Bicycle Computer Project

with Arduino

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What is For?

This project aims at making an efficient and low cost bicycle computer. It can be modified easily for different purposes.

Requirements

- Arduino
- TFT Screen
- Hall Effect Sensor
- Some kind of magnet
- Bunch of resistors

How to Build?

Connection of TFT Screen

TFT screen with SPI communication protocol has 8 pins;

Number	Pin Label	Description
1	GND	LCD Power ground
2	VCC	LCD power supply is positive (3.3V)
3	SCL	LCD SPI bus clock signal
4	SDA	LCD SPI bus write data signal
5	RES	LCD reset control signal (Low level reset)
6	DC	LCD register / data selection control signal (Low level: register, high level: data)
7	CS	LCD chip select control signal (low level enable)
8	BLK	LCD backlight control signal (high level lighting, if you do not need control, please connect 3.3V)

Table 1: TFT Screen Pins

In Arduino code, TFT Screen pins like this;

Arduino Pins	Names
13	TFT_SCL
11	TFT_MOSI
10	TFT_CS

9	TFT_DC
8	TFT_RST

Table 2: TFT Screen Arduino Connections

With these information TFT Screen is easy to connect (different screens can be found with different communication protocols, number of pins and pin labels).

Note: We need connect a 3.3 kOhm resistor each for SDA, CS, DC and RES. Because Arduino Nano's controller chip is working with 5 Volt.

Connection of Hall Effect Sensor

Sensor needed to connect any digital pin. It is essential to make connection with digital pins instead of analog. Because Arduino return a 0 or 1 while using digital pins for read. But return values from 0 to 1023 while using analog pins for read.

Picture of Build