Project Overview

Project title	hillhacks - hacking and making in the Himalayas
Type of grant	capacity building and outreach
Grant recipient	Hillhacks and Ghoomakad, VPO Rakkar, Sidhbari, Dharamsala, Himachal pradesh, 176057 – http://hillhacks.in
Dates covered by this report	11 – 05 – 2014 / 26 – 11 - 2015
Report submission date	27 – 02 – 2015
Country	India
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Team members (list)	Tod, Alex, Anand, Andreas, Anish, Aruna, Cherry, Cindrella, Dhruv, Floatec, Freeman, Gaurav, Hari, Himanshu, John, K.M.Lo, Lucie, Kiran, Kirsty, Kishan, Kristen, Mallick, Manish, Max, Minal, Nitesh, Nootan, Numaan, Praveen, Rainer, Rasagy, Santosh, Sastry, Shreyas, Siddardha, Tavish, Tenzin, Troy, Vikaz, Vikram, Yuvi, Zainab
Partner organizations	(See list below, was too big to enter here)
Total budget approved	4223 USD
Project summary	The hillhacks movement successfully brought together Indian, Tibetan and international hackers and makers to connect and share knowlegde and developments, primarily in the fields of technology, arts, society and education. We conducted technology, art and education workshops, followed by a conference and maker exhibition in Dharamsala/India for nearly three weeks in October 2014. The event was surrounded by months of pre- and after-events across various cities of India and Nepal. The two week gathering brought together over 70 hackers and makers from across India and world, and over 300 people from Dharamsala, including children and adults from both Indian and the Tibetan community. The gathering organically led to new relationships being formed and the start of few interesting projects around solar energy, a new hackerspace to experiment with fusion of technology and creativity with primary education in Dharamsala and also open source electric unicycles, to mention a few. This made Hillhacks unique as an event which is more about coming together to do things to make the world a better place, rather than just talk about it.

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List of Partners

Donors:

Network the World http://aj.networktheworld.org/
NLnet foundation https://nlnet.nl/
WebWeWant https://webwewant.org/
Chaos Computer Club e.V. / Wau Holland Stiftung http://ccc.de/ / http://wauland.de/

Uplink:

Air Jaldi http://main.airjaldi.com/
Vayudoot http://www.vayudoot.in

Pre-event partners:

CCCB (Berlin) http://berlin.ccc.de/
Centre or Internet and Society (Bangalore and Delhi) http://cis-india.org/
Dalai Lama Institute for higher education (BLR) http://www.dalailamainstitute.edu.in/
Entropia (Karlsruhe) https://entropia.de/GPN14/
Fablab (Ahmedabad) http://fablab.cept.ac.in/
Hasgeek (Bangalore) http://hasgeek.com/
IIT Madras (Chennai) http://www.iitm.ac.in/
IITK (Kanpur) http://www.iitk.ac.in/
Karkhana (Kathmandu) http://karkhana.asia/
Makersasylum (Mumbai) http://makersasylum.com/
muCCC (Munich) http://muc.ccc.de/
Sarai Institute (Delhi) http://sarai.net/

Support in various ways:

Chaos Computer Club http://ccc.de/
mindgrep http://mindgrep.com
Infinity http://hackerspaces.org/wiki/infinity
Geekroom http://geekroom.tibetangeeks.com/
Hackconf http://hackconf.in/
Makerfest http://makerfest.com
MIT Media Lab in India http://india.media.mit.edu
Mozilla https://mozilla.org
NULL open security group http://null.co.in/
White Crane Trust http://diff.co.in

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Project Summary

hillhacks provided space for various temporary hackspaces with technology, art and education workshops, followed by a conference and maker exhibition in Dharamsala/India for nearly three weeks in October 2014, surrounded by months of pre- and after-events.

This region in the foothills of the Himalayas is directly affected by a concrete idea of freedom as it hosts the Tibetan Community in Exile. As a group of self-motivated and independent hackers and makers from India, Tibet and other places around the world we educated local children and the interested general public. We helped enable them to think critically and creatively with the tools and knowledge they were exposed to.

Likewise important, hillhacks brought together the Indian and Tibetan hackers and makers to have more self-motivated, free and open developments in technology. We believe that the whole subcontinent has the need for a gathering of the open information society, focused on the love and joy of free and open source technology and knowledge: doing things just for the interest, curiosity and social progress!

In the build up to the main event, from May until September, we conducted the "hillhacks pre-events" across 10 Indian cities in India as well as in Nepal (Kathmandu) and Germany (Berlin, Munich, Karlsruhe). Various formats and themes were explored. This included Lighning Talks discussing, demonstrating and exploring various topics around creative use of technology, many Cryptoparties and other opportunities to learn about protection online and last but not least, üresenting and developing ideas of a Web We Want. The number of participants varied very much from five persons up to around 50, but in general it was around 20-30 people attending and participating.

In October the main event took place in the Dharamsala region:

From 10th of October onwards, about a dozen volunteers and technologists held workshops at local primary, secondary, and technical schools and at our "basecamp" location, Infinity Hackbase. The topics included soldering, arts and making, web development, security and protection online, and various other topics. We also hosted a Saturday afternoon of general introductary sessions on OpenStreetMap, Wikipedia, Rasberry Pi, FLOSS and cryptography at The Clubhouse in Mcleod Ganj, followed by a full day cryptoparty on Sunday the 19th October. For those we directly invited and addressed the general interested public, e.g. via posters that have been hanged up in the Region two weeks before. From 19th October onwards the whole group - at this time around 50 people already - moved from the hackbase in Rakkar in lower Dharamshala to the main venue in central Dharamshala. Accomodation (tents and shared rooms) and food was in both place very simple and traditional, to keep the costs affordable for everyone and the spirit high. Processes like "wash your own dishes" as well as our own trash management also kept the contributional spirit of DIY always on top.

Besides learning and teaching hillhacks is also about the joy and mindfulness of sharing ideas about making and hacking. As a society, we are actively shaping our world: If we use the power of our combined heads, hands and hearts - we we have more knowledge then all the companies and governments together.

For that reason the workshops, school teachings and other activities culminated in a conference of like-minded people in the days from 23rd to 26th October. The gathering in a temporary hackerspace crammed with laptops, hardware and tools, shared ideas, feeling and knowledge with each other. People built bridges between the regional community and the worldwide technology and information security community.

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Schedule

This Schedule has not included everything, but will give a good idea what we've been up to:

Pre-events, May-September

11th May – India, Dharamshala, Infinity Hackbase
Kovalam Ezhuthu Kalari, mentored vocational education and how to make a building out of sustainable materials?
(Note: This talk led into a visit of Kovalam of around 10 people in November 2014, and the first plans for a bigger event in November 2015 to create local impact, especially in collaboration with a local schooling initiative, see more in the podcast on http://hillhacks.in/blog)

21st + 22nd May – India, Kanpur, Indian Institute of Technology (IIT)
Classical Cryptoparty, as well as a session and presentation with the people from http://hackconf.in/, and some more talks and lectures on Free and Open Source in Technology

3rd June – India, Mumbai, Makers asylum (local Makerspace Initiative)
Lighning talks surrounded by interesting discussions on various topics, e.g. RFID attendance system, Telescopes in the Hills, Lock Picking, 3D Printing, Arduino, Crypto-Currency, E-Paper Badge. CNC milling machine build, Augmenting reality for education, and other education projects

11th June – Germany, Lake Constance, SpaceTech
Cryptoparty, a classic version.

19th June – Germany, Karlsruhe, Hochschule für Gestaltung
Cryptoparty while GPN, an event of CCC Karlsruhe

21st June – Germany, Karlsruhe, Hochschule für Gestaltung
Presentation on hillhacks at GPN, an event of CCC Karlsruhe (Note: This event led into the participation of some Germans at hillhacks)

8th July – Germany, Berlin, CCC Hackerspace
What kind of Database state is the Indian Government creating? A discussion of the Aadhaar project as a digital identity platform for governance

18th July – Germany, Munich, CCC Hackerspace
What kind of Database state is the Indian Government creating? A discussion of the Aadhaar project as a digital identity platform for governance. (Note: Both talks have been conducted by a researcher from Sarai, Delhi, and led into very interesting discussions)

10th August – India, Dharamshala, Infinity Hackbase
Celebrating OpenStreetMap 10th anniversary: Mapping and editing of Rakkar, Mohli and Fatehpur (Norbulinka) (Note: This event led into a wonderful map of the region, see open street map)

16th August – India, Dharamshala, McLeodGanj, NULL Meet
hillhacks security&protection track as part of the monthly NULL Meet

30th August – India, Bangalore, Hasgeek
Various Lightning talks surrounded by interesting dicussions, e.g. on Hospital information system, transparency in policing, building a quadcopter, CMS killer in JS, the WebWewant, which ended in a very frutiful discussion of the internet in the post-snowden era.

31st August – India, Bangalore, The Centre for Internet and Society
"Participate!", various meets with different stakeholders around the event in the Himalayas, e.g. Arduino-India, Mozilla, Internet4change and others

1st September – India, Bangalore, Dalai Lama Institute for Higher Education (Tibetan University)
Cryptoparty (Note: This event also led into a collaboration between the Free Software Movement

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Karnataka and the Dalai Lama Institute for Higher Education)

4th September – India, Chennai, Indian Institute of Technology (IIT), Centre for Innovation (CFI), On hacker- and makerspaces

5th September – India, Kolkata
Spontanous get-together of a bunch of Geeks in a private home. Talks on various FLOSS, the WebWeWant, Crypto and community topics till 5AM in the morning. (Note: This event led into a hackerspace initiative in Kolkata)

6th September– India, Ahmedabad, FabLab CEPT, CEPT University
Presentation on hillhacks by kondi, talk on makerfests by henry followed by discussion on hacker conferences and other topics.

6th September – Nepal, Kathmandu, Karkhana Hacker- and Makerspace
Cryptoparty, a classic version.

8th September – Nepal, Kathmandu, Karkhana Hacker- and Makerspace
WebWeWant - Internet, where do you come from and where to you go?

13th September – India, Delhi, The Sarai Programme, Center for the Study of Developing Societies
3D printing Introduction and workshop, WebWewant, Lighning talks, DesiSec screening (Cybersecurity movie of Centre for Internet and Society

20th September – India, Hamipur, National Institute of Technology (NIT),
Software Freedom Day Celebrations Talks and workshops on Cryptography, Open street maps and hillhacks hosted by GLUG-NITH

Main event, 10th-26th October:

11th October – Security Meet in McLeodGanj

Education and Workshops (10 - 24 October)

Kangra Polytechnic School
58 students doing diploma in IT from local Government school came to Infinity Hackbase to attend a session by eight Hillhackers. Most of the students are from poor, underprivileged families, often the first ones from their families to step out for education. They do not know much about Informtation Technology, Corporate world, Open Source etc. The Hillhackers shared with the students about open source, entrepreneurship, responsibility to the society and exploring the path of their heart, versus the commonly chosen path dictated by mass social and cultural psychology.

Woodwhistlers School
Shared science, music, math and other topics with pre-school and elementary students for four days. Topics included Paper Circuits, Makey Makey, Electromagnets, Chisanbop, Mapping, Web Basics, Improvised Orchestra, and more.

Tibetan Children's Village
Conducted 7 days of workshops with high school students from the TCV school system. Topics included: Arduino, Java processing, soldering, solar lanterns, ciphering, circus education, web development, Raspberry Pi, Wordpress, Web We Want, Python, Scratch, Tails.

Rakkar School
Invited local primary students to the conference location for making and learning. They participated in a number of workshops and demonstrations including making solar lanterns, 3D printing, circus games, science experiments, playwriting and puppet making and more.

Public Conference at The Clubhouse

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A half-day introduction to many of the topics presented in greater depth during the conference, including mapping, Web We Want, Raspberry Pi, Wikipedia, Firefox, and cryptography.

Mozilla Webmaker for local women
Awareness about Women in Mozilla and Open Source. Also about OPW (Outreach Program for Women) internship platform for college students. Audience would be learning about basic internet, How it works then basic HTML web page making and video making through Webmaker tools. Also paper prototyping of thimble.

Mozilla Userability, Webmaker and Firefox OS in local school
Paper prototyping and testing the user interface for open source projects like Firefox OS, Ubuntu, Libre Office. Also the Audience lears about basic internet, How it works, basic HTML web page making and video making through Webmaker tools. Also Mozilla and it's various non-code contribution areas. Why should you get invoved with open source projects? L10N, Quality Assuarance, Advocacy, et cetera.

Cryptoparty in McLeodGanj
Learning how to protect online communication and activities on a daily base! Getting to know the very basics of encryption, and directly learning how to use them. Introduction on basic concepts of cryptography: e.g. how public-key-encryption works, which can be used for email encryption. What software needs to be installed and configured to directly use it. Other topics are e.g. secure webbrowsing via Tor: The concept behind it will be introduced as well as the actual way to use it. Very important is also short-messaging (like whats-app etc) and use of protecting methods on mobile phones. While learning what is there, we also directly installed and used it!

Events at and around the Hackbase were so various, that it is not easy to summarize. They also included the preperations, tests and pre-producing for the events outside / at schools etc:

Sugarlabs, wordpress, carpentry, knots, gardening, pentabug (robot), painting (art), tuktukcinema, open street map, developing and producing power plugs, water pump automatisation, composting, repairing hardware, ...

Main Conference (24-26 October)

Keynotes:

- Tech & Freedom
- Understanding Open Source
- Internet Retrospective

Talks:
Spirit of hillhacks/welcoming, Makerspace Management, Capture the Flag, Skillshare & Coworking, Gcompris, Future of User Interface, Hardware Hacking, Make Safe Online, DIY Security Ops Center, Tuk Tuk Cinema, Secure Online Behaviour, Data Art, Generative Art, Bug Hunting, Darknets, Ticket Talk, Robotic Art, ...

Apart from these talks, there were 3-4 flashtalks every evening on varied subjects around art and technology, but also very much social and culture.

Hands-on workshops and demonstrations:
Introduction to Scratch, Open Source Firewall, Stretching for Geeks, Solar Lanterns, Soldering basics, 3D Modelling, Expeyes Science Lab, Game Development

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After-events:

30th Oct - 3rd Nov – Dharamshala international film festival:
We supported before, during and after the event with helping hands and expert knowledge, e.g. with website and other online tools, lights and decoration and the usual volunteering tasks. Also we had a stall on site to present hillhacks and its activities to the wider audience of the Dharamshala international filmfestival.

4th Nov - 9th Nov – Online publishing with wordpress
One week long workshop with local youngsters and grown ups, e.g. how to publish online via wordpress.

14th Nov – Kickstart hillhacks 2015 meeting in Bangalore
Getting together to start the activities for planning and organizing next hillhacks. Similar (much smaller) meetings were held in other Indian cities.

16th-26th November – "Hacking at the beach" - "Seahacks" – "s'hacks"
A smaller group went down to the very south of India to explore the region for a possible "s'hacks" event in November 2015 in the region. First collaborations with local schools were established.

It needs to be added that also in the following time people conducted events under the hillhacks-flag in various places, which still continues!

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Expenditure Review

	INR	USD	comment
Acco, food, venue(s)	3,22,109.00 ₹	$5,195.31	Clubhouse, countrylodge, Rakkar
Equipment Rental	42,910.00 ₹	$692.10	internet, sound, tents, chairs
Infrastructure	30,422.00 ₹	$490.68	power plus, tools, tent
Material	17,142.00 ₹	$276.48	stationary, shirts, posters, bamboo
Transport + volunteer	1,91,620.00 ₹	$3,090.65	local transport, Travel support, volunteer food+acc
DIFF	2,600.00 ₹	$41.94	Film Festival transport and material
Equipment (bought)		$1,532.34	Private funding, was bought in USD
Workshop materials		$8,600.00	Private funding, was bought in USD
Pre-events	54,706.00 ₹	$882.35	venue, travel, acco, equipment rental
SUM		$20,801.84	

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Project outputs, communication and dissemination activities

Information sharing:

- twitter twitter.com/hillhacks and #hillhacks as unique hashtag
- wiki hillhacks.in/index
- blog hilllhacks.in/blog and other blogs on hillhacks.in/blogs
- calendar hillhacks.in/calendar
- offline events on various places

Communication and collaboration:

- mailinglist: hillhackers@hillhacks.in, around 150 subscribers (TODO, re-check!)
- IRC: #hillhacks on OFTC, around 30 ppl average
- mail: mail@hillhacks.in general contact via ticket tracker system
- voice: group via mumble, one-to-one cvia ostel, jitsi, SIP and GSM
- Files: owncloud, scp
- etherpads, ethersheets, zerobins, github, dudle, trello

Note: **All software is FOSS, all services provided by private persons or organisations** or similar groups (except trello, which we hardly used anyway). See more on the use of those tools below.

See also list of tools and some documentation on this here: http://hillhacks.in/tools

Recipients:

There are various groups of recipients. There was barely any border between leaders, team members, participants, attendees, visitors and recipients; caused by the FLOSS approach of conducting the event itself. Only the schools we visited as well as the events for the general public could be called "recipients only", but even here some of them came back to other events or later on to the hackbase or regular geek-meets in the region.

The core group are hackers and makers and other technology and FOSS enthusiasts mainly from India, but also persons from Tibet, US, UK, Japan and Germany. In sum we must have reached around 400 children and youngsters via the various school events, many of them underpriviledged. Around 100 persons have been part of the hillhacks activities on the "do-er" side in all those days, the core conference also had around that amount of people participating.

WEB WE WANT

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Project outcomes, impact and next steps

The larger objective of the organisation is to bring together the hackers and makers to form a community, and spread the knowledge outside at the same time. **We accomplished this way better than we would have ever expected**. Many people collaborating or knowing each other online for a while met for the first time, and even more important: formed deep friendships caused by the duration and the closeness of the whole setup. Also the **contributional approach turned out to be a success**: People donated their time over weeks and months, and are still on it for the next chapter of hillhacks and seahacks. People who weren't able to spend too much time in preparations and organising, did spend a reasonable amount of money - so also **the "pay-what-you-want" approach turned out to be the right way** to go. We published our main expenses transparent on the public available pages on the wiki, and told everyone interested exactly what amount of each contribution goes into accommodation, food and into the general conference setup. So everyone could decide him/herself what would be a good price to pay, to also support the ones with lower financial background, or the ones spending huge amounts of their time to make this all happen. Big thanks again to everyone!

The **approach with using solely FLOSS tools gave us (naturally) some headache**, but also gave us lots experience in them, too. In sum it is very much doable, everything is available, if you are willing to invest some time for setup, testing and reiteration of them.

One other important lesson learned is that the **pre-events have been underestimated in value** - no other way would have been possible to **spread the message of collaboration and contribution**. Lots of attendees don't really understand the whole "FOSS-approach of running such events" before they have actually been in the middle of it. Besides that it was a wonderful way to **bring hillhacks to the cities**. It worked on a pretty small budget, again with the simple and contributional approach: The events have been hosted without costs by local partner-orgs, and our speakers slept mainly on couches in private homes or local hackerspaces or similar places.

Also it needs to be mentioned that the **female attendance was quite high** for the circumstances of being a tech-conference in a developing country. When it comes to the students and other groups we thought, it was often the girls and ladies being most interested.

Next steps are to conduct the same thing again, it will happen in **May and June 2015 in Dharamshala**.. Many people already preparing to make this happen. Also we will **start similar "s'hacks" in Kerala**, as described above the contacts for collaboration already got established. Besides we **founded a charity "Hackers without borders"** to be able to have the money flow independent from single persons, as well as being able to raise funds more easy.

Regarding the future plans on the **webwewant debate, we are very much on boa**rd and will always be. We are working a lot on these topics anyway, e.g. on educating people to show them, what the Web and the Internet is actually about and how it can be used, and how one can regain control. **We believe education is the key, and that the Internet can stay in our hands** - worst case we need to make a [new|gnu] one ourselves.

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What is the Web We Want?

See also Slides on https://hillhacks.in/hamirpur about the WebWeWant.

These slides are from the web-we-want event at the NIT Hamirpur, and serve as an example of the approach of this topic. As we had different timeslots for this part on various places and audiences, the approach varied very much. Here is a summary of the main storyline:

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As introduction we presented hillhacks, webwewant and our persons, to follow already into conversation with the audience: "What web do you want?". Usually we noted the answers and main points from the audience down, to take them out at the end again.

The next part went briefly through a history of the internet, starting with Sputnik in the 50-ies, and the first papers, but also explaining basic concepts like packet switching or RFC - the latter mainly for understanding the collaborative approach of the internets infarstructure from the very beginning till today. Some notes on the closed networks (wallet gardens) of the 80-ies and resulting idea of net neutrality complemented that learnings. 90-ies the web started, inclusive of the side-story of gopher and its licence fees, if time allowed, as well as founding of W3C and its organizational structure and the Declaration of Independence of Cyberspace of 1996. Continuing the timeline the next event was the dot-com-bubble, resulting into developments like Wikipedia and Blogs, the whole so called web 2.0 time. 2005 gave another change, with the commercialisation of the backbone, and resulting into start of services facebook and twitter. The chronological approach also gives space for many general learnings on how the network is structured, what are protocols and how does the internet work in sum.

This chronological part ended with 2013 and the Snowden revelations, to make a connect to the main architecture of networks. This part also presented projects around alternative networks, like free radio networks, e.g. Freifunk and Village Telco, as well as ideas like the Freedom Box. Via the example of GNUnet ("you broke the internet - lets make a gnu one") we could introduce many of the current technologies and could make the turn into the next chapter: Do we really wanna have all this public? Usable for corporates making money, usable for governments suppressing their people

This lead to the question: Who is the owner of the internet? Is it us, or not?

Then: What means reliable Infrastructure? We answered this on the slides with: Reliable, integer, robust, decentral (commercialization has to go), open source (full design), heterogeneity (hard- and software, as well as in physical layer (cables)].

Finally we led into the question again: "what do we want?" and replied: convenient and inexpensive communications – without giving up our basic rights – Reliable, stable, global, public, free&open communication structures – shielded against any attacks – By Design. After that we gave some concrete ways how to start, very much inspired by the WebWeWant publications that have been available.

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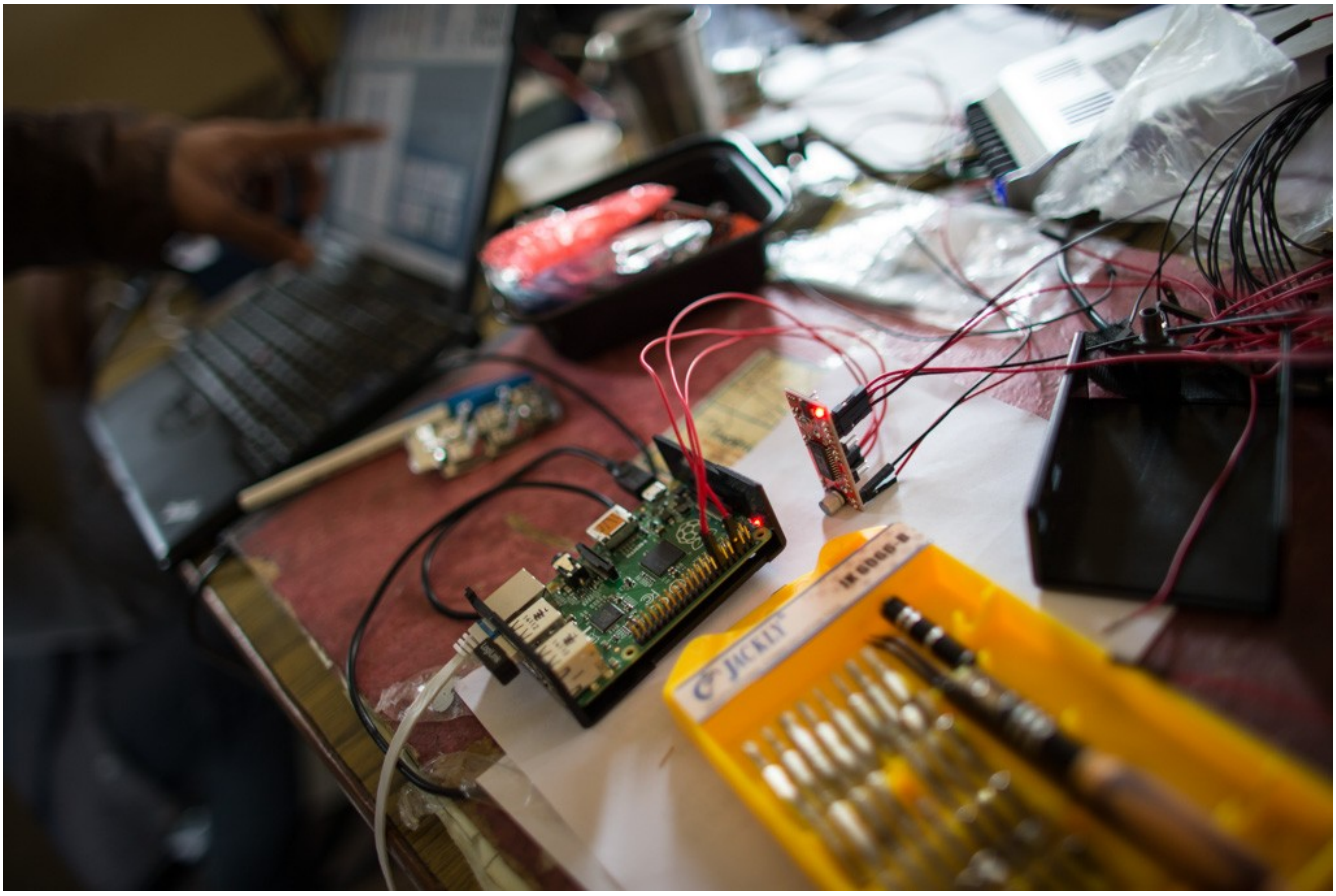
Pictures



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