Gazprea 2 Meeting Notes

James, Tianming, Ian & Justin

November 25th 2022 - Project Meeting #1

November 28th 2022 - Scrum Meeting #1

December 2nd 2022 - Project Meeting #2

December 5th 2022 - Scrum Meeting #2

December 8th 2022 - Project Meeting #3

Project Review Meeting #1

Meeting Information:

Meeting date: Nov 25, 2022
Time start: 2:46 PM
Time end: 3:21 PM

Attendees:
Ian (Arrived at 2:45PM)
Justin (Arrived at 2:46PM)
Tianming (Arrived at 2:45PM)
James (Arrived at 2:45PM)

Progress:

Done:

- Part 1 finished

Issues:

- No issues yet as we are starting a building phase

Round table:

- James:
  - Working on memory free for 100% of test cases
- Tianming
  - Working on Indexing runtime and support for built in functions
- Justin
  - Working on string literal and codegen for iterator loop
- Ian
  - Working on testing, figuring out what tests we may have failed in part 1

Scrum Meeting #1

Meeting Information:

Meeting date: Nov 28, 2022
Time start: 6:25 PM
Time end: 6:43 PM

Attendees:
Justin (Arrived at 6:25 PM)
Ian (Arrived at 6:25 PM)
James (Arrived at 6:35PM)
Tianman (Arrived at 6:25PM)

Current Progress and Completion Targets:

James:

- Memory is freed in almost every case. Edge cases with break, continue and return inside loop
- Did string type

Justin:

- Iterator loop working creates lots of memory leaks though so that will be a new focus.

Tianming:

- Making matrix, vector and all operations work in the runtime. Fixing bugs & making progress.

Ian:

- Highlighting some of the tests we failed in part 1.

Issues:

Overall making good progress. Parallel work on independent features makes merging branches easy. Makes issues only of concern to the individual working on it.

Project Review Meeting #2

Meeting Information:

Meeting date: Dec 2, 2022
Time start: 2:30 PM
Time end: 3:11 PM

Attendees:
Ian (Arrived at 2:30PM)
Justin (Arrived at 2:30PM)
Tianming (Arrived at 2:30PM)
James (Arrived at 2:30PM)

Progress:

Done:

- Iterator Loop
- Matrix and Vector operators
- String concatenation
- Wrote merge sort.

In progress:

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Issues:

- There is currently a bug with return statements in any control flow structure which creates a double terminator inside the block LLVM IR error.

Round table:

- James:
  - Going to be considering the multitude of Null / Identity use cases
  - May have to add as a type and implement into the type promotion table.
- Tianming
  - The runtime interfaces for generator and filter are ready to be used. Filter will create tuple type, generator will create vector / matrix type.
- Justin
  - Iterator loop free, starting on generator and filter implementation.
- Ian
  - Created merge sort in Gazprea. Continuing to find all the strangest combinations of the language to create test cases.

Scrum Meeting #2

Meeting Information:

Meeting date: Dec 5, 2022
Time start: 6:31 PM
Time end: 6:58 PM

Attendees:
Justin (Arrived at 6:31PM)
James (Arrived at 6:30PM)
Tianman (Arrived at 6:31PM)
Ian (Arrived at 6:30PM)

Progress:

James:

- Memory free in all occurrences except the control flow structures Justin is working on.
- Moving onto some AST walk stuff to clean up compile time checks and some optimizations.

Justin:

- Continuing to work on the generator, filter and fixing up the iterator loop.

Tianming:

- Going to implement a variable stack interface which we can automatically free in codegen when running into break / continue / return statements in control structures.

Ian:

- Continuing to work on testing. New tests for generator and filter which challenge the different types which can underlie the structures. Considering type promotion in the expression side of the generator

Issues:

- As Tianming mentioned there are memory leaks in control structures that break / return / continue before we reach the “merge block” where the memory is freed.
- The solution will be to create a stack interface and allocate variables on the stack in these structures. Justin will use the interface once ready.

Project Review Meeting #3

Meeting Information:

Meeting date: Dec 9, 2022
Time start: 6:25 PM
Time end: 7:05 PM

Attendees:
Ian (Arrived at 6:23PM)
Justin (Arrived at 6:25PM)
Tianming (Arrived at 6:23PM)
James (Arrived at 6:22PM)

Progress:

- All language features are implemented
- Did some pair programming to figure out the break / continue / return memory leaks in the control structures.
    - Stack interface now working.

Issues:

- Some compile time checks prove to be more involved than other simple ones.
    - Checking vector sizes in assignment statements

Round table:

- James:
    - Fixed a bunch on null / identity errors. This feature of the language is now working good.
- Tianming
    - Fixing up some runtime stuff for iterator loop
        - Changed the variable assignment we use in domain variables to handle all types such as i in [1.1, 2.2, 3.3] as opposed to only integer vectors
- Justin
    - Created the Compile time check for use of variables before definition.
    - Used Tianming's stack interface.
    - Iterator loop, generator and filter are all good now.
- Ian
    - 90 test cases are created. 90 / 90 pass. 90/90 have no memory leak.