Regular Expression Game
Reusable Learning Object for COMPSCI 250

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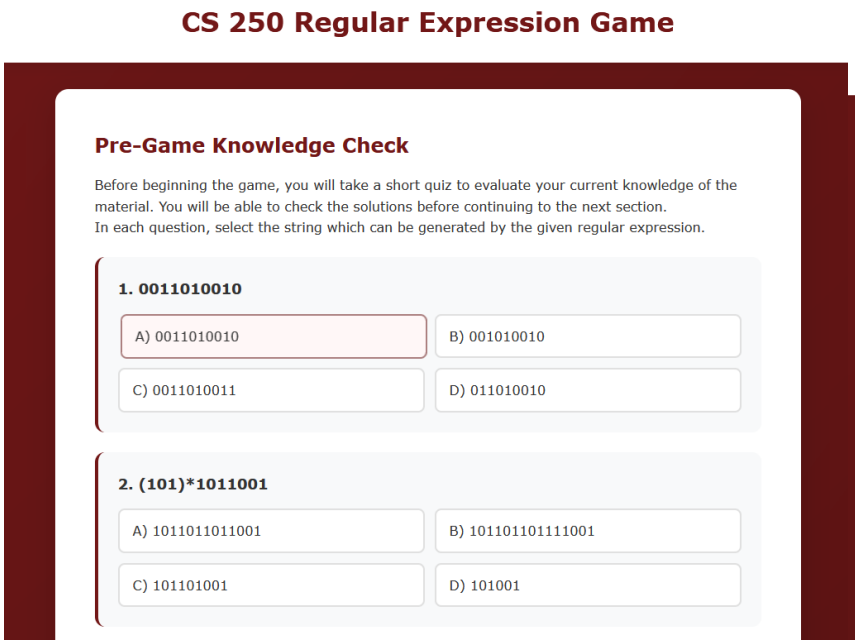
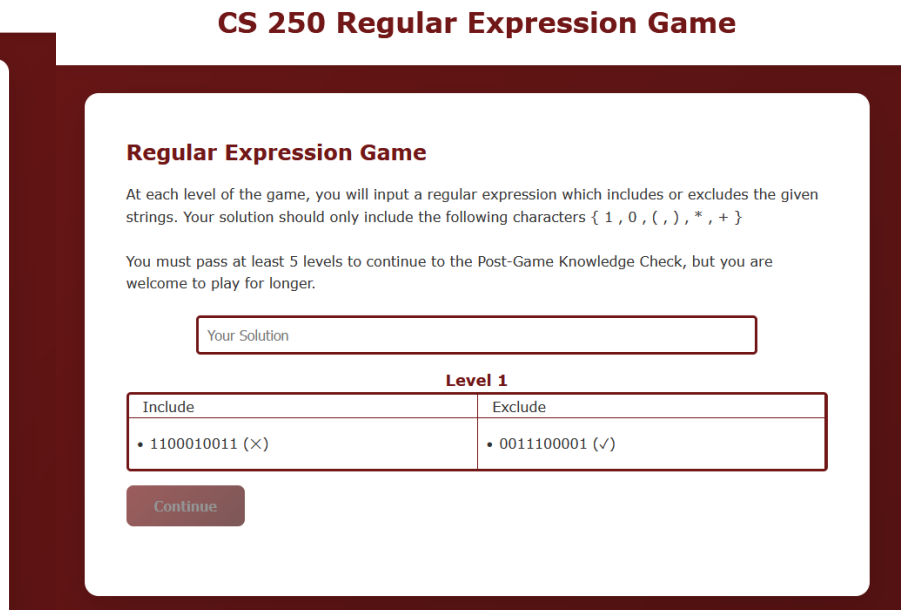
Overview

- Why regular expressions?
- Pre-quiz: 10 questions, identify which string matches the given regular expression.
- Game: Given include/exclude sets, construct a regular expression that includes all of the include strings but none of the exclude strings. Upon completion, include/exclude sets grow. Must complete 5 levels to proceed.
- Post-quiz: Identical to pre-quiz, but with fresh questions.
- Resources [Link Provided]
  - **Lesson Plan** – Detailed teaching guide
  - **Codebase** – Source code for the game
  - **Google Form** for Feedback

Structure





- **Game Demo**

Learning Objectives

- **Knowledge:** *Know* how regular expressions are defined and how they relate to languages.
- **Skills:** *Identify* whether a string matches a regular expression, and *construct* a regular expression string to match a pattern.
- **Disposition:** *Persistence* and *attention to detail* regarding regular expression construction and *logical thinking* in exploration of how changes to patterns affect results.

Accessibility

- **Color:** All information communicated by color is also plainly communicated in text.
- **Screen-reader compatibility:** When the screen reader on the computer is enabled, all questions and interface content are audibly presented.
- **Cross-platform:** Web application for easy access, responsive styling allows for use on desktop and mobile
- **Validation:** According to AccessibilityChecker.Org, our site had no critical issues and scored 95/100.

Pilot

session_results_rows

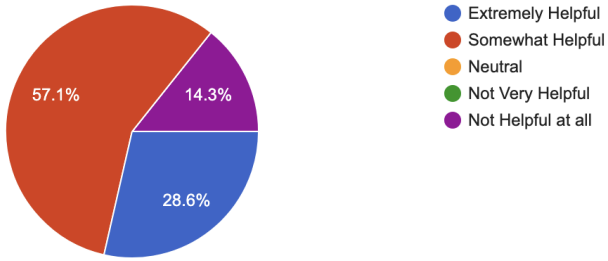
id	session_id	score_before	score_after	levels_completed	created_at
16	mhw4refa1u0b4u365tj	8	0	12	2025-11-12 15:42:51.005114+00
17	mhwca0sdkpebdme6ir9	9	10	7	2025-11-13 01:25:41.060723+00
18	mhws2cw4q38je4qkwsc	4	0	10	2025-11-13 01:57:42.878666+00
19	mhyczr5wq8qvjbzjnb	10	4	6	2025-11-14 04:49:18.026202+00
20	mi4zrx82t4r6m8rcjd	10	10	6	2025-11-18 20:49:38.58649+00
21	mi6hpw3pf0attxgi9eg	5	1	6	2025-11-19 21:11:14.079324+00

- Seven students participated in the Google Form, and six of them submitted their quiz.
- Overall positive feedback
- Did not see improvement between pre-quiz and post-quiz
  - Some students enjoyed the game so much that they forgot to complete the post-quiz and continued playing without pause.
  - Students reported feeling exhausted by the time they reached the post-quiz, resulting in incomplete submissions.

Feedback

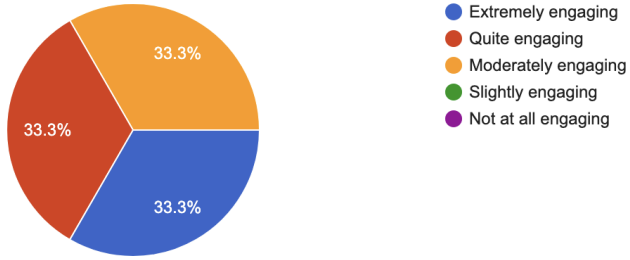
How helpful was the pre-quiz in preparing you for the game?

7 responses



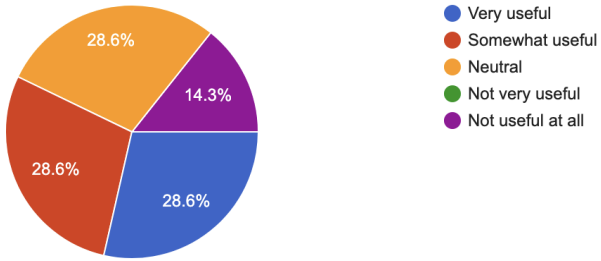
How engaging did you find the Password Game portion?

6 responses



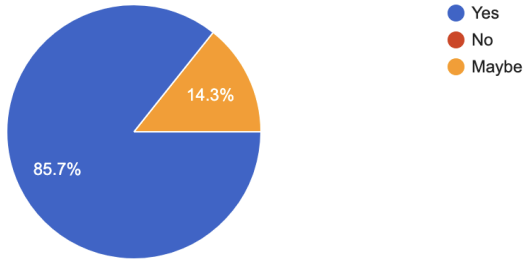
How useful was the post-quiz for assessing your improvement?

7 responses



Would you recommend this game for future students in this course (or a similar course)?

7 responses



- The complete response results are available **here**