Instituto Superior Técnico

HackerSchool

Initial Sprint Report
Free Libre Open Source 3D Printer

Manuel Soares, LEEC aka Nuclear Monk,
João Barreiros C. Rodrigues, LEEC aka Ex-Machina,
Nuno Tribolet Abreu, LEEC aka Wone_Bone,

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1 Introduction and Motivation

2 Theoretical references for the Project

https://www.manualslib.com/manual/1051705/Beeverycreative-Hello-Bee-Prusa.html?page=2manua

3 Project specifics

3.1 Project insertion on the Hacker subject

The project focuses on three main Hacking Schools:

3D Modeling and printing: A considerable part of the printer design and upgrades are based on 3D printed, PLA parts, that have either been deformed or completly broken due to heat, faulty printing or mechanical forces and meed to be replaced. Upgrading the printer also requires such mods.

Hardware hacking:The power supply controller and connector has been lost. In order to reuse it reverse engineering, hardware hacking and hardware upgrading will be required.

Programming:In order to control the printer efficiently a compatible Marlin version has to be flashed. Marlin can also be moded and adapted through C/C++ scripting.

3.2 Task planning and management

3.3 Task planning, partial and total ETC

Task #	Task Description	Main appointed maker(s)	Task Dependencies	Specific needed materials	ETC	% of completion to date
0	Inventory the printer's corpse, take note of missing pieces	Full Team	N/A	N/A	1 day	100 %
1	**Simple electrical repairs**: x-motor junction and re-do isolation	João and Nuno	0	Soldering Kit	2-3 days	30%
2	Model broken 3D Pieces	Manuel and Nuno	1	1-2 weeks	None	0 %
3	Print 3D pieces	Manuel	2	1 week	PLA, working 3D printer	0%

4	**Simple Mechanical repairs**: Replace squared bearings, clean and re-lube axis	Full Team	0	Bearings, WD-40	1 day	0%
5	Flash Marlin firmware into Keyes board (test phase)	Full Team	0	None	1 day	0 %
6	**Advanced electrical repairs**: Repair Power Supply module, possible Keyes board repairs	João	1, 7	Soldering kit, other specific electrical components	1-3 weeks	0 %
7	Mod Marlin firmware, flash moded Marlin	João e Manuel	7, 6	N/A	1-3 weeks	0%
8	Assemble Printer	Full team	All of the above	N/A	1-4 days	0%
9	Rig Octoprint enviroment and setup	Full team	All of the above	Camera	1 week	0%

Total ETC: Around one semester

3.3.1 Materials

Material Description	In Storage? / Available	Cost	References
Soldering Kit	Yes	N/A	N/A
General mechanical components(screws, bearings, lube)	N/A	N/A	N/A
Printer PLA	Yes	N/A	N/A

Other materials will be request along the project, acording to board and power supply specifications.