Sage Primer Design Principles

Accessibility with low overhead

1. Primers give new or inexperienced users an interactive, subject-specific introduction to sage functionality (functions, objects, object methods, useful representations, etc.) organized around specific topics and implemented in Sage Notebook worksheets.

2. Primer worksheets should be substantive but not encyclopedic. Limit worksheets to between 20 and 50 cells. If a worksheet gets too large, consider organizing the material into two separate primers.

3. Primers should contain well-chosen, meaning-rich examples, illustrate common pitfalls, and provide insightful-yet-terse commentary.

4. Primers should bring together several Sage constructs within a coherent, accessible conceptual package. They should do more than mimic docstrings.

5. Python and Sage programming techniques should be introduced as necessary in a natural way, avoiding excessive technicality.

6. Primers are not intended for research mathematicians and should be aimed at a specific user chosen from:
   - high school students
   - undergraduates (underclass / upperclass)
   - graduate students
   - instructors using sage in secondary or undergraduate courses

7. If possible, primers should provide links or references to more extensive resources (courses, books, tutorials, etc.).

Primer Notebook Worksheet Recipe

1. The primer naming convention is all lowercase, words separated by underscore, and of two parts separated by a period: "general" which should describe the area of mathematics to which the primer refers, and "specific" which should give a topic of central importance to the primer. Append a version number, "_v#", and dince the primers are worksheet files, the extension ".sws".

Standard with examples:

```
- general.specific_v#.sws
- group_theory.basic_group_functions_1.0.sws
```

- `number_theory.primes_0.3.sws`
- `number_theory.diophantine_0.1.sws`
- `calculus.single_variable_1.0.sws`
- `basics.smart_calculator_0.6.sws`

2. The primer template is saved as a primer worksheet under "primer_template.example.sws" and exemplifies the font and formating conventions for primers.

Authors: Erik Jacobson, Aly Deines, Sourav Sengupta

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