

Sprint 1 Plan

Go Compiler

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Task listing, organized by user story

Sprint 1

(21)User Story 1: As a user, I would like to use pointers in my Go source code.

Assigned: Trevor

Tasks:

- **(2)Trevor:** Add the missing Golang ast tree nodes into the parser and collect the child nodes involved.
- **(5)Trevor:** Figure out a way to either model the memory for Go or mimic memory without implementing the Unsafe api
- **(5)Trevor:** Star nodes execute on the expression and returns the value pointed in the frameslot
- **(3)Trevor:** Unary & nodes return the frameslot of the variable
- **(6)Trevor:** Dereferencing pointers can be written into and read from using an index expression

(8)User Story 2: As a user, I would like to be able to import a library so I could use more functions.

Assigned: Kyle

Tasks:

- **(1)Kyle:** Create the nodes in the IR for import
- **(3)Kyle:** Create the SelectorExpr node in Truffle
- **(3)Kyle:** Update invoke to allow for SelectorExpr or Ident nodes
- **(1)Kyle:** Install the package if it is not installed.

(5)User Story 3: As a user, I would like to be able to call a function.

Assigned: Trevor

Tasks:

- **(2)Trevor:** Call a function without parameters
- **(2)Trevor:**Create/Declare a function with 0 parameters
- **(1)Trevor:** Setup the IR for a fieldlist

(5)User Story 4: As a user, I would like to be able to use all of Go's types.

Assigned: Vince

Tasks:

- **(1)Vince:** Add float(32), double(64) type nodes to Truffle

- **(1)Vince:** Add float, double type IR nodes
- **(2)Vince:** Create visit methods for each type of node
- **(1)Vince:** BasicLit GoIRFloatNode, GoIRCharNode accounted for in the visit methods

(5)User Story 5: As a user, I would like functions to be able to return a value

Assigned: Petar

Tasks:

- **(2)Petar:** Add the corresponding IR nodes to the IR tree and switch statement object factory.
 - Field, fieldlist, and return.
 - Add associated ir to truffle node transformer methods.
- **(2)Petar:** Create Truffle node return stmt
 - On execute this will throw the value to where it was called.
- **(1)Petar:** Assign variables with function return value

(13)User Story 6: As a developer, I would like Arrays and Slices to work in a consistent manner. Arrays and Slices do not work in the same fashion when being executed during reading and writing.

Assigned: Trevor

- **(1)Trevor:** Create super class type for arrays and slices, will be able to read, insert, len, cap.
- **(3)Trevor:** Create new write ir to truffle node transformer to distinguish between a read and a write to an index node.
- **(1)Trevor:** Figure out what should be returned when a array type or a slice type is executed.
- **(3)Trevor:** Calculate the offset for slices when reading and writing to a slice.
- **(5)Trevor:** Handle slice operators on arrays and slices, returning a new slice.