Karel is facing east
1:26:45: Karel moved one space
1:26:51: Karel moved one space
1:26:57: Karel turned left
1:26:58: PROGRAM PAUSED
1:27:02: PROGRAM RESUMED IN MANUAL MODE
1:27:08: Karel moved one space

Save

X

Basic Actions

Custom

Loops

Booleans

Move

Drop Beeper

Pick Up Beeper

Turn Left

Shut Down

Pseudocode

Karel Source

```
while( not Facing East? ){  
    Turn Right  
}
```

```
loop( 2 ){  
    move  
}
```

Turn left

```
loop( 2 ){  
    move  
}
```

```
if( Beeper is Here? ){  
    Pick Up Beeper  
}
```

Delete Action

Clear

Undo

Pressing the next step button will execute one action at a time.

Play / Pause

Next Step

3

2

1

1

2

3

1:26:30: KAREL PROGRAM STARTED
1:26:33: Karel is not facing east
1:26:36: Karel turned right
1:26:39 Karel is facing east
1:26:45: Karel moved one space
1:26:51: Karel moved one space
1:26:57: Karel turned left
1:26:58: PROGRAM PAUSED
1:27:02: PROGRAM RESUMED IN MANUAL MODE
1:27:08: Karel moved one space
1:27:10: Karel moved one space
1:27:15: Beeper is here

Save

X

Basic Actions

Custom

Loops

Booleans

Move

Drop Beeper

Pick Up Beeper

Turn Left

Shut Down

Pseudocode

Karel Source

```
while( not Facing East? ){  
    Turn Right  
}
```

```
loop( 2 ){  
    move  
}
```

Turn left

```
loop( 2 ){  
    move  
}
```

```
if( Beeper is Here? ){  
    Pick Up Beeper  
}
```

Delete Action

Clear

Undo

Pressing the next step button will execute one action at a time.

Play / Pause

Next Step

3

2

1

1

2

3

1:26:30: KAREL PROGRAM STARTED
1:26:33: Karel is not facing east
1:26:36: Karel turned right
1:26:39 Karel is facing east
1:26:45: Karel moved one space
1:26:51: Karel moved one space
1:26:57: Karel turned left
1:26:58: PROGRAM PAUSED
1:27:02: PROGRAM RESUMED IN MANUAL MODE
1:27:08: Karel moved one space
1:27:10: Karel moved one space
1:27:15: Beeper is here
1:27:17: Picked up Beeper
1:27:17: PROGRAM ENDED - SUCCESS

When the "Save" button is clicked, a prompt appears to allow the user to save the current state of their program.

Save

X

Basic Actions

Custom

Loops

Booleans

Move

Drop Beeper

Pick Up Beeper

Turn Left

Shut Down

Pseudocode

Karel Source

```
while(notFacingEast()){
  turnRight();
}

for(int i=0; i < 2 ; i++){
  move();
}

turnLeft();

for(int i=0; i < 2 ; i++){
  move();
}

if(beeperIsHere()){
  pickBeeper();
}
```

Play / Pause

Next Step

3

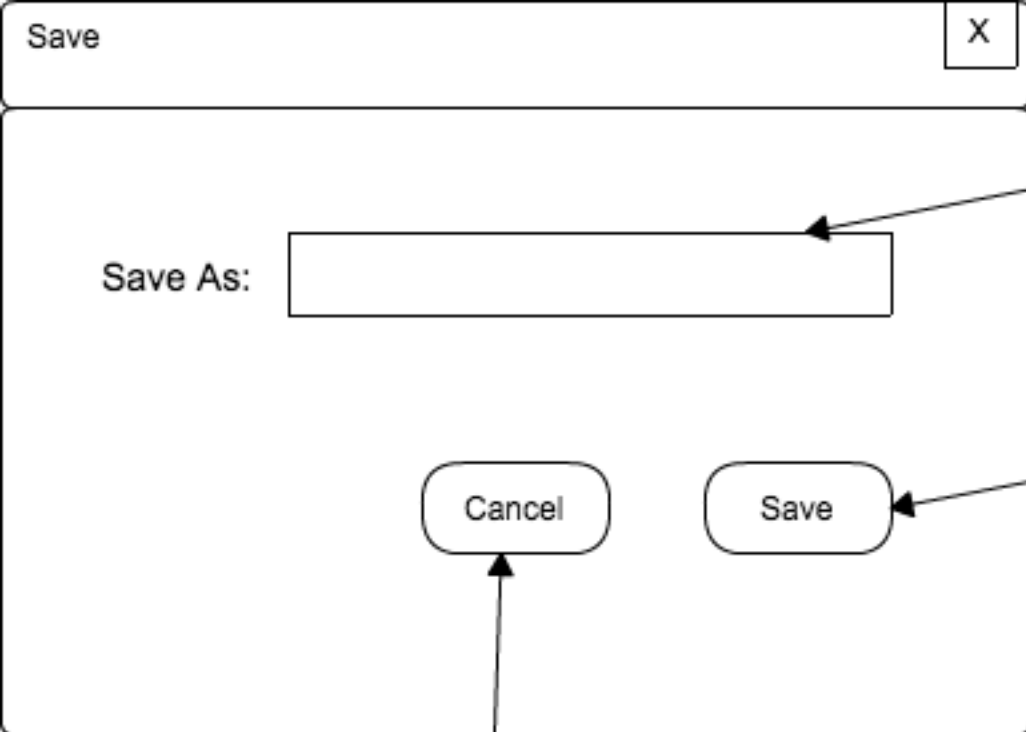
2

1

1

2

3



The user enters the name they wish to give the current program

The Save button saves the current program with the filename specified by the user.

Cancel button closes this dialog and returns the user to the main window

Save

Basic ActionsCustom

LoopsBooleans

Move

Drop Beeper

Pick Up Beeper

Turn Left

Shut Down

PseudocodeKarel Source

```
while(notFacingEast()){
  turnRight();
}

for(int i=0; i < 2 ; i++){
  move();
}

turnLeft();

for(int i=0; i < 2 ; i++){
  move();
}

if(beeperIsHere()){
  pickBeeper();
}
```

Play / PauseNext Step

3

2

1

123

This button terminates the application. When a user clicks it, a dialog appears to remind the user to save their current program, delete it, or cancel closing the application.

