PRESENTATION 14 · LEARNING WITH STATEMENTS

Green deposit

Collect three, then bring them home: a built-in counter and a green-LED deposit.

TheBotCup 2026 · AiBotCup Simulator



RECAP

Two things we already know

Collect

A colour range finds iron, silver or gold. The Key Action stops and collects with the red LED.

Variables

A named number, checked in **Advanced Conditions** (Presentation 7).

Today the robot gives us a variable **for free**.

PART 1

The mission: Session 14

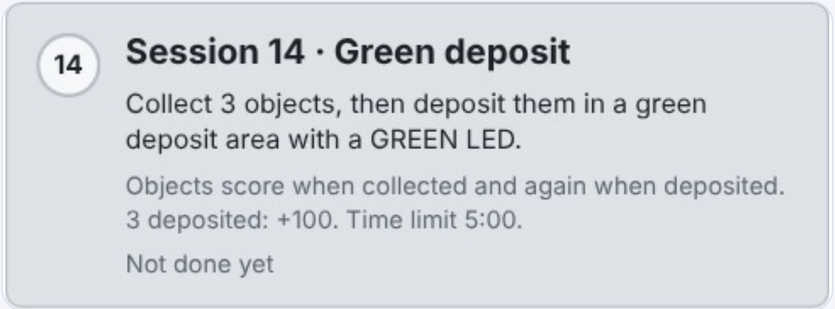
Collect three, deposit on green

SESSION 14 · GREEN DEPOSIT

Collect 3, then deposit with a GREEN LED

Objects score when **collected** and again when **deposited**. 3 deposited: **+100**.

Time limit **5:00**. Code challenge: at most **12** statements.





THE FIELD

Two green corners

START at the bottom centre.

Iron, silver and gold all over the field.

Two **green deposit areas** in the top corners: either one works.

PART 2

Two new ideas

How full am I? Where do I unload?

IDEA 1 · A BUILT-IN VARIABLE

LoadedObjects counts for us

0 → 3

+1 each time an object is **really on board**

→ 0

back to 0 after a **deposit**

No need to make it with the Var button. Just type it in **Advanced Conditions**: **LoadedObjects < 3** or **LoadedObjects == 3**.

IDEA 2 · THE DEPOSIT

Both sensors on green, then Deposit

Green range

R 0–75 · G 130–200 · B 40–110, on **left and right**.

Key Action Deposit

Stops, lights the **green LED** and unloads.

Both sensors on green means the robot is fully inside the area.

PART 3

Step by step in statements

Nine statements, Deposit on top

STEP 1 · THE WHOLE PROGRAM

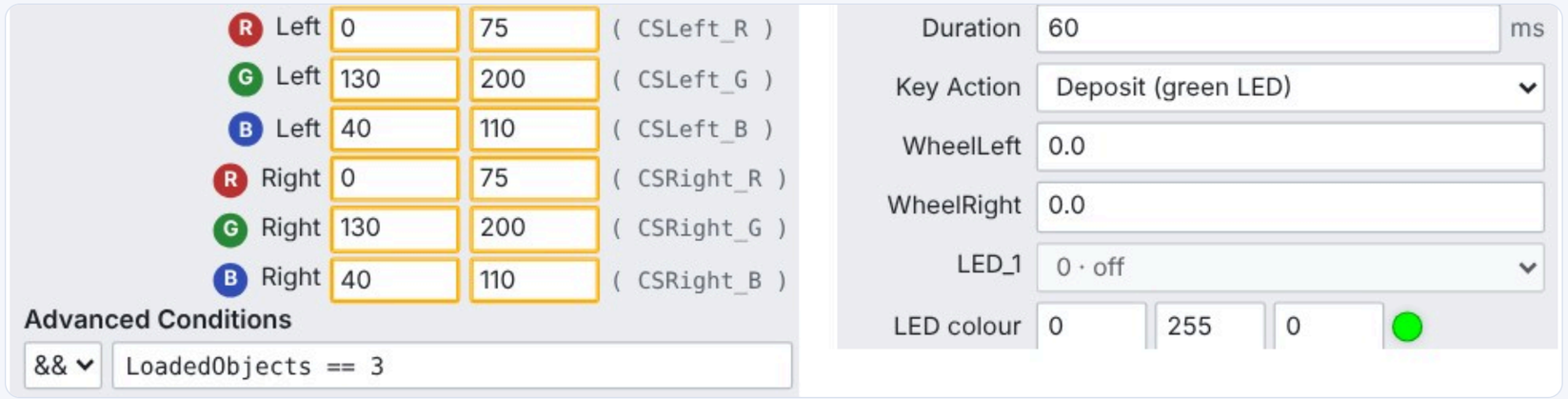
Deposit, six collects, two drivers

Statement	Condition	Advanced	Action
1 Deposit	both sensors green	LoadedObjects == 3	Deposit · 0 / 0
2 IronLeft	left iron	LoadedObjects < 3	Collect · 0 / 0
3 IronRight	right iron	LoadedObjects < 3	Collect · 0 / 0
4 SilverLeft	left silver	LoadedObjects < 3	Collect · 0 / 0
5 SilverRight	right silver	LoadedObjects < 3	Collect · 0 / 0
6 GoldLeft	left gold	LoadedObjects < 3	Collect · 0 / 0
7 GoldRight	right gold	LoadedObjects < 3	Collect · 0 / 0
8 Ahead	US_Front 0–20	none	−2 / 2 · 700 ms
9 Forward	none	none	4.5 / 4.5

STEP 2 · STATEMENT 1

Deposit

1 Deposit
both green · full



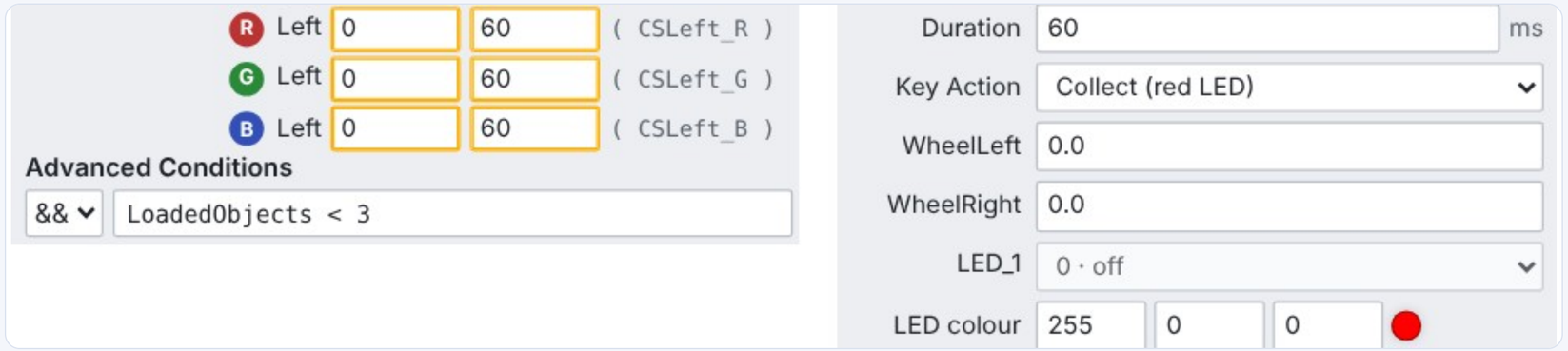
Six colour rows: the **green range** on both sensors.

Advanced: **LoadedObjects == 3** · Key Action **Deposit**.

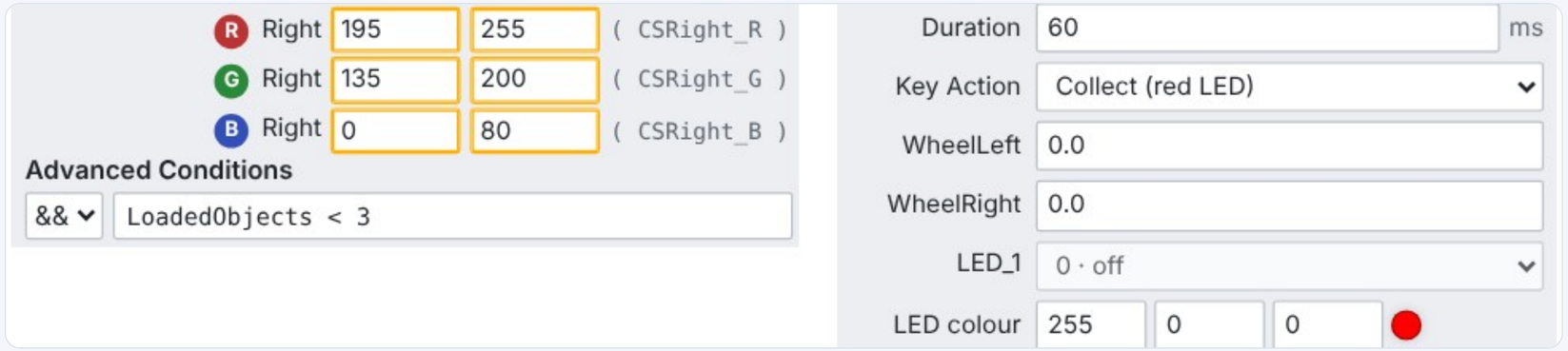
STEP 3 · STATEMENTS 2 TO 7

Collect only while not full

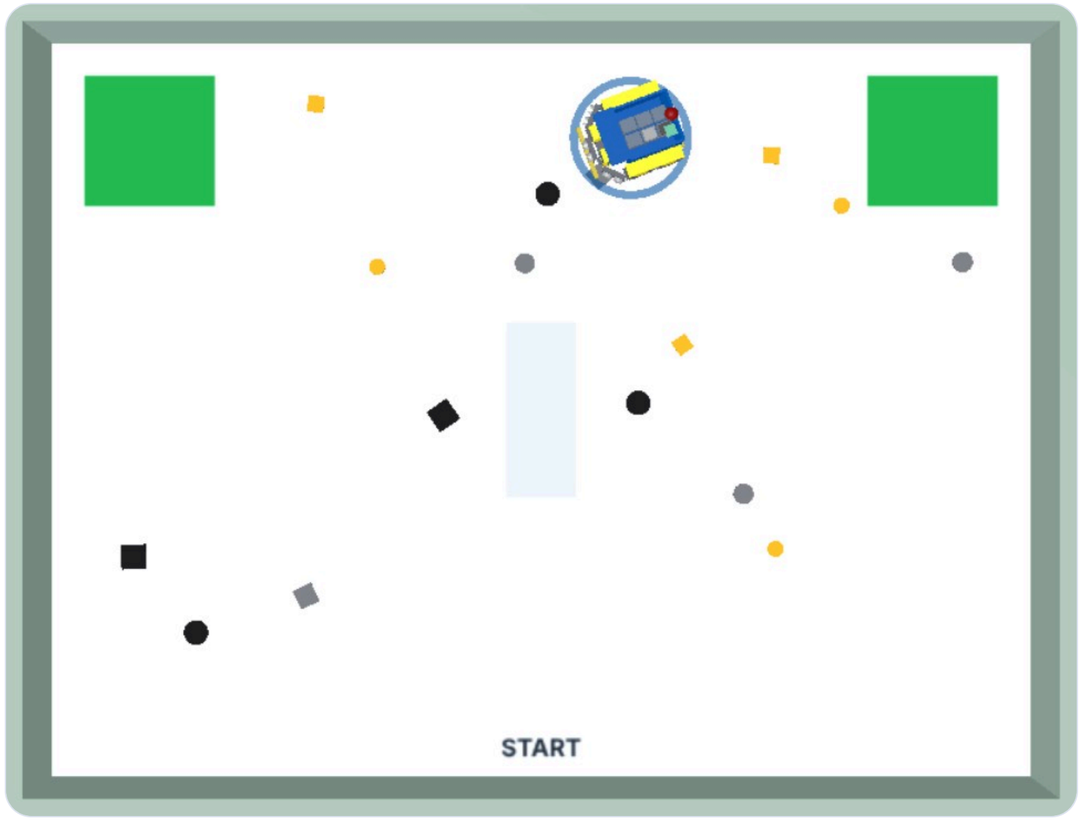
2 IronLeft
left 0–60 · not full



7 GoldRight
right gold · not full



Add **LoadedObjects < 3** to all six collects. Then **Ahead** and **Forward** as before.



Colour Sensors

Left R	108	(CSLeft_R)
G	113	(CSLeft_G)
B	117	(CSLeft_B)

left sees this colour

Right R	228	(CSRight_R)
G	231	(CSRight_G)
B	240	(CSRight_B)

right sees this colour

Robot

Wheels L **0.0** · R **0.0** · LED **2**

Load **2**/6 · Fe 1 Ag 1 Au 0

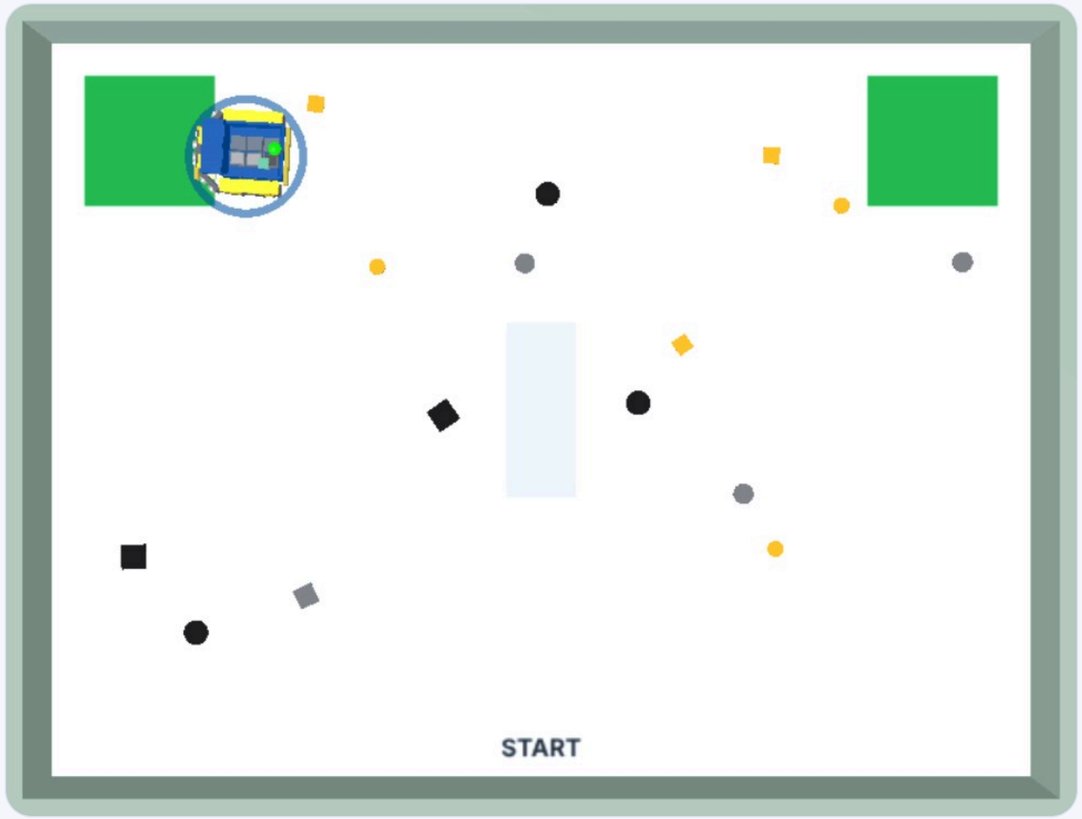
On **collecting 1.7 / 3 s**

STEP 4 · RUN · 0:33

The third object

Load **2** < 3, left sees silver: **SilverLeft**.

After this one, LoadedObjects is **3**: no more collects.



Colour Sensors

Left R	32	(CSLeft_R)
G	159	(CSLeft_G)
B	73	(CSLeft_B)

left sees this colour

Right R	31	(CSRight_R)
G	157	(CSRight_G)
B	69	(CSRight_B)

right sees this colour

Robot

Wheels L **0.0** · R **0.0** · LED **1**

Load **3**/6 · Fe 1 Ag 2 Au 0

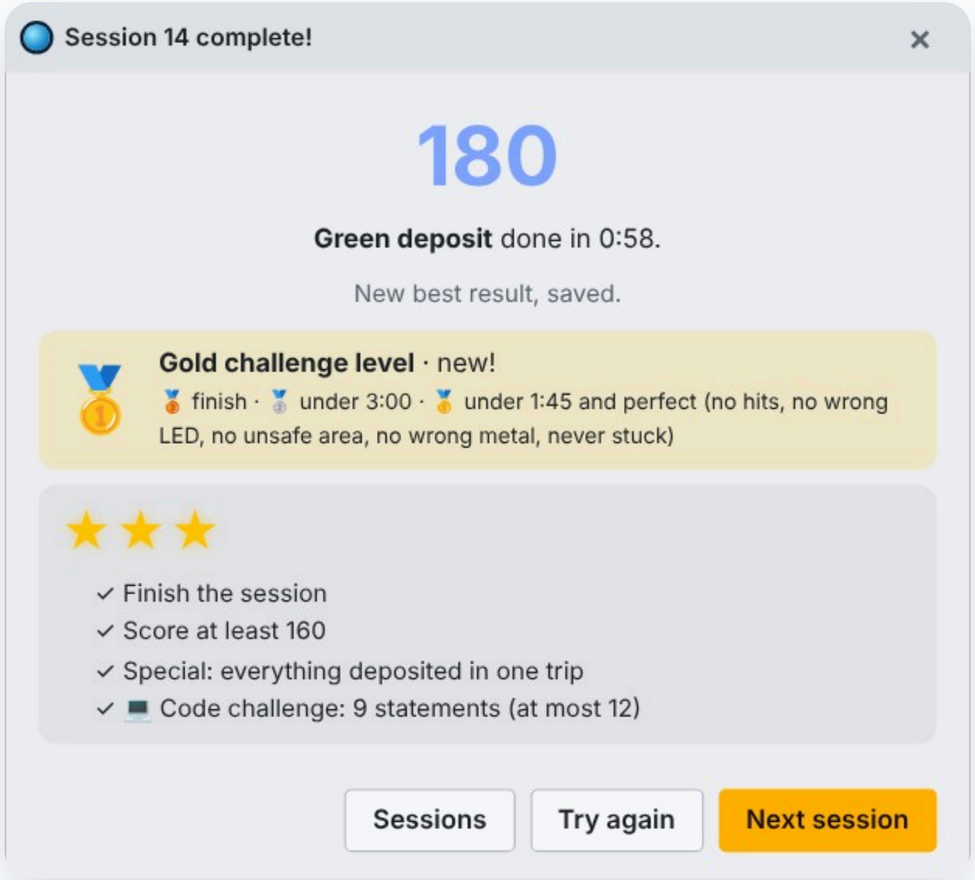
On **deposit area · depositing 2.1 / 3 s**

STEP 5 · RUN · 0:55

Home on green

Both sensors green, load **3**: **Deposit**, green LED.

Full robot drives over metals until it finds green.



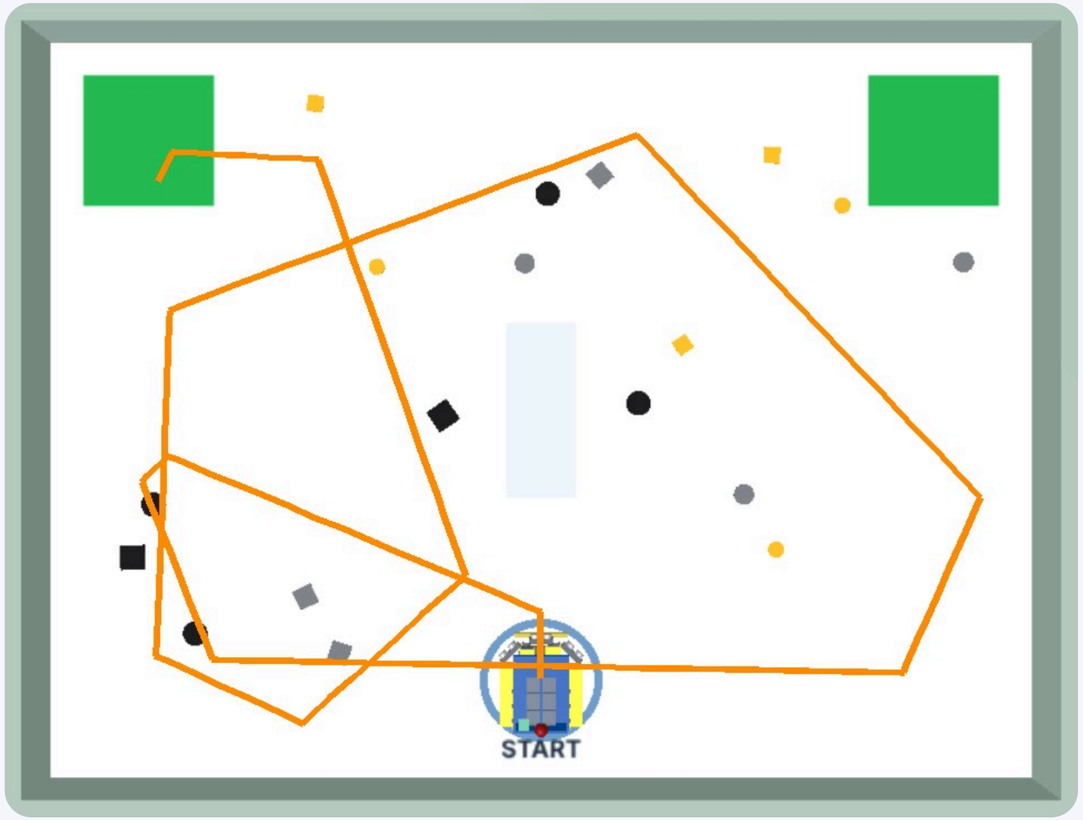
RESULT · TESTED

180 points in 0:58 · Gold

Score · collected 40 + deposited 40 + bonus 100.

Special star · everything deposited in one trip.

Code challenge · at most 12 statements. We used 9.



THE PATH · RECORDED

Collect, then search for green

The path ends in the **top-left** green corner.

One number, **LoadedObjects**, switches the robot from collecting to going home.

DID NOT WORK?

Check first, then tune carefully

What you see	What to do
Keeps collecting after 3	Add **LoadedObjects < 3** to every collect
Drives over green when full	Use **==** (two signs) and check the green range
Deposits at the edge, nothing happens	Green on **both** sensors, not just one
Old program still on the robot	**Build** again, then **Load** on BLUE

NEXT TIME

Presentation 15 · One of each

Exactly one iron, one silver and one gold, with **LoadedIron, LoadedSilver, LoadedGold**.