# Hints to the exercises

One page for each exercise.

First a list of functions to call is provided. For details about the functions, see the *API and sample code* document. The list is not always complete, in the sense that functions already mentioned in earlier exercises may be omitted.

The hint page for an exercise page also in some cases contains further tips about how to do.

# Exercise 1: Run the robot forward 50 cm, …

Useful functions:

set\_m1\_speed

set\_m2\_speed

delay\_ms

stop

We have no way to measure a *length* nor an *angle*, i.e. do it by delaying a certain amount of *time*.

A while loop at the end can be good to make sure that the robot remains stopped.

while(1)

{

}

Perform each if the actions (for example running forward is one action) something like this:

* Set the motor speeds
* Delay some time
* Stop

# Exercise 2: Add a sound before turning

Useful functions:

play\_from\_program\_space(beep);

“beep” is already declared in the pink\_programming.c file, so you can use it like that directly.

# Exercise 3: Play the sound every 5th second

Useful functions:

play\_from\_program\_space(beep);

delay\_ms

Put them inside a while loop to make the sound repeatedly

# Exercise 4: Print the text “Hello!”…

Useful functions:

clear

lcd\_goto\_xy

print

* Clear the display
* Set the cursor to the first row, first position
* Print
* Set the cursor to the second row, first position
* Print

# Exercise 5: Wait until someone presses the middle button (button “B”)

Useful functions:

button\_is\_pressed

The middle button is BUTTON\_B.

Use for example a while loop to repeatedly evaluate the button status, leave the loop only if the function has returned something else than 0.

To make the robot run in a circle, just set the speed of one motor slightly higher than the other.

# Exercise 6: if someone presses the right button (“C”), run like a snake

Useful functions:

button\_is\_pressed

The right button is BUTTON\_C.

An if-statement can be useful here to see if a certain button has been pressed or not.

# Exercise 7: Print the value of the line sensors

Useful functions:

read\_line

print\_long

Perform this inside an infinite loop (while).

Add a delay inside the loop, otherwise the text on the display becomes messy.

Remember to use the special number printing function (print\_long).

And most importantly, don’t forget to put the robot in a proper position on the track before it calibrates the sensors, otherwise the values will not be good at all.