INTRO

Good evening, Let me briefly introduce myself. My name is Carlos Rodríguez and i am delighted to be here today to talk to you about my project Running Machine.

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My presentation is divided into 4 parts

I'll start with Components and budget,after i explain you step by step the flow diagram, then i will look at the circuit, and finally the tests

COMPONENTS

I have used these components to make my circuit, the main ones are the motherboard Arduino MEGA and the motor DC

BUDGET

This leads me to my next point, which is the budget. The most expensive i see is the two principals components, you can see that in the next graph which represent the price for unit for each componet. Also, i show you the total price, it's very similar.

FLOW DIAGRAM

Let's now turn to the Flow Diagram. I start explain every state of my diagram step by step, and finally we'll see the complete diagram.

First at all, For each state, we display it in the LCD.

We Start in STANDBY

STANDBY:

- Motor DC is off

In the case, if we push the button START and we are less than 1 meter, we'll pass to IDENTIFICATION

IDENTIFICATION:

- We check the ID with our card
- Write our weight and age
- The Control checks the input data

If the input data is correct we go to the next state, SELECT MODE

Exception

- We have expired the time (15s) to identify
- The input data is invalid

If any exception occurs, we come back to the state STANDBY

SELECT MODE:

- We choose the control auto o control manual with the corresponding buttons

When we choose it, we pass to TRAINING SEASON

Exception

- We have expired the time (15s) to select mode

If the exception occurs, we come back to the state STANDBY

TRAINING SEASON

We constantly read the data from the sensors: temperature, pulse heart, time, presence sensor and speed. The last value depends on our weight and our previous choice, pulse heart it was Auto or potentiometre motor it was Manual. We display this information in LCD.

Exception

- We press the button Emergency or Stop and the speed is the minium
- The presence sensor does not detect a presence within 1 meter

If any exception occurs, we pass to the state STOP

STOP:

In this state we'll stop the motor DC if occurs the button exception or we'll reduce the motor speed gradually if occurs the no presence exception

Once the engine is turned off, we go to the next state DOWNLOAD STATE

DOWNLOAD STATE

Finally, we send the training data to the mobile via bluetooth

Exception

- We have expired the time (15s) to download the data
- We finish sending the data

If any exception occurs, we pass to the state STANDBY

Turning our attention now to the circuit.

CIRCUIT

This is the design circuit of my running machine, i wish it works.

Mainly, we use the board as a control for each signal, input/output data, anything. The management is by software.

Let’s now turn to the tests

TESTS

I make one test for check the exceptions of each state like no presence exception, the button emergency, anything

Another to verify that the data received is collected correctly. At the same time, it is verified that they are displayed correctly on the screen. We do these checks with exception inside of code.

And finally, another to simulate a user who starts to run, after identifying himself and after 5min presses the emergency button. When finished, download the data to your mobile

That’s all i have to say about my project, so thank so much