Scripting with MATLAB

Contents

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Displaying Text and Numbers

- Your first "Hello, World!" program:

```
disp('Hello, World!')
```

- To display text and number side by side:

```
disp(['the number is ', num2str(rand())])
```

Script M-File

Write multiple lines of MATLAB statements in a single file, called a script m-file. When asked to run the script, MATLAB executes all statements from top to bottom.

- Running a script: hitting "Run" button or calling a script by its name
- Commenting: `%` or `%%` at the beginning of a line
- Suppressing outputs: a semicolon(`;`) at the end of a statement
- Interactive program using `input` and `disp`:
  ```
  var_name = input('<PROMPT>');
  ```

Example: Quadratic Equation Solver

Our first program as a script m-file:

```
% script m-file: quad eqn solver
a = input('the value of a: ');
b = input('the value of b: ');
c = input('the value of c: ');
D = b^2 - 4*a*c;
x1 = (-b + sqrt(D))/(2*a);
x2 = (-b - sqrt(D))/(2*a);
disp(['The first root: ', num2str(x1)])
disp(['The second root: ', num2str(x2)])
```

Live Script

Basic Interface

- "New Live Script"
- Text vs code: Toggle using buttons or shortcut
- Output

Markup

Text styles:

- bold, italic, underlined, monospaced
- left/right aligned, centered
- itemization/enumeration

Document structure:

- Title
- Headings
- Normal

Scripts from Live Script

- Print out contents of an external script: `type`
- Run an external script: call by its filename

Miscellaneous

- Insert: table of contents, images, maths
- Tying maths: LaTeXsyntax works
- Non-executable code block
- Exporting To PDF

References

References

- MathWorks Help Center
- LM 5.3