<p align="center">**Sprint 5 Release 2 Report**
Go Compiler
May 16th
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Trevor Ching, Vincent Kim (Product Owner)</p>

Actions to Stop Doing:

Lateness to meetings is not tolerated.

Actions to Start Doing:

Create unit test for the functionality we are aiming for.

Actions to Keep Doing:

Group sessions on explaining architecture and design choices. As a team, we need to group up and show each other our code when merging.

Work Completed/Not Completed:

Sprint 5

(28)User Story 1: As a user, I would like global variables to be changed at the global scope level when updating them inside a function's scope

    Assigned: Kyle

    Tasks:

- ✓ **(1)Kyle:** Add unit test to check for changing a global variable
- ✓ **(15)Kyle:** Research how to modify global variables at Truffle time
- ✓ **(3)Kyle:** Create the global materialized frame in the GoContext
- ✓ **(3)Kyle:** Create the Truffle read and write nodes for the global variables.
- ✓ **(3)Kyle:** Create a writer visitor file following the visitor pattern for global variables
- ✓ **(3)Kyle:** Identify if a variable is global at assignment time

(34)User Story 2: As a user, I would like my Go program to typecheck correctly to keep language consistency and provide with meaningful error messages.

    Assigned: Petar

    Tasks:

- ✓ (8)**Petar:** Function calls are type checked in the parameters with the function being called.
- ● (7)**Petar:** Non primitive types check before accessing and writing to the type
- ✓ (7)**Petar:** Type check binary/Unary operations and expressions
- ✓ (12)**Petar:** Restructure Type Checking for visitor design pattern for easy extension of adding types and type/error checking.

(25)User Story 3: As a developer, I would like structs to be a subclass of the Truffle Object model.

Assigned: Trevor

Tasks:
- ✓ **(3)Trevor:** Read how to implement a Truffle Dynamic Object, how the Layout works, and what the Shape property corresponds to.
- ✓ **(2)Trevor:** Structs assigns new struct objects during assignments
- ✓ **(20)Trevor:** Implement Struct Dynamic Object
  - ○ **(10)**Allow struct fields to be added in as properties during initial type declaration, Create write property nodes
  - ○ **(10)**Assign new struct objects to variables which can only read and write from properties, not create new properties, create write and read from property nodes

(22)User Story 4: As a user, I would like to declare a inline function without a name (Anonymous function / Function literal).

Assigned: Vince

Tasks:
- ● **(5)Vince:** Create and change necessary files for the func lit node (Update truffle, IRVisitor, create IR funclit, truffle funclit)
- ● **(7)Vince:** Make sure the func lit node can be assigned correctly to a variable and called from it. Additionally, make sure the func lit node can be called straight from callexpr without any assignment.
- ● **(10)Vince:** Make sure the funclit can behave like closures (Access variables if in scope).

(3)User Story 5: As a developer, I would like struct objects to be printed entirely in fmt.Println function calls

Assigned: Trevor

Tasks:
- ● **(3)Trevor:** Either create a case inside the println builtin to print the keys and values or find a way to create a toString function for the DynamicObject Struct

(11)User Story: As a user, I would like to be able to write methods for structs

Tasks: Trevor

- ✓ **(2)Trevor:**Edit function definition to handle the case of a struct receiver inside GoTruffle
- ✓ **(1)Trevor:**Possibly create a new visitor for the function handler
- ✓ **(5)Trevor:**Read from the struct object and create write variables into the frame descriptor for each field the struct has.
- ✓ **(3)Trevor:**Create specialization for the selector expression node for method calls.