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ELLA the ENGINEER



Robyn MOON

Congratulations!

You hold in your hands the very first issue of ELLA THE ENGINEER! Getting kids - specifically young girls - to understand the importance of software development, coding, and engineering is a vital and worthwhile goal. It helps kids feel empowered, creative, and confident in addition to building essential problem solving skills they can use throughout their lives. This comic is intended to promote female leadership and encourage young girls to explore the wonderful world of science, technology, engineering, and mathematics (STEM) - and to have fun along the way!



ELLA THE ENGINEER
is made possible by:

Anthony Onesto - Creator
Valerie D’Orazio - Writer
Bobby Timony - Artist
Ron Perazza - Producer

With special thanks to:
Ella Onesto - Story Advisor
Nicolette Onesto - Story Advisor
Frankie Onesto - Story Advisor



Interested in learning more?
Check out these free resources!

HOUR OF CODE:

<http://hourofcode.com>

Hour Of Code offers online classes for children and adults. Tell a story or make a game at their Play Lab!

GIRLS WHO CODE:

<http://girlswhocode.com>

Girls Who Code works to provide resources, programs, and support for girls interested in entering computer and engineering fields.

YES WE CODE:

<http://www.yeswecode.org>

Yes We Code focuses on low-opportunity youth, giving them resources and mentors to help them on their way to becoming programmers.

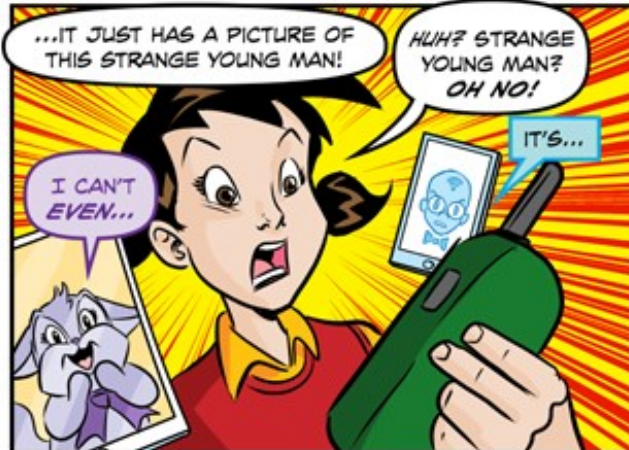
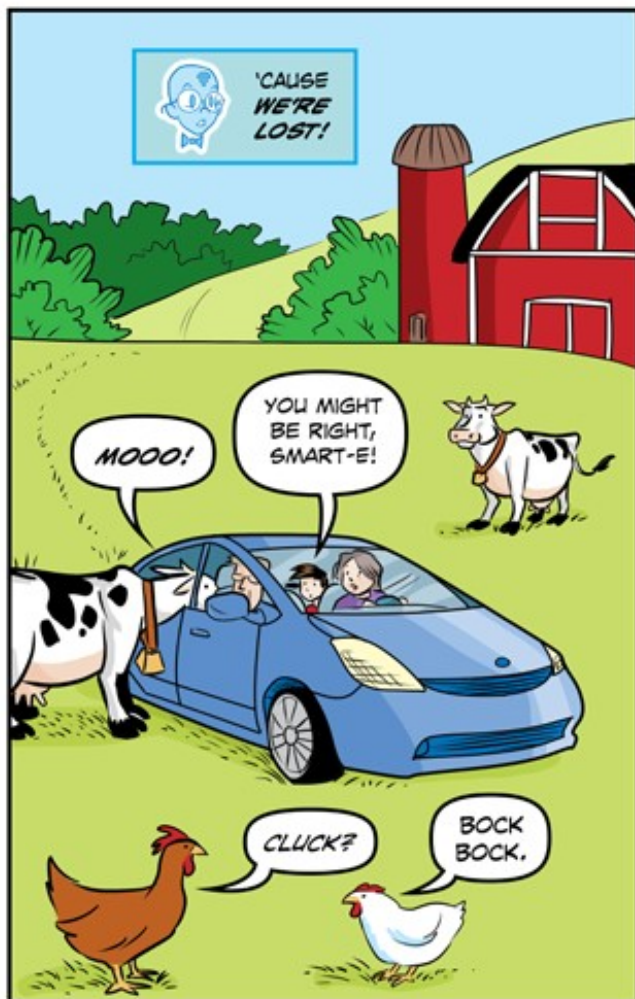


ELLA the ENGINEER

IN

"Map Trap!"

STORY BY
VALERIE D'ORAZIO
ART BY
BOBBY TIMONY





... THE GLITCH!

HAHA!

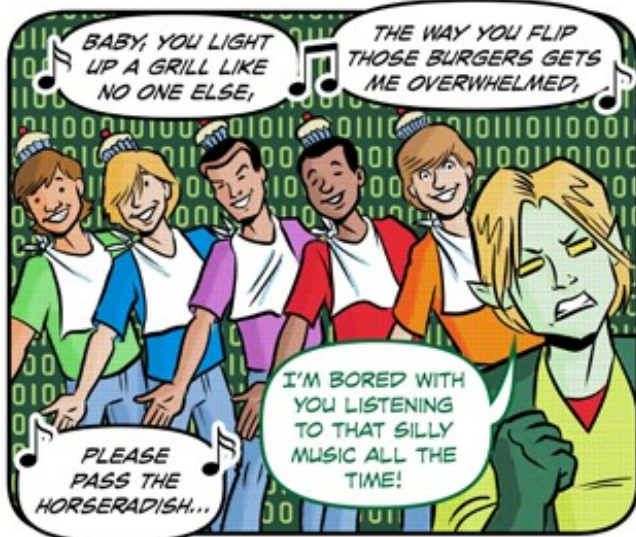
BUT I SAVED UP FOR MONTHS TO SEE THIS CONCERT!

YEAH WHY THE TOTAL FAIL?

BY THE TIME YOU FIGURE OUT HOW TO GET TO THE CITY...

YOUR BELOVED BOY-BAND WILL BE BACK IN ENGLAND!

BECAUSE, MY DEAR ELLA...



BABY, YOU LIGHT UP A GRILL LIKE NO ONE ELSE,

THE WAY YOU FLIP THOSE BURGERS GETS ME OVERWHELMED,

PLEASE PASS THE HORSERADISH...

I'M BORED WITH YOU LISTENING TO THAT SILLY MUSIC ALL THE TIME!



I THINK IT WOULD BE EVER SO MUCH MORE FUN...

I DON'T KNOW THAT MY STOMACH'S FULL,

OH, OH, I JUST WANT MORE BURGERS...



...TO FIGURE OUT ONE OF MY GLITCHES INSTEAD!

OOH, THAT GLITCH IS A REAL PAIN IN THE CHARGER!

PATCH ME IF YOU CAN...

CRACKLE!

WHAT WILL WE DO NOW, ELLA? IT SEEMS HOPELESS!

NOT HOPELESS, TABBY...



... WE JUST NEED TO SEE THINGS FROM A DIFFERENT POINT OF VIEW!

GRANDMA AND GRANDPA'S GPS USES CODING LANGUAGE TO OPERATE...



JUST LIKE YOU AND YOU AND MANY OTHER DEVICES AND MACHINES DO!

```
static void
endTimer(void){
  if( enableTimer ){
    struct rusage
    sEnd;
    getrusage(RUSAGE_SELF,
    &sEnd);
    printf("Run Time:
    real %.3f user %.3f sys
    %.3f\n", sEnd.ru_utime.tv_sec,
    sEnd.ru_stime.tv_sec,
    sEnd.ru_ftime.tv_sec);
  }
}
```

WHEN THE CODE IS WRITTEN CORRECTLY, EVERYTHING IS GREAT!

BUT WHEN THE CODE HAS A GLITCH- OR, BUG*- THINGS DON'T WORK RIGHT.



HOW CAN I HELP YOU TODAY?

DO YOU NEED MOVIE TIMES?

LET ME SUGGEST A BURGER HUT!



ER... POTAYTO POTAYTO!

56 + 78 = DKYUFLYF JHJBKKB

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*Bug: A coding error in a computer program.



AND THAT'S WHAT HAPPENED WITH YOUR GRANDPARENTS' GPS, RIGHT?

THAT'S RIGHT. GLITCH PUT A BUG IN THE CODE.

NOW THE CODE CAN'T RUN PROPERLY- AND THE GPS CAN'T TELL MY GRANDMA HOW TO GET TO THE CITY!

? FINDME MAPS

WELL, I DON'T LIKE TO BRAG...

Searching...

...BUT I HAVE A GPS APP* OF MY OWN THAT MIGHT WORK...

(ANY SECOND NOW...)

*App: Short for "Application." An app is a small program downloaded onto a mobile device like a tablet or smartphone.

? FINDME MAPS

YOU'RE LOST!

WELL, MAYBE I SHOULD HAVE UPGRADED TO THE LATEST VERSION...



I'LL NEVER GET THAT FUN CONFECTION AUTOGRAPH ON MY SCREEN NOW!

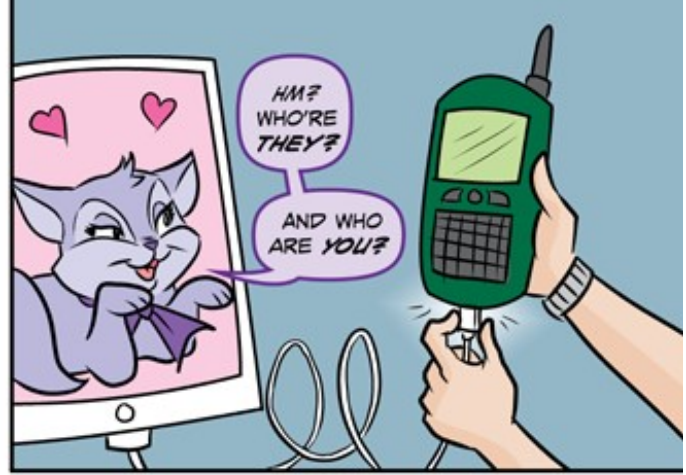
WAAAAH!

NO NEED TO PANIC, TABBY...



...BUT I'M GOING TO NEED YOUR HELP!

YOU'LL BE SEEING FUN CONFECTION LIVE IN NO TIME.



HM? WHO'RE THEY?

AND WHO ARE YOU?



I'M GOING TO ACCESS THE GPS'S SOURCE CODE TO SEE WHERE THE BUG MIGHT BE.

I STILL DON'T KNOW HOW YOU'RE ABLE TO READ ALL THOSE WORDS AND SYMBOLS...

IT JUST SEEMS REALLY HARD TO DO!

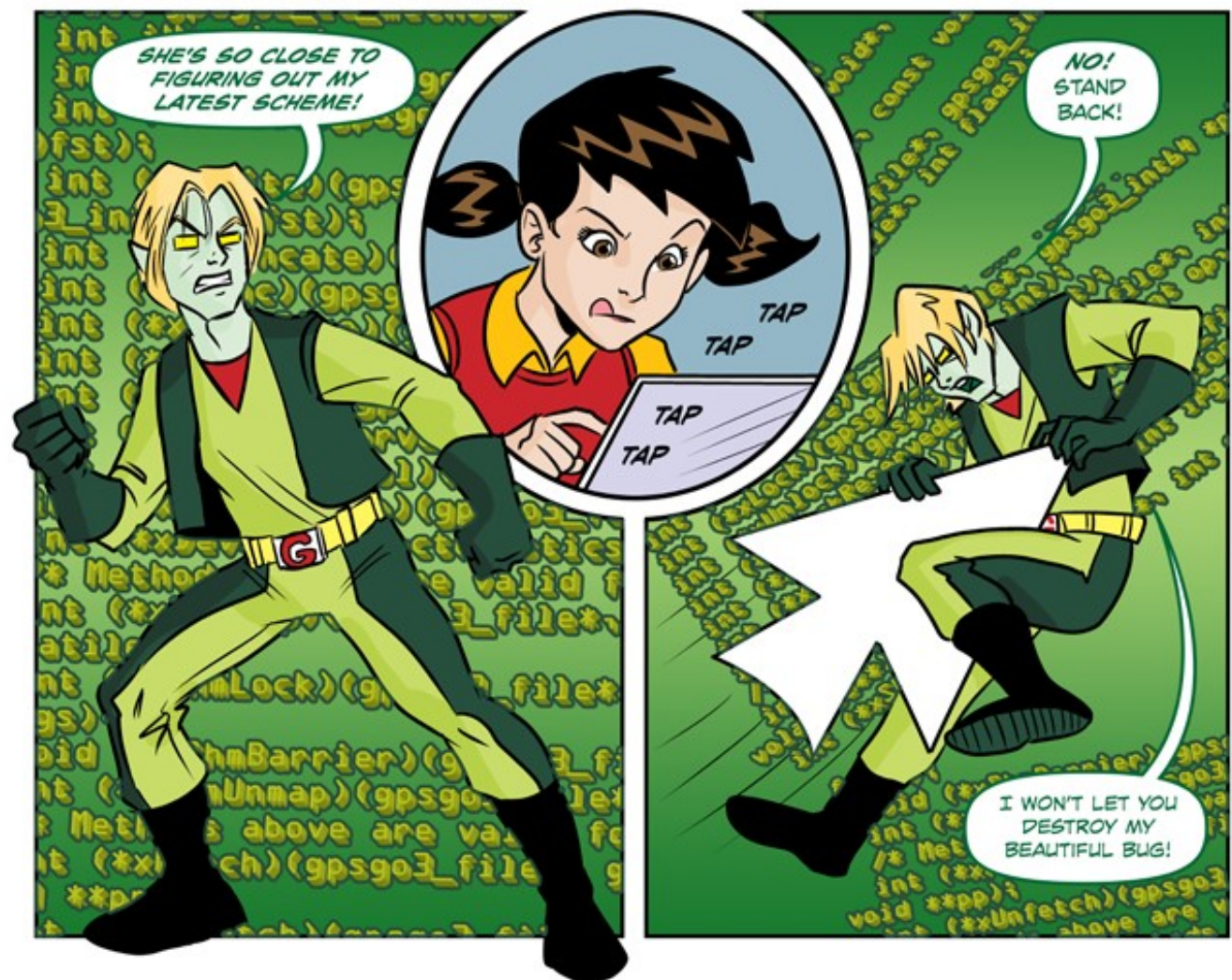
*Source Code: A version of the code written out in words that humans can read.



IT'S NOT THAT HARD AT ALL, GRANDPA...

ALL YOU NEED TO DO TO READ CODE IS STUDY AND PRACTICE!

DRAT!



SHE'S SO CLOSE TO FIGURING OUT MY LATEST SCHEME!

NO! STAND BACK!

I WON'T LET YOU DESTROY MY BEAUTIFUL BUG!

