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Topic 6: Challenge 2: Building and Testing a Robot

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Lesson 5.0 Before you start you challenge

- In this Topic you will work on the practical part of your challenge.
- It will implement a Prototype of a Robot to solve a concrete problem in Agriculture called “FarmingBot”
- This challenge fits perfect for you if you are interested in technology and would like to tinker with something.

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What you need for this challenge: The Basic robot kit

- For this option you should purchase the basic robot kit first.
- You will find all specific information you need in this topic in the Script provided in this Lesson material.

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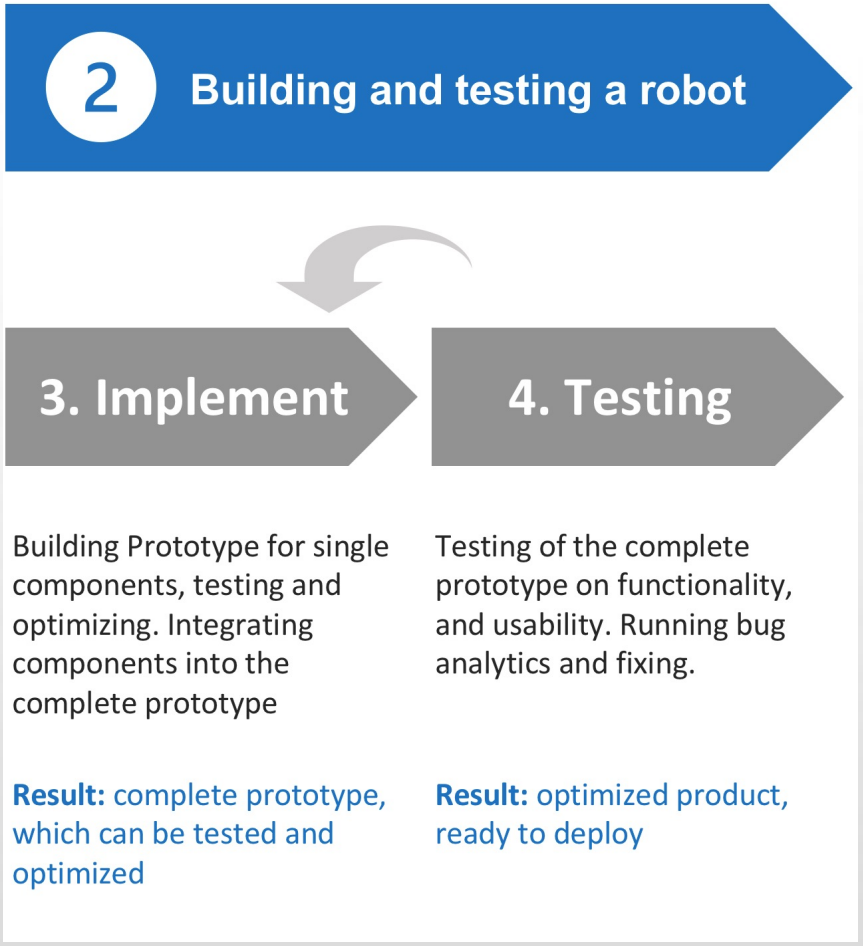
You will be guided through your Challenge

- To develop your robot solution, you can orient yourself by the standardized process model that was briefly introduced in chapter 4.
- As you will focus on Building & Testing a robot you will start in the **phase 3 (Implement)**and go on to the **Phase 4 (Testing).**
- In each phase you will be asked some guiding questions to ensure that all aspects are considered.
- To build your Robot you have then to follow the Instructions and the recommendations described in this lessons.



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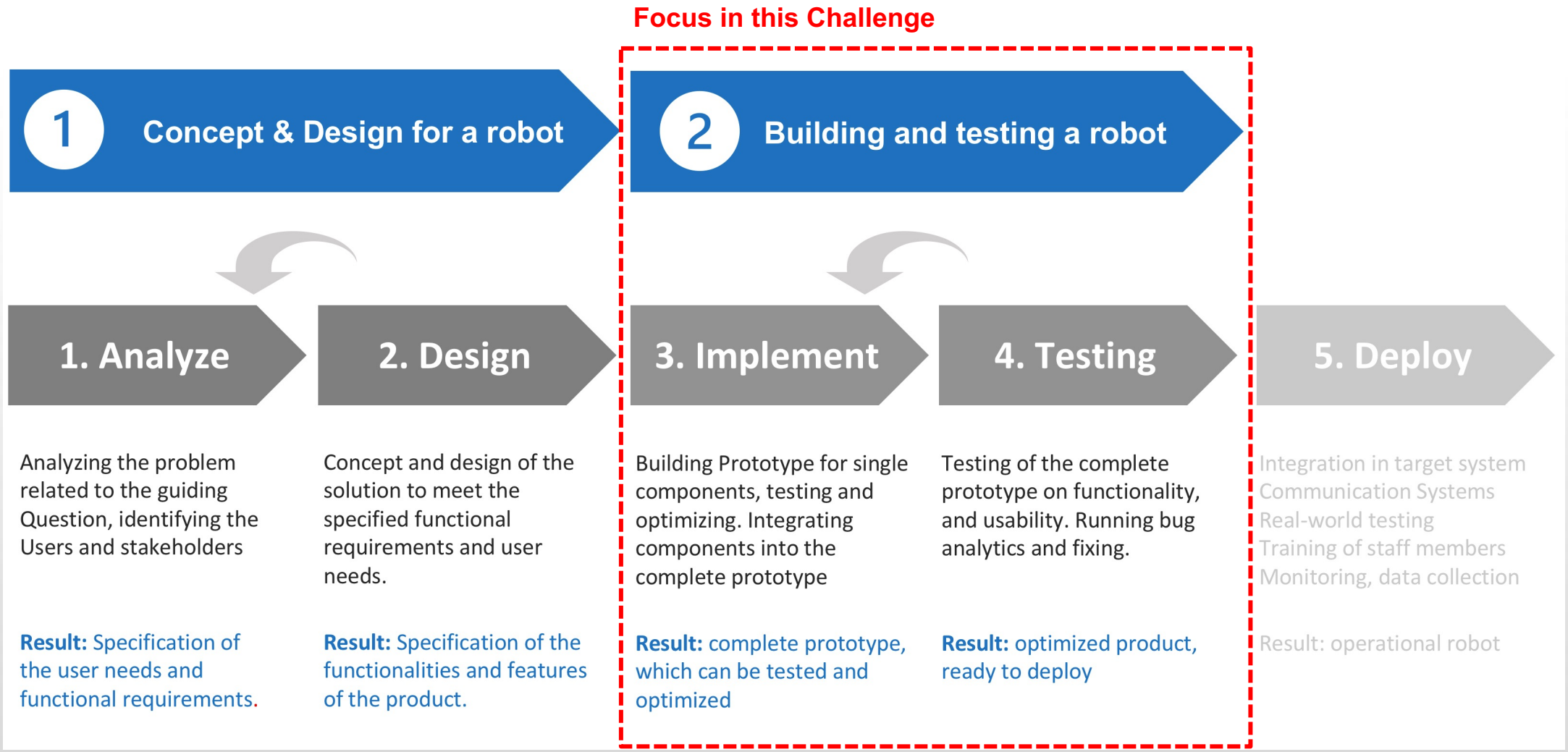

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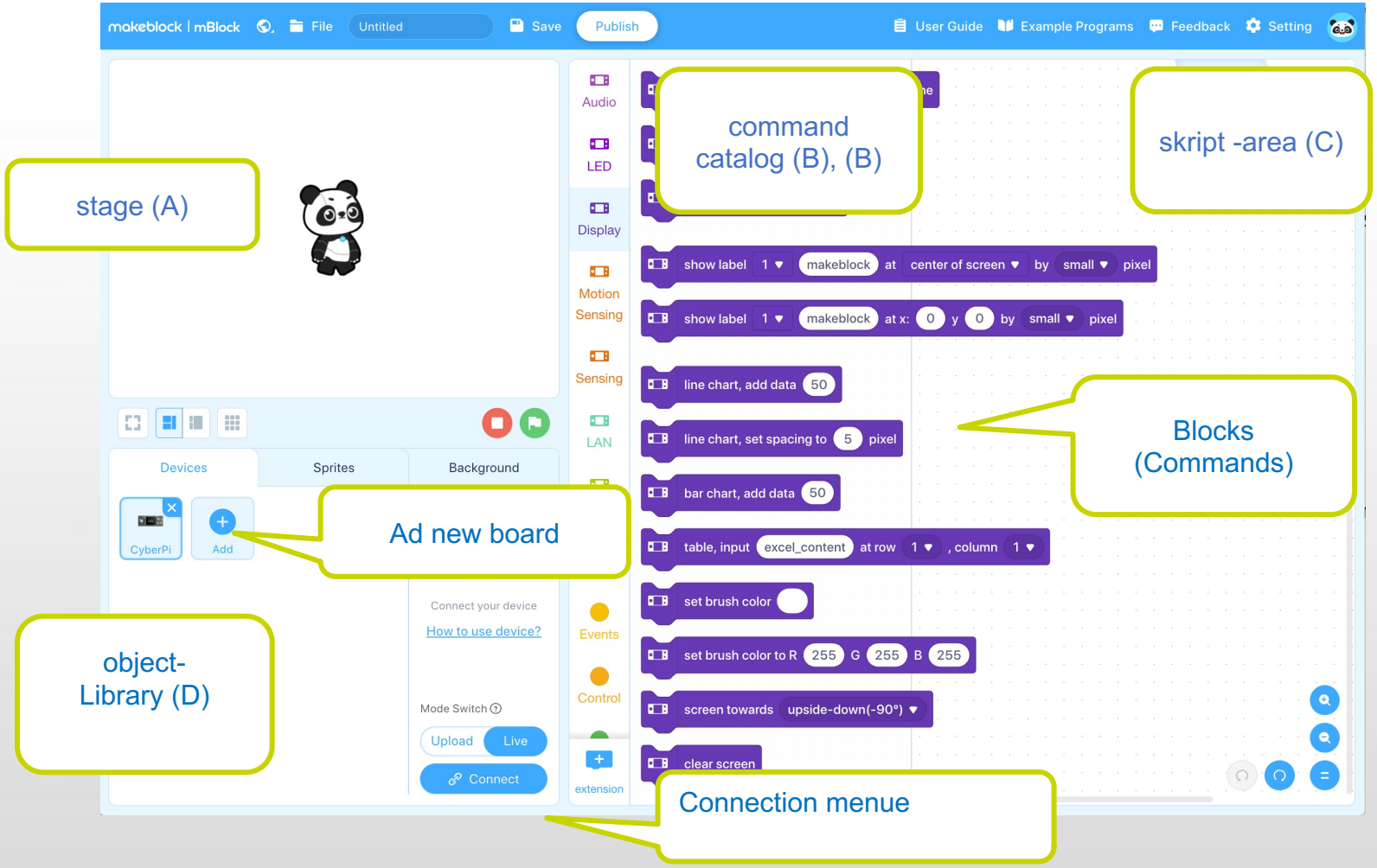
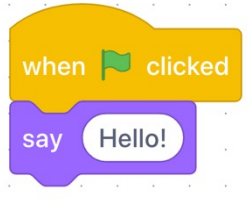
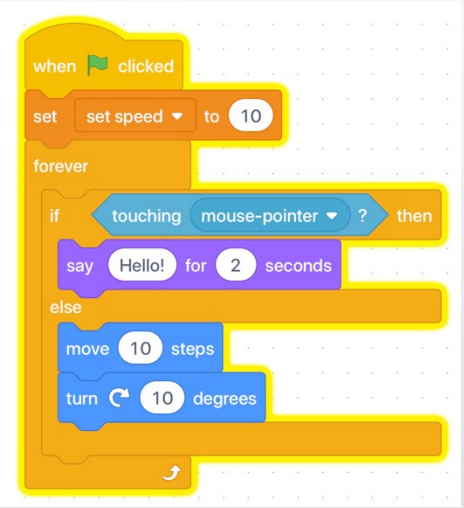
Programming without coding







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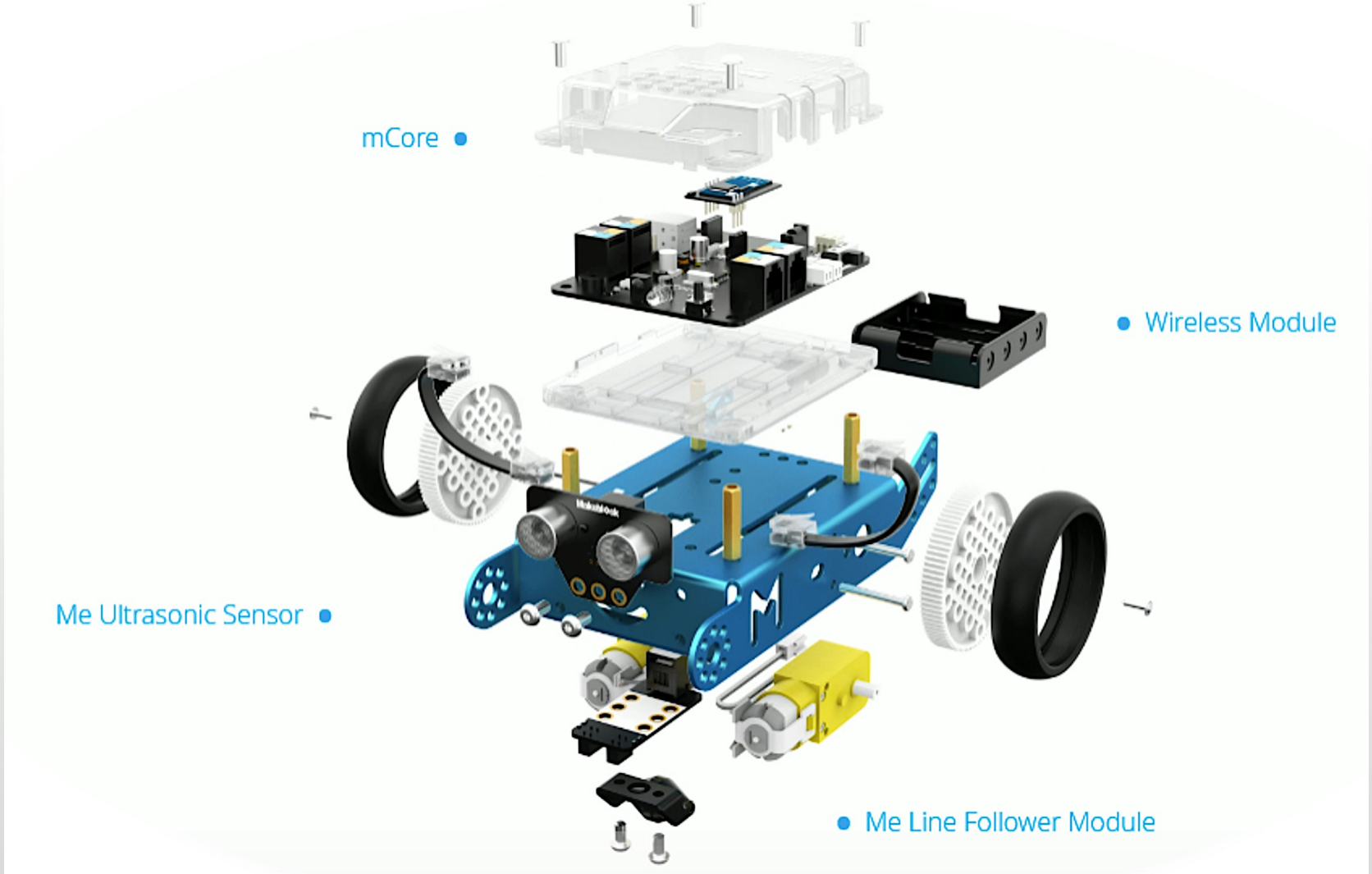
Build your Robot



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connect your Robot to the programming tool

mBot – Robot

mBlock – Non Code Programming tool

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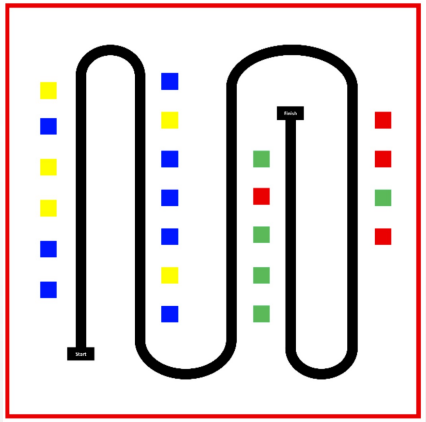
Your Challenge

To do this, they must first be able to follow a set track. Your goal in this challenge is to build a simple miniature bot, your mBot, and program it yourself so that it follows a set track. In this challenge this track will be a line parkour (see illustration) Your challenge will be finished, when you mBot follows from the start to the finish on the black line.



- To accomplish this task, you will have to overcome **four sub-challenges:**
- First you will learn how to program a robot. Don't worry, you will use a simple tool to program your mBot without writing any code just by dragging and dropping. You will start with simple programming exercises before you start programming a robot.
- Secondly you will assemble your mBot and test his basic functions.
- You will than connect your mBot with you programming tool and program it.
- At last you will test your programmed Farming Bot on the test parkour.

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Start Your Challenge

- Now it´s time to start your Challenge first building the robot by assembling the mBot Kit.
- Start reading the Script which guides you step by step through the assembly procedures and the programming part of your Farmingbot

- We wish you much fun and success in your Challenge