young adult’s computing autobiographies

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why would anyone want to program?
why would anyone want to program?

it’s challenging
why would anyone want to program?

it’s challenging

it’s frustrating
why would anyone want to program?

it’s challenging

it’s frustrating

it’s mundane
why would anyone want to program?

it’s challenging

it’s frustrating

it’s mundane

other people do it for you!
but some people learn to love it ...
but some people learn to love it ...
I recruited ...

58 **informatics** undergrads (not CS)

**user-centered design class**

22 median age

46 men

12 women
I asked them to...

write an **autobiography** on their ...

- first encounters with **computing**
- first encounters with **code** (defined broadly)
- use of computing **today**

a **lure** text, to inform essay scope

~ 1,500 words
58 personal stories about how students came to love and hate code (in the early 1990’s)
read each essay in detail, identifying potential trends
read essays again, noting the prevalence of each trend
read essays a third time, synthesizing prevalent trends across essays
early encounters

computers = a platform for play
computers = escape

“The more I struggle to remember that day, the easier it all comes back; the sharp click of the 1-button mouse, the confusing array of letters not arranged in any discernible order on the keyboard, and of course the sheer exhilaration that was The Oregon Trail (and dying from dysentery) [...] From that day forward, my mind married the two concepts of computing and fun.
computers = lens to see the world

“From a very early time in my life technology, and particularly video games, have had a large influential role in my life... This shaped my free time, activities, the people I got along with, and my class choices as I grew.
computers = expressive platform

“I remember opening the calculator, paint, and notepad programs. The calculator was pretty nifty at the time, but I was not as thrilled by it as much as paint. I had a blast with that program.”
adolescent encounters

code = bonding
code = group identity

“My first online game was a free game called A.R.C. (Attack, Retrieve, Capture); [... ] A few friends and I decided to make a clan, initially consisting of just us, which grew into a bigger clan as we met people through the game who joined us. Seeing as other clans in the game had their own web pages, we decided we needed to have one too.
code = collaboration

"I spent quite a bit of time with a third good friend (whom I also live with) making games on the calculator. The culmination of our efforts was in a text based role playing game we called Arena. There were duels and experience points and items and weapons and spells! What beautiful days those were."
code = community

“[...] many of my close friends on my street had gone through similar experiences and were intrigued with computers as well. My first exposure to computer code came in 6th grade when one of my older friends showed me the website he had written in HTML.”
code = mentoring

“[...] The teacher of the class also happened to be my new cross country coach... Through these two activities I became very close with my teacher and coach, and continued to take many programming classes.
code = parenting bonds

"I have another fond memory of going to work with my father, dumpster diving [...] Before each move, there would be dumpsters lined up in the aisles for people to discard unwanted computers and components [...] I used these computers to build my understanding of how to install and configure an operating system."
code = parenting tool

“When my step-dad ran out of things to take away, he finally decided to give me things to do. One day he purchased a big book of Borland C++ and told me that once I finish every single exercise in the book and pass all the tests, I could get all my other freedoms back. I toiled over it for four long months but came out of it a better man."
college encounters

code = triumph ↔ torment
code = **triumph**

“Finally, everything fell in place and I felt like I just climbed Everest. **The thirst for this feeling of accomplishment is what kept me going in between each coding project.**
code = fascination

“My scattered understanding of code became more organized when I took CSE 142, the introductory Java class. Again I was fascinated by the intricacies and patterns that emerged.
code = **tedium**

“... I absolutely loathed this class and its content. I found it boring and stale, like a math class.
code = chaos

“[…] It wasn’t that I hated programming it was that I didn’t have the patience or the trust for it. […] I have trouble coding and walking, the multitasking was too intense for me. That was the final straw.
code = \textit{isolating}

CSE 142 is like exercising both rewarding and torture. I loved that feeling of accomplishment you get when your code actually compiles without errors and works [...] I felt a bit like an outsider because my background in programming was nonexistent and everybody else seemed so knowledgeable.
code = torment

“[...] my love of programming has been brutally murdered by out of control CS Monsters. I said earlier that my love of the subject matter was inspired through socialization. Well, many of the people I have met in the CS major have grated on my nerves like a cheese grater. They are possibly the most proud people I have ever met."
code = failure

“Unfortunately none of the programming I attempted ever succeeded, I still remember the bitter taste of failure. And now that I mention it, that might have been my first conscience realization of failure."
career thoughts
code = **tedium**

“I know I’ll never be good enough to make decent games and I don’t think I want to do that as a career because of **how time consuming it can be and not to mention it’s a pain in the butt to do as a job.**
code = purposeless

“I began to wonder what good it was to build a super computer that did anything imaginable, if there was no demand for it.”
code = **tedium**

“However, the next class got more into serious programming, and more relevant to what professional programmers do for a living. [...] I vowed I would never take another programming class and that I would definitely not be doing this for a living.
how did students come to love or hate code?

code = triumph

code = bonding

code = torment

computers = toy

CS
how did students come to love or hate code?

computers = toy

code = bonding

CS

code = triumph

code = torment
can code still = bonding?

BASIC, TI-82, HTML
- accessibility
- error-tolerance
- simplicity
- socially-engaging output

are these still viable platforms for bonding?

are Alice, Scratch effective replacements?

code = bonding

computers = toy

code = triumph

code = torment

CS
code is social in youth

code is social at work

code = triumph

code = bonding

CS

solo assignments isolate

skilled students intimidate

students believe that jobs are boring, anti-social

computers = toy

computers = toy

computers = toy

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code is **social** at work

software developers = people who were more tolerant of being *isolated* ...

(but then find out that software development demands **social** and **communication** skills!)
questions!

need to examine whether existing languages facilitate **interpersonal bonding**

need computing education that gives students **accurate perceptions** of jobs