

Robotics 101

OVERVIEW

This App you see running on the iPad is the Mblockly program.

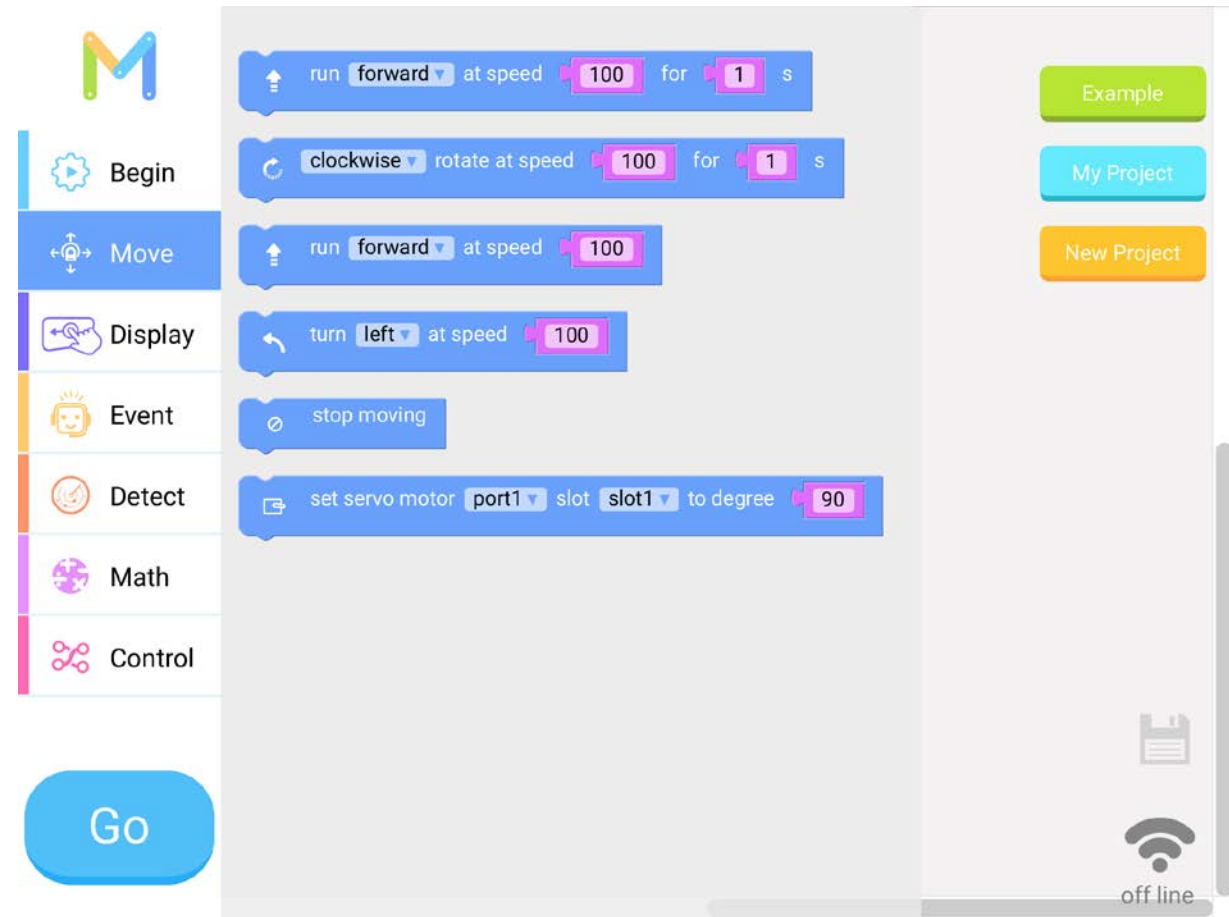
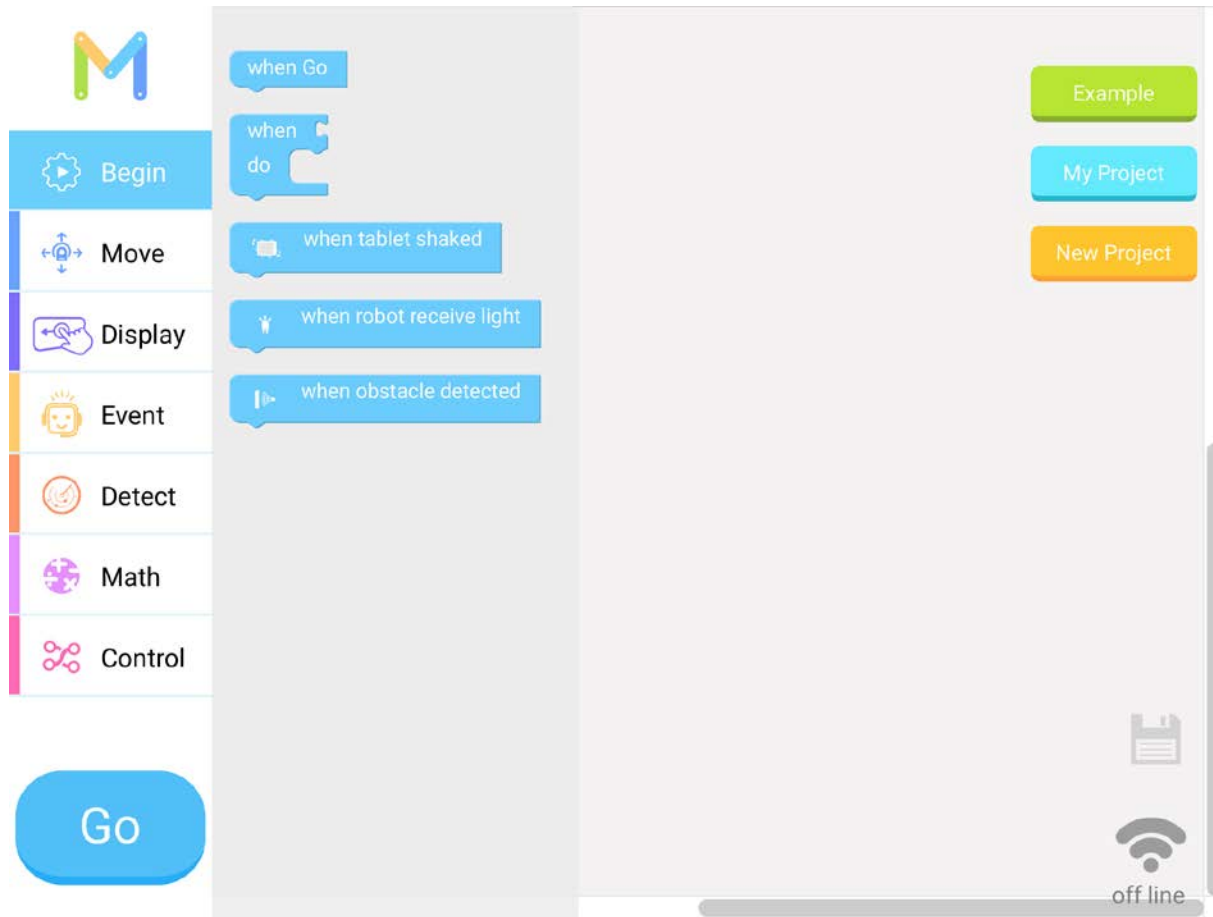
This will help you program your Mbot robot

Mblockly is a user friendly and easy to use application that is similar to the Scratch coding platform.

With this program you can make your robot do anything



When you open the app you will see an open space, and on the right you will see tabs. Behind those tabs there are commands you will need to use to program the robot. We will mainly use commands from the Begin tab and Move tab





First the Basics

- Lets make the Robot move forward\backwards

Example

My Project

New Project



Begin



Move



Display



Event



Detect



Math



Control

Go

when Go



run forward at speed

7

When you press go the robot
will move forward slowly



off line



Begin



Move



Display



Event



Detect



Math



Control

Go

Example

My Project

New Project

when Go



run backward at speed

7

When you press go the robot
will move backward



off line



Begin



Move



Display



Event



Detect



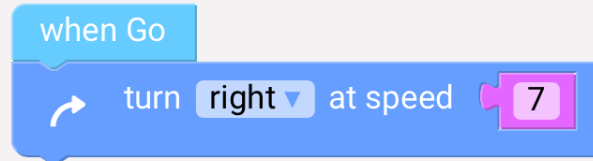
Math



Control

Go

- Then Lets makes the robot move left\right



When you press go the robot
will turn right

Example

My Project

New Project



off line



Begin



Move



Display



Event



Detect



Math



Control

Go

when Go



turn left at speed

7

When you press go the robot
will turn left

Example

My Project

New Project



off line

Adjusting SPEED

- The robot has many different speeds (below are the speed levels)





Begin



Move



Display



Event



Detect



Math



Control

Go

- Lets Adjust the speed of the robot going forward\backwards

Example

My Project

New Project

when Go



run forward at speed

7

when Go



run forward at speed

101

when Go



run forward at speed

195

when Go



run forward at speed

255

Notice when you run
each code individually
the robot will go faster
going forward

255 is the max speed

Make sure to use each line of code individually



off line



Begin



Move



Display



Event



Detect



Math



Control

Go

when you run
each code
individually
the robot will
Move faster
going Backward

when Go

run backward at speed 7

when Go

run backward at speed 101

when Go

run backward at speed 195

when Go

run backward at speed 255

Example

My Project

New Project



off line

Make sure to use each line of code individually



Adjusting Speed and Duration of Movement

Example

My Project

New Project

Begin

Move

Display

Event

Detect

Math

Control

Go

```
when Go
  run forward at speed 197 for 10 s
```

The robot will move forward at speed 197 for 10 seconds

```
when Go
  run forward at speed 197 for 3 s
```

The robot will move forward at speed 197 for 3seconds

```
when Go
  run forward at speed 7 for 100 s
```

The robot will move forward at speed 7 for 100 seconds

The first code will make the robot cover the longest distance and the second code will make the robot cover the shortest distance.

- Lets see how far we can get the robot to move
- So you must factor in the speed of the robot and how long the robot will be moving at that particular speed.



off line



Putting it all together



Begin



Move



Display



Event



Detect



Math



Control

Go

Example

My Project

New Project

when Go



run forward at speed 100 for 5 s



clockwise rotate at speed 54 for 2 s



anticlockwise rotate at speed 54 for 2 s



run backward at speed 100 for 5 s



stop moving



off line

Vex Robotics



Makeblock



K'Nex Robotics



Robotics Workshop

