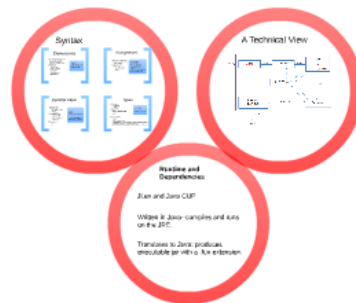


How it works





QUANT

An Educational Language

*Quant is "a simple,
English-based
programming language
created for kids".*

What is Quant?

(this is Quant)

Another simple example:

Farmer Joe has a pasture with cows and chickens. I see 120 cows and 25 chickens. How many legs do I see?

An animal has legs.

A cow is an animal--its legs are 4.

A chicken is an animal: its legs are 2.

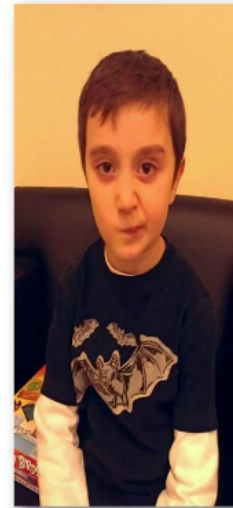
What is the total legs of 120 cows plus the total legs of 25 chickens?

Why Quant?

Meet Enzo



- *3rd Grade*
- *Loves Minecraft*
- *Avid interneter*



- *Struggling with MATH*



- ***3rd Grade***
- ***Loves Minecraft***
- ***Avid interneter***



- Struggling with MATH

The Problem

Elementary students have a hard time relating to their first word problems.

Elementary teachers have a hard time helping them relate.

The solution: Quant



How?

It's.... Simple

Accessible

Familiar

Educational

What can Quant do?

A working geometry example.

Syntax

Expressions

- * Use operation on two type-compatible value-holding fields
- * Keywords
 - arithmetic
 - conversions
 - iteration
 - assignment
 - operators

A is 7.
B is 4 plus A.
What is B?

Assignment

- * Assign value to variables
- * Keywords
 - is, set...to
 - has

A is a square.
A has width 7.
B is a rectangle.
B has width 6 and height 7.
Is the area of A greater than the area of B?

Control Flow

- * Keywords
 - If...else...then
 - While...
- * Comparisons
 - Less than
 - Greater than
 - Equal to
- * Boolean
 - if
 - is

A is 7.
B is 8.
Is B greater than A?

If A is less than B,
then B is A plus B.

Types

- * Primitives
 - Integers
 - Strings
- * Objects
 - User-defined data types
- Other features:
 - * Units
 - * Unit conversions
 - * Operations on collections of user-defined types
 - * extreme syntactic sugaring (What is ... ? Is ... ?)

A is 4115.
B is an octocat.

Expressions

- * Use operation on two type-compatible value-holding fields*
- * Keywords*
 - arithmetic*
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** Comparisons*

- Less than*
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** Boolean*

- if*
- is*

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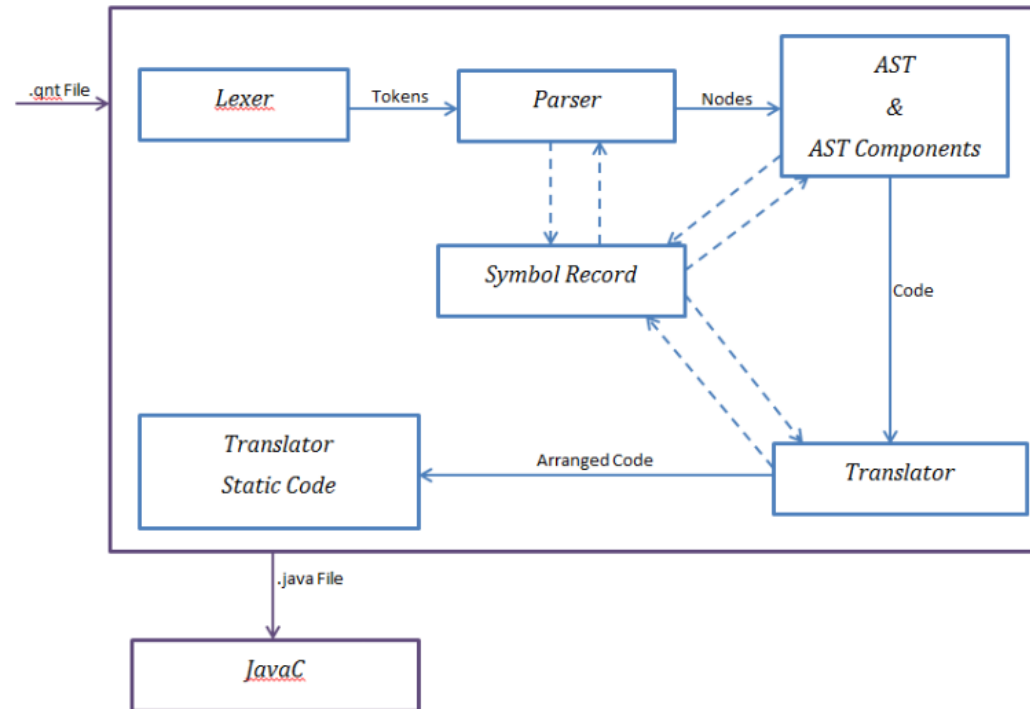
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Other features:

- * *Units*
- * *Unit conversions*
- * *Operations on collections of user-defined types*
- * *extreme syntactic sugaring (What is ... ? Is ... ?)*

A Technical View



Runtime and Dependencies

JLex and Java CUP

Written in Java--compiles and runs
on the JRE.

Translates to Java; produces
executable jar with a .fun extension.

Team

Aubrey Alston - Project Manager

Ashley Kling - System Architect

Audrey Seville - System Integrator

Ricky Goncalves - System Tester

Sabina Smajlaj - Language Guru

Development process

Agile incremental and iterative approach
in four phases:

- (1) Specification
- (2) Collaboration
- (3) Testing
- (4) Review and deployment

Tools



github
SOCIAL CODING



git



Google Drive



(We tried)



Conclusions

Lessons Learned

Meet often.

Lessons Learned

Know the features that will make your language.

Lessons Learned

Plan, and do it early.

Conclusion

- * Simple, accessible and friendly language
- * Holistic approach to teaching mathematics
- * Change the way students learn math
- * Encourage higher-order thinking

*** You want your language to mean something, but it takes work to make it happen.*



How do you know what's next?

Lessons Learned

Meet often.

Lessons Learned

Know the features that will make your language.

Lessons Learned

Plan, and do it early.

Conclusion

- * Simple, accessible and friendly language
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***** You want your language to mean something, but it takes work to make it happen.***



Now Enzo can learn Math easily!

