

VR Skills submission - team 58676E. I'm Olivier and I'm from Quebec, Canada.

This is the best settings. It is put in a loop with a "break" to make sure all the settings are applied, but only once.

```

when started
  forever
    set IntakeMotor velocity to 100 %
    set ArmMotor velocity to 100 %
    set turn velocity to 100 %
    set drive velocity to 100 %
    set ArmMotor timeout to 0 seconds
    set IntakeMotor timeout to 0 seconds
  break
  
```

when the arm opens to be able to take a shoot triballs.

```

when started
  Open Arm to 1200 Degrees
  
```

when the arm is opened enough, it spins outward. Then, when the robot is at the right angle, it spins forward and outward right after to have time. Then, again, when its at the right angle, it spins outward. This is made as a message for the robot to move and spin the IntakeMotor at the same time. So, it's used to save time and therefore be more efficient.

```

when I receive a v
  wait until ArmMotor position in degrees > 810
  spin IntakeMotor sortie for 400 degrees
  wait until GPS heading in degrees > 345
  spin IntakeMotor admission for 60 degrees
  spin IntakeMotor sortie for 585 degrees
  wait until GPS heading in degrees > 10
  spin IntakeMotor admission for 450 degrees
  
```

```

define Open Arm to X Degrees
  spin ArmMotor to position X degrees
  Open Arm to 1 Degrees
  
```

```

define Drive 1 mm 2 % speed
  if 2 > 1 then
    Drive 1 mm 1 % speed
  drive forward for 1 mm
else
  drive reverse for 1 mm
  
```

```

define Turn to X degrees
  turn to heading X degrees
  
```

```

define Drive to 1 X 2 Y
  set startingX to GPS position X in mm
  set startingY to GPS position Y in mm
  set endingX to 1
  set endingY to 2
  set angle to atan of endingX - startingX / endingY - startingY
  if endingY - startingY < 0 then
    change angle by 180
  turn to heading angle degrees
  set driveDistance to sqrt of endingX - startingX * endingX - startingX + endingY - startingY * endingY - startingY
  drive forward for driveDistance mm
  
```

```

define Drive bwd to 3 X 4 Y
  set startingX to GPS position X in mm
  set startingY to GPS position Y in mm
  set endingX to 3
  set endingY to 4
  set angle to atan of endingX - startingX / endingY - startingY
  turn to heading angle degrees
  set driveDistance to sqrt of endingX - startingX * endingX - startingX + endingY - startingY * endingY - startingY
  drive reverse for driveDistance mm
  
```

This is also a gps moving block, but the difference from the other one is that it goes backward only, not forward.

```

Drive bwd to 1 X 1 Y
  
```

```

define Drive bwd without turning 5 X 6 Y
  set startingX to GPS position X in mm
  set startingY to GPS position Y in mm
  set endingX to 5
  set endingY to 6
  set driveDistance to sqrt of endingX - startingX * endingX - startingX + endingY - startingY * endingY - startingY
  drive reverse for driveDistance mm
  
```

Same thing as the other 2 gps moving blocks, but it goes backward and doesn't turn.

```

Drive bwd without turning 1 X 1 Y
  
```

when started

At the beginning, the robot puts the two red triballs in his goal.

1st red triball

broadcast a

Drive to **-900** X **-74** Y

Turn to **315** degrees

2nd red triball

wait until IntakeMotor is spinning?

wait until IntakeMotor is done?

Turn to **350** degrees

Turn to **313** degrees

1st green triball

Then, it turns to the right and shoots the 6 green triballs that are on the left of the black horizontal bar.

wait until IntakeMotor is spinning?

wait until IntakeMotor is done?

Turn to **65** degrees

Drive to **-300** X **300** Y

Turn to **90** degrees

set ShootAtAnAngle_ to **1**

Shoot preload and wait until IntakeMotor is at **-99** degrees

2nd

Turn to **145** degrees

Turn to **90** degrees

Shoot preload and wait until IntakeMotor is at **-351** degrees

3rd

when started

This is the basics settings. It is put in a loop with a "break" to make sure all the settings are applied, but only once.

forever

set IntakeMotor velocity to **100** %

set ArmMotor velocity to **100** %

set turn velocity to **100** %

set drive velocity to **100** %

set ArmMotor timeout to **0** seconds

set IntakeMotor timeout to **0** seconds

break

when started

Here, the arm opens to be able to take a shoot triballs.

Open Arm to **1200** Degrees

when I receive a

wait until ArmMotor position in degrees > **810**

spin IntakeMotor sortie for **400** degrees

wait until GPS heading in degrees > **345**

spin IntakeMotor admission for **60** degrees

spin IntakeMotor sortie for **585** degrees

wait until GPS heading in degrees > **10**

spin IntakeMotor admission for **450** degrees

This part is to turn the intake motor.

When the arm is opened enough, it spins outward.

Then, when the robot is at the right angle, it spins inward and outward right after to save time.

Then, again, when its at the right angle, it spins outward.

This is made as a message for the robot to move and spin the intake motor at the same time. So, it's used to save time and therefore be more efficient.

3rd

Turn to 25 degrees

Turn to 90 degrees

Shoot preload and wait until IntakeMotor is at -360 degrees

4th

Drive to -225 X 675 Y

Drive bwd to -295 X -235 Y

Turn to 90 degrees

Shoot preload and wait until IntakeMotor is at -108 degrees

5th

Turn to 150 degrees

Turn to 90 degrees

Shoot preload and wait until IntakeMotor is at -360 degrees

6th

Drive to -200 X -675 Y

set ShootAtAnAngle_ to 0

broadcast b

Drive to 650 X -500 Y

7th

Drive to 1425 X -1325 Y

Drive to 1425 X -1100 Y

wait until IntakeMotor is spinning?

wait until IntakeMotor is done?

8th

Drive to 375 X -1400 Y

when I receive b

wait until GPS position X in mm > 0

spin IntakeMotor sortie for 500 degrees

wait until GPS heading in degrees > 135

spin IntakeMotor admission for 700 degrees

spin IntakeMotor sortie for 625 degrees

wait until GPS position X in mm < 450

spin IntakeMotor admission for 50 degrees

wait until GPS position X in mm > 1150

spin IntakeMotor sortie for 500 degrees

After that, the robot goes to the bottom right corner, take the triball and puts it in the goal. Then, it goes under the red horizontal bar, takes the triball and shoot it in the goal.

Similar as message A, under a certain condition, the Intake motor spins inward or outward.

8th

Drive to 375 X -1400 Y

Drive to 1425 X -1100 Y

Turn to 25 degrees

wait until IntakeMotor is done?

Drive to 375 X -1400 Y

broadcast c

set ShootAtAnAngle_ to 1

set TempsPourTirer to -99

set AngleToShoot to 233

9th to 13th

repeat 5

Drive to -1375 X -1400 Y

Turn to AngleToShoot degrees

repeat until GPS position X in mm > -310

drive reverse

Turn to 90 degrees

Shoot preload and wait until IntakeMotor is at TempsPourTirer degrees

change TempsPourTirer by -9

change XYZ by 1

Later, it goes to the bottom left corner, take a triball, go to the black horizontal bar and shoot it in the goal. It does that 5 times.

I call this part the shooting loop.

wait until GPS position X in mm > 1150

spin IntakeMotor sortie for 500 degrees

when I receive c

Message C is for the shooting loop. I wanted the robot to shoot after different number of degrees from the intake motor. So for example, after 233 degrees, the robot will move forward and "shoot" the triball.

forever

if XYZ = 0 then

set AngleToShoot to 233

if XYZ = 1 then

set AngleToShoot to 233

if XYZ = 2 then

set AngleToShoot to 226

if XYZ = 3 then

set AngleToShoot to 223

if XYZ = 4 then

set AngleToShoot to 220

To the end, the robot

14th

broadcast d

Drive to -1450 X 1400 Y

Drive to 600 X 1400 Y

Drive to 1220 X 1000 Y

15th

wait until IntakeMotor is done?

Drive to 1450 X 1350 Y

Drive to 1418 X 975 Y

Drive 125 mm -100 % speed

stop project

In the end, the robot goes to the top left corner, take a triball, go to his goal (and pushes a triball for the +2 points) and shoot the triball in the goal.

After, it goes to the top right corner, take a triball, shoot it in his goal, back up and the program ends.

when I receive d

set ShootAtAnAngle_ to 0

stop IntakeMotor

wait until GPS position Y in mm > 1200

spin IntakeMotor admission for 500 degrees

wait until GPS heading in degrees > 120

spin IntakeMotor sortie for 450 degrees

wait until GPS heading in degrees < 45

spin IntakeMotor admission for 300 degrees

stop IntakeMotor

spin IntakeMotor sortie

Again, similar to message A and B, this make the intake motor spin inward or outward under specifics conditions.