GUI Designs

**Overview:** This file will document computer-sketches and flowcharts of GUI designs that depict high-level graphical elements such as text and images, input controls, entry fields, etc. along with the relationships between GUI frames for interfaces that have multiple screens. At the onset, the GUI interface designs will be comprised of one frame for the 'main menu' of the first docker container in the application, multiple frames for the model configuration compile time and runtime specifications (likely one for each of code parameters, compilation options, and runtime parameters), and one frame for rendering text that displays an indicator that the model ran successfully, where the user can locate output, and a prompt to run another model problem. Each section in this document will be used to distinguish a 'GUI release' for a particular container product whether it be a beta or production release.

**Stretch Goals:** Time permitting, to satisfy the stretch goals of incorporating post-processing and data analyses tasks into the workflow, another GUI will be designed to include a single frame for prompting the user to decide to post-process or analyze the model problem output data and if so, which high-level processing tasks they would like to execute. Then, a second frame in the GUI would be rendered that prompts the user to select from an array of either data-processing or data analyses tasks according to which high-level task was selected first. If multiple high-level tasks were selected, then a third frame would be rendered with a similar design and function. From here, if multiple tasks were selected by the user, then the user will be prompted to execute the tasks individually (accompanied with a specification of whether to render visualizations or data in the GUI and whether or not to write output to volume) or in a cluster with the same accompaniments. For tasks that are to be executed individually, the visuals will be rendered one-by-one on separate frames. Otherwise, they will be rendered on the same frame with a scrollbar used for navigation. Input control options will exist on each frame that allow the user to terminate all of the tasks in the queue and transition back to rendering the parent data-processing/data analyses frame.

**Version Descriptions**

**smart\_0.1**

This version will be designed with capabilities that enable the user to reproduce all steps of the MITgcm workflow from building and compiling model problems to running and writing output of models to local machines. Support will exist for the modification of any of the compilation and runtime parameters to suit the user's desired configurations. The user will be limited to bare-bones customization of jobscript command values including the most commonly used #SBATCH directives such as 'job\_name', 'total\_nodes', and 'total\_tasks'. This version is designed to run on sverdrup.