FILE IS README

Controls

[Arrow Keys]	Move
Z	Undo
R	Restart
ESC	Pause

Features

Planned and implemented:

- 20 levels, including 7 original levels
- Level pause screen (press **ESC** to pause, press **any key** to resume)
- Restart level feature
- Undo feature (this was actually a pain to implement…)
- Sound effects! Be sure to turn on your sound so that you can hear them.
    - Sound and music on/off buttons
- The following blocks and properties:
    - `BABA, FLAG, ROCK, WALL, SKULL, WATER, BOX, KEY, DOOR, KEKE, GRASS, TILE`
    - `IS`
    - `YOU, WIN, PUSH, STOP, DEFEAT, SINK, OPEN, SHUT`
- Locally saved level unlocks (if you close and reopen the game, unlocked levels remain unlocked, and solved levels remain solved)
    - Solving each unsolved level unlocks 2 new levels
    - **Cheat code: Unlock all levels by renaming `unlockAll.txt` to `save.txt`**

Not planned, but implemented:

- Animations! All blocks move smoothly (except when undoing)
    - Baba and Keke turn to face their direction of motion
    - Transition fade animation when changing screen between menu and level
- Text highlighting: Active text blocks light up
- Level decorations :)
    - Decorative tiles and grass blocks

Not implemented:

- `MOVE` rule (e.g. `KEKE IS MOVE`)
    - Spacebar to wait (pass a turn) was also not implemented: Waiting has no purpose without the `MOVE` rule
    - There were enough complex levels without the `MOVE` rule :)
- Level selection screen (it caused too many headaches, and the JComboBox level selector looked clean enough)

Known Issues

When undoing moves, each inactive text object has a small chance of flickering.
- This is because a check has to be performed to determine if the text is active or not before the text object can be displayed (should this text light up or not?)
- This check takes some time, especially when undoing moves
- Minor (and inconsistent) graphics bug that does not affect gameplay

When restarting a level, the level panel instantly updates before the fade animation happens. (blocks "jump" into position)
- Updating the level panel during the fade animation causes problems with tracking the active level
- Minor aesthetics issue that does not affect gameplay

Additional Notes

I'm not done with this game! There is still so much I want to fix and so much I want to add (e.g. properly animated walk cycles, a more optimized undo function, a real level selection screen, more rules like `MOVE` and `SHIFT` and `TELE` and `FLOAT`… I could go on forever) that I simply did not have time to get to.

I do plan on continuing development on this game as a side project after my disaster of a first semester is over.
In case your kids are serious about playing this game, I will eventually export it as a .jar or a .exe file. I will probably refactor the code and add new features before then, though.

And I've come a long way from cowering in fear at the sight of JFrames… I can't believe it was just 3 months ago!

Level Hints & Solutions

The remainder of this very long document contains hints and solutions to all the levels in my game.

The levels were designed to build off concepts introduced in previous levels. They do get really challenging, especially towards the end. In case you want to solve the puzzles for yourself, I have provided gradual hints that nudge you towards the solution without directly giving it away.

Level 1: An introduction to the objective of the game: move `YOU` on top of `WIN`.

Solution: Walk to the `FLAG`.

Level 2: Introduces `PUSH` and `STOP`.

Solution: Walk to the `FLAG`.

Level 3: Introduces breaking and making rules.

Solution: Break `WALL IS STOP`, make `FLAG IS WIN`.

Level 4: Reinforces that the individual blocks don't matter; the rules do. This structure of this level is nearly identical to Level 3.

Solution: Break `FLAG IS STOP`, make `FLAG IS WIN`.

Level 5: Rules cannot be read backwards. (`WIN IS FLAG` has no effect)

Solution: Break `WALL IS STOP`, make `WALL IS WIN`.

Level 6: Introduces `SINK`.

Solution: `SINK` both rocks in order to reach the flag.

Level 7: A more challenging version of Level 6.

Solution: `SINK` one rock, then make `ROCK IS WIN`.

Level 8: Explores the interaction between `SINK` and `PUSH`.

Solution: Make `WATER IS PUSH`, then push the water out of the way.

Alternate Solution: Make `WATER IS YOU`.

Level 9: First level where the player is forced to change what is `YOU`.

Hint: Why are there so many walls?

Solution: Make `WALL IS YOU`, then carefully maneuver to sink them and reach the flag. Using the top of the level to align the walls may help with the maneuvering.

Level 10: Explores double-using text.

Hint: How can `KEKE IS YOU` and `FLAG IS WIN` be active at the same time?

Solution:

Level 11: Continues exploring double-using text.

Hint: The flag is useless.

Solution:

Level 12: Introduces `DEFEAT`.

Hint: `DEFEAT` only kills what is `YOU`. What does it not kill?

Solution: Push rocks through the skulls to break `SKULL IS DEFEAT`.

Level 13: Continues exploring `DEFEAT`.

Hint: What can get past the skulls?

Solution: Push boxes past the skulls, then make `BOX IS YOU`.

Level 14: Introduces `OPEN` and `SHUT`.

Hint 1: `OPEN` and `SHUT` are just like any other property... they can apply to anything!

Hint 2: Why is there a `ROCK` text?

Solution: Unlock the first two doors using keys, then make `ROCK IS OPEN` and `ROCK IS PUSH` to unlock the final door using the rock.

Level 15: A complex puzzle exploring `OPEN`, `SHUT`, and `DEFEAT`.

Hint 1: Blocks that are `OPEN` destroy blocks that are `SHUT`.

Hint 2: Unlock the wall.

Solution: Make `BOX IS OPEN` and `WALL IS SHUT` to unlock the wall using the box. Then, break `KEY IS DEFEAT` and make `KEY IS WIN`.

Level 16: Further explores `OPEN` and `SHUT`.

Hint: Double-use `IS`.

Solution: After double-using `IS` to unlock the first door with the key, make `DOOR IS KEY` to bypass the second door.

Alternate Solution: Make `DOOR IS SHUT` and `DOOR IS OPEN` at the same time and let the second door unlock itself :)

Level 17: One of the most notoriously difficult levels from the original Baba is You...

Hint 1: Once `SKULL IS DEFEAT` is made, `YOU` can never enter the flag chamber.

Hint 2: How can `YOU` be in the flag chamber before `SKULL IS DEFEAT` is made?

Solution: Make `ROCK IS BABA`. Move one Baba inside the flag chamber, and use the other Baba to make `SKULL IS DEFEAT` after the first Baba is inside the flag chamber.

Alternate Solution: Double-use `YOU` to make `ROCK IS YOU` and `BABA IS YOU`. The rest of the solution proceeds as described above.

Level 18: An even more difficult variant of Level 17.

Hint 1: This time, there is no way to avoid making `SKULL IS DEFEAT`. How were `DEFEAT` blocks bypassed in previous levels?

Hint 2: Make `ROCK IS YOU` to retrieve the rock.

Hint 3: How can an object be pushed into the flag chamber? Imagine if you had a second Rock or an extra piece of text...

Solution: Make `ROCK IS YOU` and retrieve all accessible text blocks from the right side of the level. Then, double-use `IS` to make `BABA IS YOU` and `ROCK IS PUSH`. leaving one leftover `IS`. Use this `IS` to push the rock into the flag chamber, then make `ROCK IS YOU`.

Level 19: Another notoriously difficult level from the original Baba is You.

Hint 1: Why is `WALL IS STOP` positioned where it is?

Hint 2: Keke can never be pushed onto text. But can text be pushed onto Keke?

Solution: Make `KEKE IS PUSH` and push Keke into the bottom right corner. Then, break `KEKE IS PUSH` and push `WALL IS STOP` onto Keke:

Then, make `KEKE IS YOU` and move upwards to break `WALL IS STOP`.

Level 20: A harder version of Level 19. This is (in my opinion) by far the hardest puzzle in my game, although it is quite doable with the insight from the previous level.

Hint 1: How can you set up the same situation as the previous level?

Hint 2: Make `KEKE IS BABA`.

Solution: Space the two Babas out and position them so that one is above `WALL IS STOP`, and the other is below `WALL IS STOP`. Then, use one Baba to push `WALL IS STOP` onto the other. The rest of the solution proceeds like the solution to Level 19.

And to answer the age-old question, "What is Baba?"

Is Baba a sheep, a rabbit, or something else entirely?

I personally believe that Baba is a sheep. Why? Well...

`BABA IS EWE` :)