Semper Ubi Sub Ubi
...and other advice.

An incomplete list of things they don’t teach you in school.

@jschauma
Programming

Most App Development / what most people actually hire for.

Nobody knows what this is.

Git

Computer Science

Stuff that helps us understand all the other parts.

Future ideas (not all good, not all profitable).

Sometimes you get interviewed for some of the basic parts from over here.

SEO

HTML

CSS

VC pitching

Operations

automation, CI/CD, config mgmt, monitoring, ...

E.g. design/development of infrastructure components such as config mgmt, CI/CD

Mostly duct tape.

@jschauma
Know your Unknowns.
A: Things we don't know.
B: Things we know we don't know.
C: Things we know.
D: Things we know we know.
A: Things we don't know.

B: Things we know we don't know.

C: Things we know.

D: Things we know we know.

Ratio D:C >> B:C => "I'm an expert!"
A: Things we don't know.

B: Things we know we don't know.

C: Things we know.

D: Things we know we know.

Ratio B/C now closer to D/C => "I really don't know all that much."
Computering, at its heart, is a people problem.
“A concept is stronger than a fact.”

-- Charlotte Perkins Gilman
Cutting corners to meet arbitrary management deadlines

Essential

Copying and Pasting from Stack Overflow

The Practical Developer
@ThePracticalDev

I found this code on the Internet!

Googling your Homework FOR DUMMIES

A Reference for the Rest of Us!

Learn Copy & Paste Driven Development today!

By C.S. Student

@jschauma
You need practical programming experience.
You don’t fully understand a problem until you try to solve it yourself.
Prototype... then toss it.
(Beware Second System Syndrome.)
Don't believe there's nothing as permanent as a temporary solution? Vint Cerf chose 32 bits for IPv4 in 1976: "enough to do an experiment"
Perfect is the enemy of the Good.
Perfect is the enemy of the Good.

Worse is Better.
Perfect is the enemy of the Good.

Worse is Better.

“Good enough” often is the enemy of “actually good”.
Simplify.
“This is the Unix philosophy:

Write programs that do one thing and do it well.

Write programs to work together.

Write programs to handle text streams, because that is a universal interface.”

-- Douglas McIlroy
Know Unix.
Embrace the command-line.
Know your $EDITOR.$

```c
sortfcn = revnamecmp;
break;

case BY_SIZE:
    sortfcn = revsizecmp;
    break;

case BY_TIME:
    if (f_accesstime)
        sortfcn = revacc cmp;
    else if (f_statustime)
        sortfcn = revstatcmp;
    else /* Use modification time. */
        sortfcn = revmodcmp;
    break;

/* Select a print function. */
if (f_singlecol)
    printfcn = printscol;
else if (f_columnacross)
    printfcn = printacol;
else if (f_longform)
    printfcn = printlong;
```

"ls.c" 715L, 18051C 371,9-1 52%

@jschauma
Know how to use a debugger.

printf("here: x is now %d\n", x);

does not count.
Meet your new friends, the Straces:

dtrace(1), ktrace(1), strace(1)
Use boring technology.
Use boring technology.

Write boring code.
$ echo 'import this' | python
Readability counts.
Refactor if:
- code trails off right side of your window
- your function does not fit into <200 lines

Readability counts.
Readability counts.

You are not charged per character.
(Most) comments considered harmful.
// increment x by 2
x = x + 2;
// increment x by 2
x = x + 4;
(Most) comments considered harmful.

Comments should explain the why, not the what.
Write The Fine Manual
$ cp /usr/share/man/man1/ls.1 hfrob.1
$ $EDITOR hfrob.1
$ nroff -man hfrob.1 | more
Write The Fine Test Suite
Write meaningful error messages.

$ hfrob frumbl
Error!
$ echo $?  
0
$

$ hfrob frumbl
Unable to open file: ‘/usr/share/hfrob/frumbl’: No such file or directory.
$ echo $?  
1
$
Learn to write a bug report.
Try to understand what you’re doing.
Cutting corners to meet arbitrary management deadlines

Essential

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@jschauma
Sufficiently advanced cheating is indistinguishable from learning.
Computering, at its heart, is a people problem.

Software development is a social activity.
HOW TO WRITE AN E-MAIL TO YOUR INSTRUCTOR OR T.A.

From: Student
To: Instructor/TA

"hey"

lol, when is your office hours?

btw, where is you’re office?

Before asking your question, always consult:
A) The syllabus
B) Common sense
C) The syllabus

OMG, what are you, 14? Write full sentences!
The internet has enough bandwidth.

Sign your name! This isn’t chat and we are not friends.

It only takes a second to spell check! Seriously, your time is not that important.

AAAHHH!! How did you graduate high school?!

It’s in the syllabus!!!
The internet does not forget. Anything. Ever.

Alex Russell
@slightlylate

OH: "I'm glad Hacker News exists, as a place that gathers no-hire signals in one easy to search place."

RETWEETS 50  LIKES 123

12:39 PM - 16 Feb 2016
Other people are...
...also people.
DON'T BE A DICK!
Own your mistakes.
You break it, you own it.
You break it, you own it.

You fix it, you own it.
Software maintenance is 75% of total cost of ownership.

Operational support is the remaining 75%.
Participate in Open Source.
Mind your filter bubbles.
Seek diversity.
GitHub is (not) your resume.
Interviewing is bullshit.
Salary negotiation is bullshit.
Salary negotiation is bullshit.

Know what you’re worth.
Your first salary defines future salaries for this career path.
Your first job does not define your career, but it may pigeon-hole you.
There is no such thing as multi-tasking.

You can either do one thing well, or multiple things poorly.
There is no such thing as multi-tasking.

Eliminate distractions.
“One of my most productive days was throwing away 1,000 lines of code.”

-- Ken Thompson
Validate all your input!

whitelist > blacklist
“Security” can’t be added.
Your endpoint security model should assume the network is compromised; your network security model should assume the endpoint is.

Both in fact are.
Always use UTC.

Use an unambiguous format.

2016-03-02T14:22:33

03/02/16 2:22:33
This is Git. It tracks collaborative work on projects through a beautiful distributed graph theory tree model.

Cool. How do we use it?

No idea. Just memorize these shell commands and type them to sync up. If you get errors, save your work elsewhere, delete the project, and download a fresh copy.

https://xkcd.com/1597/
Fallacies of distributed computing:

- The network is reliable.
- Latency is zero.
- Bandwidth is infinite.
- The network is secure.
- Topology doesn't change.
- There is one administrator.
- Transport cost is zero.
- The network is homogeneous.
The internet is awesome.

You should know how it works.
Understand the DNS.

(Don’t monkey around with /etc/hosts.)
Know `tcpdump(1)`.

Be able to read a `pcap(3)` file.
Understand the OSI stack.
The internet is awesome.

You can help keep it that way.
You can help make it awesomer.
The internet is awesome.

You *should* help keep it that way.
You *should* help make it awesomer.
Understand the OSI stack.
Don’t do drugs.
Use an ad-blocker.
Stay in school.
Disable Flash.
Anonymity is important.
Yes means yes.
Don’t get phished.
Black lives matter.
Use a password manager.
Wear sunscreen.