



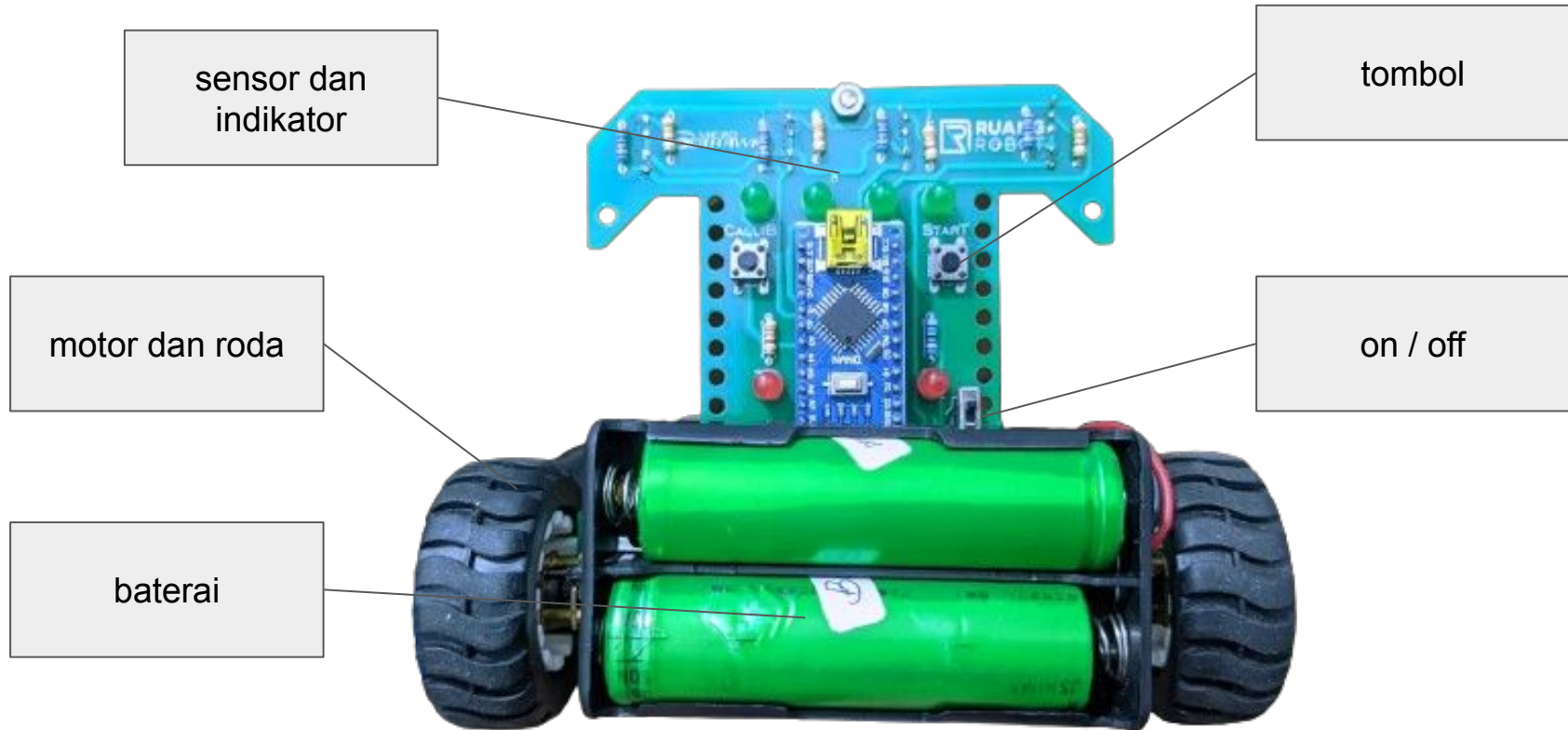
PELATIHAN LINE FOLLOWER ARDUINO DI SMP RAHMAT KOTA KEDIRI

Pengabdian Masyarakat
Prodi Teknik Informatika
Universitas Nusantara PGRI Kediri

Latar Belakang

- Terdapat Materi Lintas Bidang di Mapel Informatika Kelas 7 dan 8 tingkat SMP
- Masih terbatasnya pemahaman konsep dan ketersediaan peralatan pada materi tersebut
- Maka dikembangkanlah modul ajar robotika line follower

Line Follower Arduino



Aplikasi Pictoblox

- menggunakan konsep block programming
- terdapat materi dasarnya di buku informatika smp

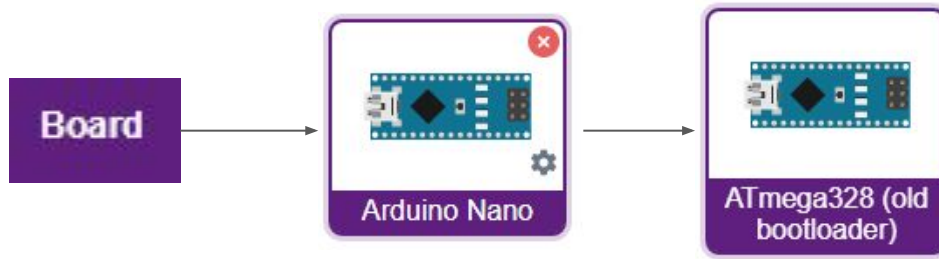
The screenshot shows the Pictoblox application interface with several key components labeled:

- Blocks:** Puzzle-piece shapes used to write scripts. This points to the **Block Palette** on the left, which contains categories like Motion, Looks, Sound, Events, Control, Sensing, Operators, Variables, My Blocks, and Sensors.
- Stage:** The area where the sprite performs actions based on the script. This points to the central **Scripting Area** where blocks are interlocked.
- Stage Mode:** Write scripts for the sprite and boards to interact with them in real-time. This points to the **Stage** tab in the top right.
- Upload Mode:** Write scripts for the board to control them even when disconnected from the computer. This points to the **Upload** tab in the top right.
- Add Extension:** For adding new palettes to the block palette. This points to the **+** icon at the bottom of the Block Palette.
- Script:** A stack of blocks interlocked with one another in a specific order to perform a task. This points to a script in the Scripting Area starting with "when clicked" followed by "if channel 1 touched?", "play drum (9) Claves for 0.25 beats", and "say Hi! I am Tob! for 2 seconds".
- Sprite:** An object, or a character, that performs actions based on the script. This points to the **Sprite1** character in the bottom left panel.
- Backdrops:** Possible backgrounds of the Stage. This points to the **Backdrops** list in the bottom right panel.

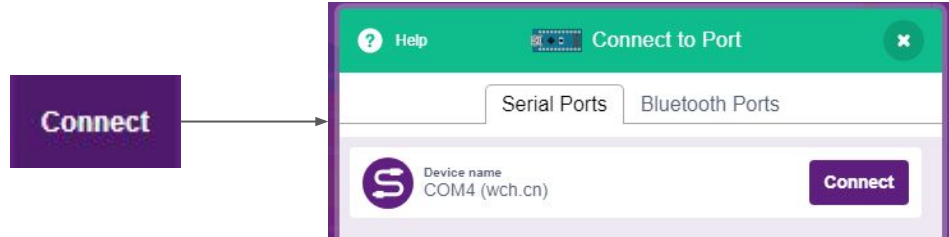
The interface also shows a top menu bar with File, Edit, Tutorials, Board, Connect, and a user profile. The main workspace is divided into the Block Palette, the Scripting Area, and the Stage area which displays a cartoon bear character (Tobi) on a drum.

Koneksi ke Robot

1. Buka Pictoblox
2. Sambungkan Robot dengan Kabel USB
3. Pilih Board -> Arduino Nano -> ATmega328 (Old Botloader)



4. Setelah itu connect



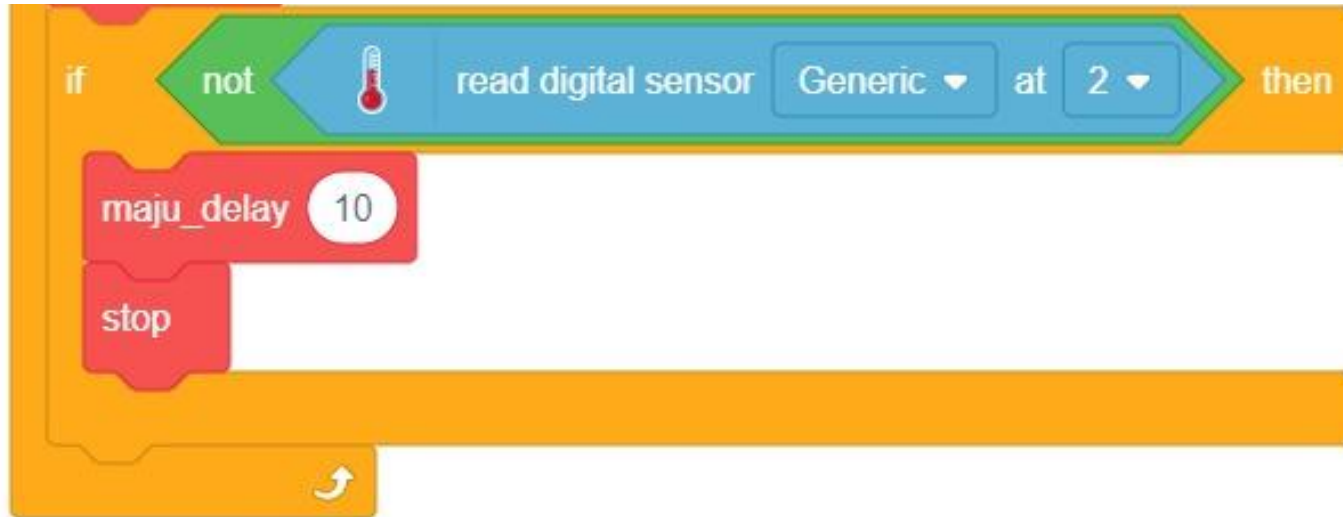
Struktur Program Utama



masukan program disini
abaikan blok program yang lain

Program Pertama (Basic Movement)

Robot berjalan maju selama waktu tertentu setelah itu berhenti



Program Kedua (Basic Movement)

1. maju - belok kanan - maju - stop



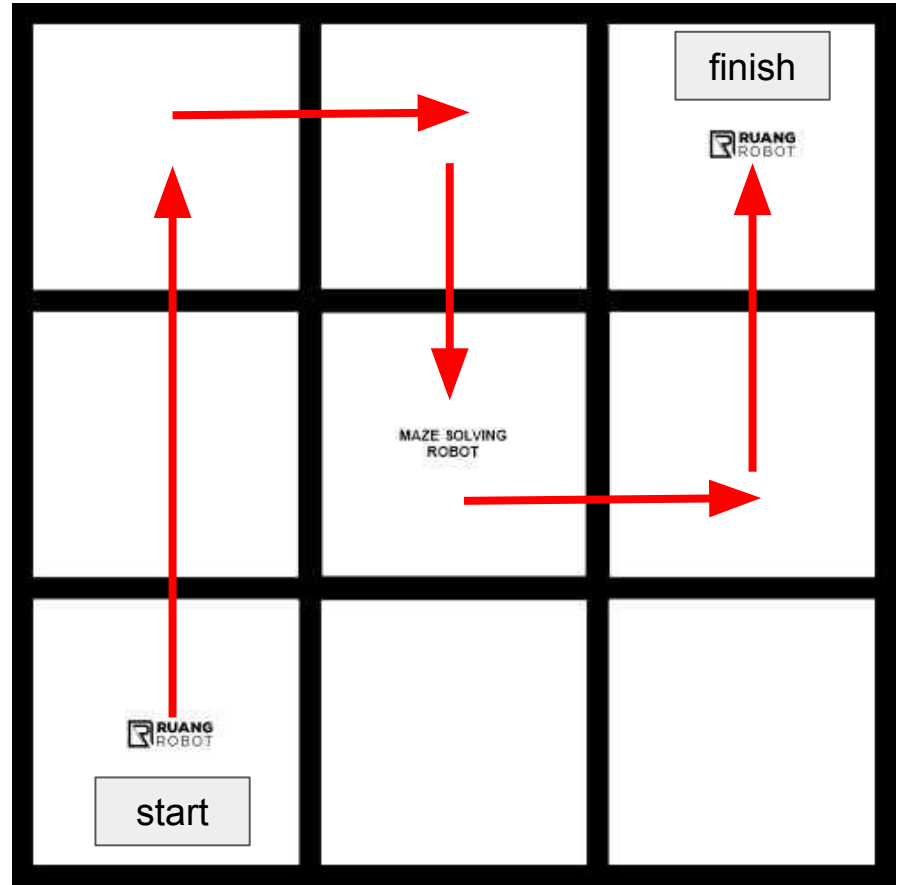
2. maju - belok kiri - maju - mundur - stop



Tantangan 1

buat robot berjalan

dengan jalur seperti berikut

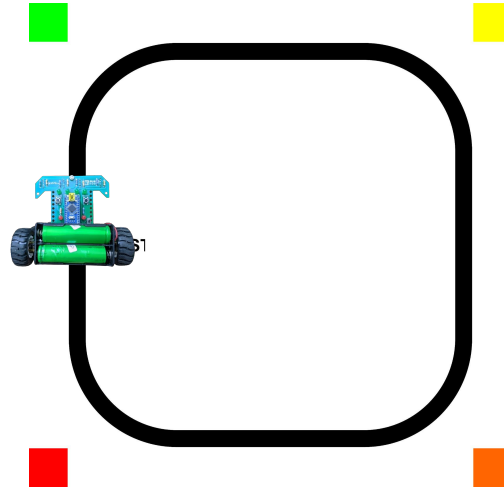
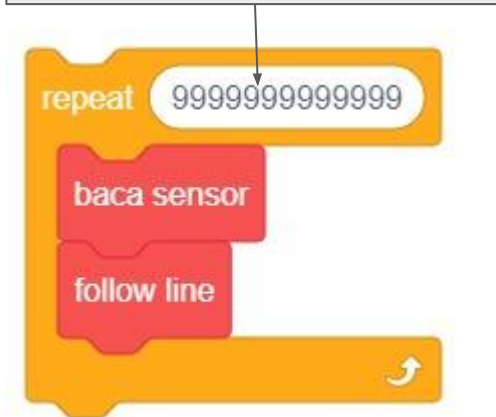


Program Ketiga (Line Follower)

Terdapat 4 Sensor pada robot yang bisa digunakan untuk mendeteksi garis

Robot dapat diprogram untuk mengikuti garis secara otomatis

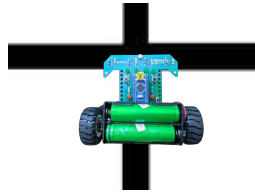
masukan nilai besar agar
semacam infinite loop



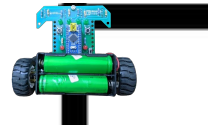
Program Keempat (Maze Solving)

Selain mengikuti garis robot juga bisa menyelesaikan misi maze solving

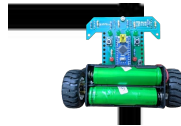
1. percabangan



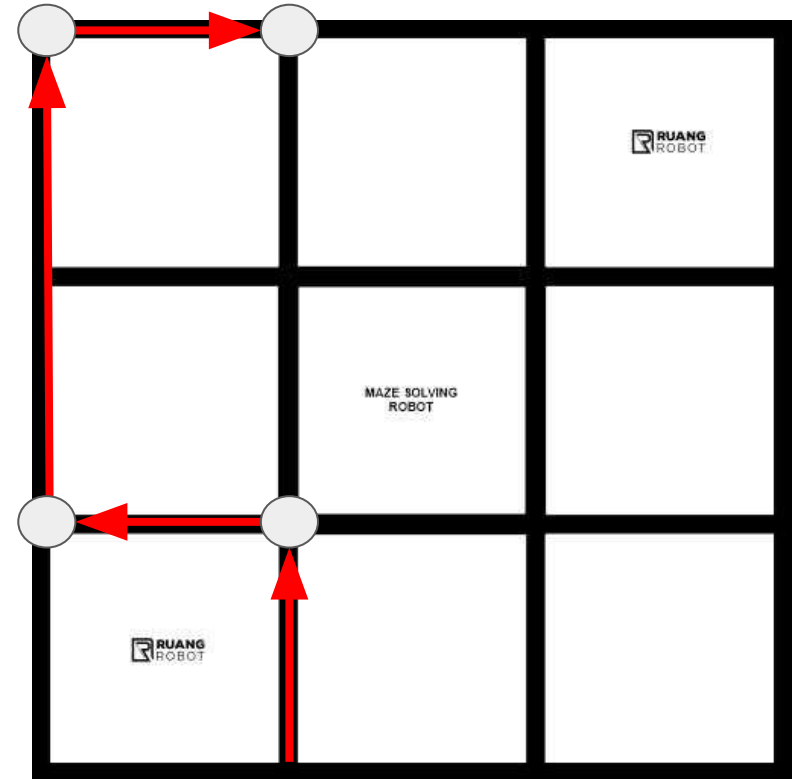
2. percabangan_kanan



3. percabangan_kiri



Program Keempat (Maze Solving)



Tantangan 2

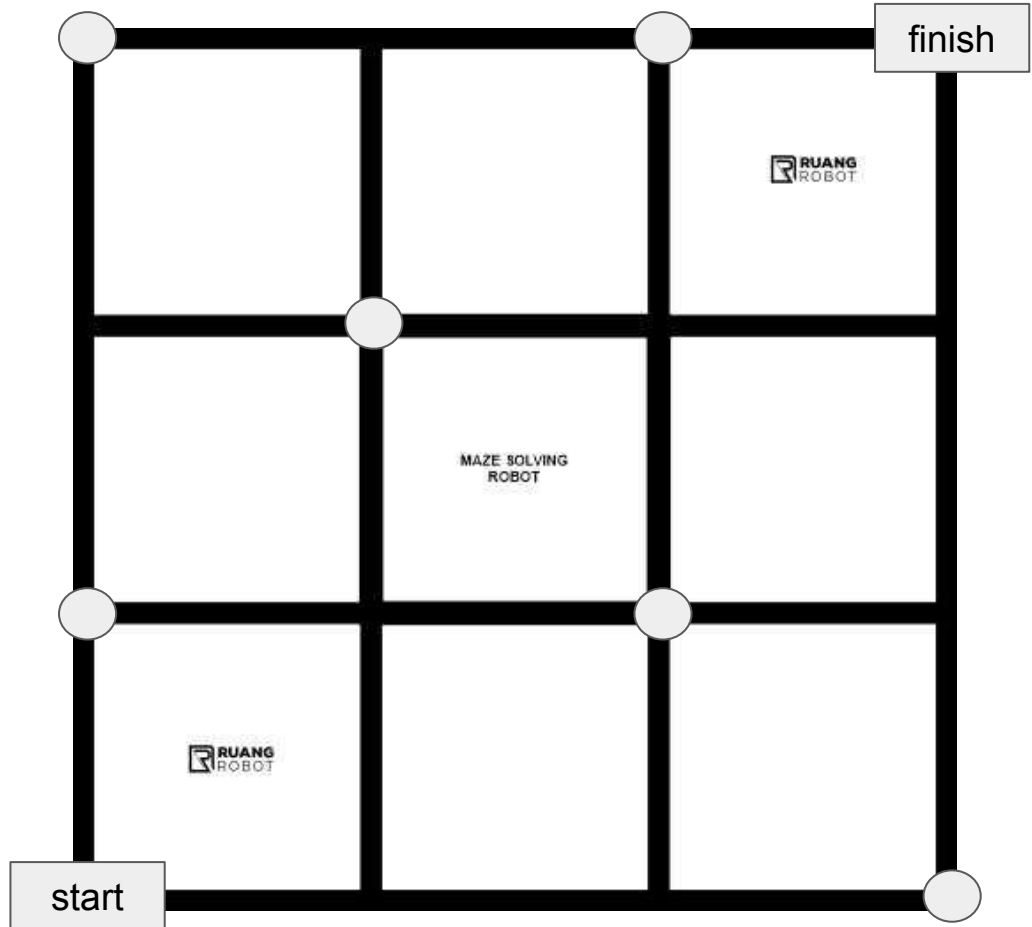
buat robot berjalan
dari start sampai finish
syaratnya harus ambil (melewati)
semua titik poin yang ada

**jalur yang dilewati bebas*

Nilai

robot keluar start +10
robot melewati titik +10 (total 6 titik)
robot masuk finish + 30

Total Nilai 100



TERIMAKASIH