Status Report 1: FPP + Proteus

Presented By: Jorge Enriquez, Jonathan Garcia, Daniel Barlam, Chance Chime, Alberto Santana, David Pedroza

Introductions

What is FPP + Proteus?

- One of the few split up groups working with ARCS
- We are overlooking the FPP + Proteus side of the ARCS project

- Proteus:

  Programing language designed to build HSM
- FPrime:

  Software framework for the rapid development and deployment of embedded systems and spaceflight applications
- FPP:

  Modeling language for FPrime aka, generates code in C++, Python, XML

Tools & Setup

- Scala

- FPrime

- FPP

- Hierarchical State Machines

- Compiler Design

- Proteus

Learning Schedule for ARCS Senior Design

FPP + Proteus

- Compiler Design
  - Compiler Design Videos by Professor Dewey
  - **<Optional>** Compiler design: Modern Compiler Implementation in Java/ML/C (these are each separate books)
- F Prime
  - https://nasa.github.io/fprime/UsersGuide/guide.html
  - https://github.com/fprime-community/fprime-tutorial-hello-world
  - https://github.com/fprime-community/fprime-tutorial-math-component
- FPP
  - https://fprime-community.github.io/fpp/fpp-users-guide.html
- Scala
  - Get functional with Scala 3 (linkedin.com)
  - https://github.com/fprime-community/fpp/wiki/Pure-Functional-Programming-in-Scala
  - **<Optional>** https://www.manning.com/books/functional-programming-in-scala
- HSMs
  - Intro to HSMs **Videos by Professor Dewey**
  - **Key concept: Finite State Machine (FSM) (state-machine.com)**
  - **QP/C: State Machines (state-machine.com)**
  - **QP/C: Active Objects (state-machine.com)**
- Proteus
  - Intro to Proteus Videos by Professor Dewey

Decisions on Present & Future Issues

Deadlines

- We have to watch Professor's Deweys lecture videos on compiler basics. (10 hours)

  - Due 10/08/23

- After everyone has gotten the same spot we will all try and go through downloading FPP and FPrime together and start our Rotating Schedule.

- First Rotation - 10/10/23

Timeline/Plan

Deadline

- Deadline for the material on November 2 for a presentation

Plan

- Rotating topic schedule - every Tues, Thurs, Sun

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Compiler Design – Dalton
FPrime – Jonny
FPP – Chance
Scala – David
HSM – Alberto
Proteus – Daniel
Recess – Jorge
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Obstacles/Challenges

Obstacles

- Not all of us are on the same page, waiting for people to finish the lecture videos on compiler basics

- While some are finishing watching those videos some of us are trying to install FPP and Fprime

- The members of our groups that are at the installation of FPP and FPrime are having trouble getting it run properly.

Schedule

Next steps

Goals for next meeting

1. Be up to date with Compilar Videos

2. Start our rotating schedule to meet our deadline

3. Study!