RADIOACTIVE WASTES

v2.00

Logic game for HP Prime

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by Piotr Kowalewski

Introduction

It is the near future. Widespread use of nuclear energy has led to the accumulation of a massive amount of radioactive waste over the past decade. As far back as the end of the previous century, the problem of disposing of this waste had been a major concern for many scientists and environmentalists. Despite tremendous technological advancements, an effective and safe method for eliminating these wastes from an already heavily contaminated environment had not been discovered. However, a glimmer of hope has emerged. A group of scientists has developed an efficient method using a force field within which nuclear explosions can be safely conducted without harming the surrounding environment. So the process of disposing of waste stored in old bunkers located on military grounds began. The area was surrounded by a force field, and remotely controlled bulldozers entered the bunkers' interiors.

Rules

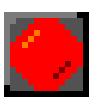
On the game board, you can encounter the following types of fields:

Empty field
An empty area where you can move the bulldozer

Box
A field containing box that you can push

Wall
A wall that you cannot push

Cold waste - A barrel of cold waste; when pushed, it will roll until it hits a barrier



Warm waste - It is formed by combining two wastes that are not in a critical mass; you cannot move it

Critical mass waste (animated electrons) - It turns other wastes into critical mass when they are in close proximity; you cannot move it

Your task in the game is to arrange all radioactive waste in such a way that there is at least one critical mass waste in the immediate vicinity of each of them. When all waste becomes critical mass waste, you will advance to the next level of the game.

If a cold waste stops next to a warm waste, it will turn into a warm waste and cannot be moved anymore. A similar situation will occur when two cold wastes stand next to each other.

On some levels, there will be boxes available to help you control the movement of the cold wastes. There may also be levels where there is more than one critical mass waste at the beginning; in that case, it doesn't matter which one the remaining waste is pushed to, the important thing is that all of them become critical mass waste.

The game is localized into all languages supported by the HP Prime. By default, it launches in the language currently set in the Home Settings. However, you can also change the language from the title screen by pressing the View key.

You can choose the starting level from among the levels you have already unlocked. When launching the game for the first time, only Level 1 is available. To unlock the next level, you must complete the previous one.

Controls

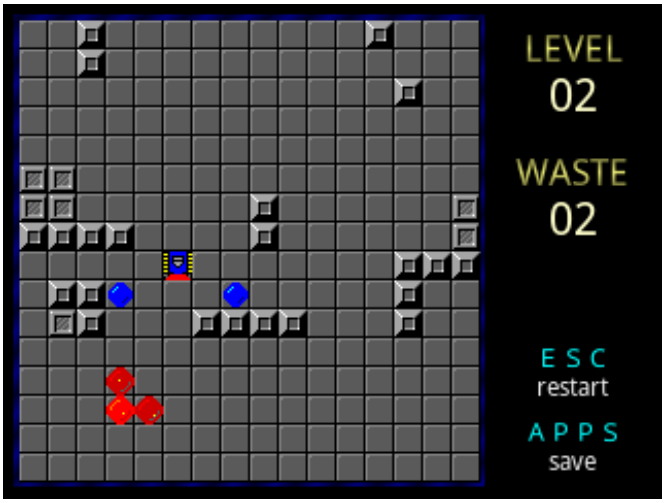
Use the arrow keys or the touchscreen to move the bulldozer. When using the touchscreen, tap a target tile to move the bulldozer there, or drag the bulldozer onto an adjacent object to push it (using a stylus is recommended due to the small size of the tiles).

If you get stuck with no way out, press ESC to restart the level. Press APPS to save your current level progress and exit the game – you'll be able to resume later by pressing the APPS key on the title screen.

The game contains 30 levels.

Good luck!

Screenshots



Version history

1.00 (2015-09-30)
- initial release

1.01 (2015-10-01)
- bug fixes, small performance optimization

1.02 (2015-10-03)
- additional performance optimizations.

1.03 (2023-08-07)
- adjustments to work on firmware 2.1.14730
- displaying numerical values in a format independent of system settings
- improving the smoothness of the animation by delaying it (if needed) instead of dropping frames
- minor graphical fixes

1.04 (2023-11-18)
- added touchscreen controls for bulldozer movement (using shortest path method)
- removed the lives limit
- added the option to select a level (from the unlocked ones) on the title screen
- saving the current game state along with the current level layout for later resume (using embedded resource)
- major performance optimizations - rewritten game logic code
- increased frame rate from 15 to 25 fps
- 3 new levels added
- a smoother level transition effect

1.04.1 (2023-11-20)
- fixed a bug causing the saved board layout not to load when resuming the game

2.00 (2025-06-30)
- converted the program into a standalone app launched from the Application Library
- added interface translations for all languages available on the HP Prime
- code reorganized and adjusted for compatibility with firmware 14591 (and possibly earlier revisions).
- significant rendering performance optimizations
- fixed a bug where cold waste wouldn't transform into critical mass waste despite being adjacent to one
- replaced embedded resources with standard file-based assets
- level data is now loaded from an RLE-encoded file instead of a string
- sprites are now loaded from a graphics file instead of being decoded from a string
- shortest pathfinding processing is now split across animation frames to prevent lag or stuttering
- RLE decoding of level data is now split across animation frames for smoother level transitions
- minor adjustments to the sidebar layout for improved readability
- reduced use of global variables to lower RAM usage after exiting the app
- hidden the occasionally blinking hourglass icon in the top-right corner.