RLP-GAMEA · RLP Video Game Design A — Play, Prototypes, Engines and Worlds

Unit 2: The Design Process: Concepts, Documents and Paper Prototypes

Practice Workbook. The same problems, in the same order, as the Practice sections of the online lessons.

Name _____ Period _____

Lesson 2.1 — From Idea to Ship: The Game Development Pipeline

FLUENCY

1. Put the five phases of game development in order: production, launch and live operations, concept, testing and polish, pre-production.

2. Define *vertical slice* and say which phase produces it.

3. In a process flowchart, what do a rectangle, a diamond and an arrow each mean? What must every diamond have?

APPLICATION

4. Name the phase or milestone: (a) all content is in and the team is mainly fixing bugs; (b) a few people write a pitch with the core verb, audience and hook; (c) a patch adds new levels after release; (d) a screen shake is added on impact and a coin sound is tuned.

5. Explain, using the lesson's comparison, why designers test a core rule on paper rather than after forty levels are built.

6. A concept is "a grappling-hook game for players new to platformers." Write one question a prototype could answer, and describe the smallest thing you could build to find out.

7. A team's task list has one card reading "Make level 2." Why is that a poor card, and how would you rewrite it for a To do / Doing / Done board?

REVIEW

8. Review (Lesson 1.4): what does a producer do, and why does that role matter in a pipeline with backward arrows?

Lesson 2.2 — Rules Become Code: A Coin-Grab Core Loop

FLUENCY

1. CharacterBody2D or Area2D? (a) the player you move with code; (b) a coin that notices when the player touches it; (c) a zone that detects when the player reaches the exit.

2. What is a signal in Godot? Name the two signals the coin-grab game uses from built-in nodes.

3. In the main script, what do *@onready* and *$Coin* mean?

APPLICATION

4. The label line is *score_label.text = "Score: %d Time: %d" % [score, ceili(round_timer.time_left)]*. If score is 7 and time_left is 12.3, what text appears?

5. Find the bug. In a later version an enemy that wanders into the coin scores points for the player:
   func _on_body_entered(body: Node2D) -> void:
   collected.emit()
   position = Vector2(randf_range(40.0, 1100.0), randf_range(40.0, 600.0))

6. Code reading: in the timeout function, a student deletes *coin.queue_free()* but keeps *set_process(false)*. What can still happen after time runs out, and what will the player see?

7. The window is 1152 × 648. Write the randf_range calls that would keep the coin in the top half of the window with the same 40-pixel margins used in the lesson.

8. Three rounds at 30 seconds score 12, 15 and 9. Find the mean. If you shorten the timer to 15 seconds, what mean would you roughly predict, and what might make the real result a little higher?

CHALLENGE

9. Main.tscn has four Coin instances. You change one instance's scale in Main.tscn, then change the sprite in Coin.tscn. Describe what each of the four coins looks like when you run the game.

REVIEW

10. Review (Lesson 1.2): the player script moves with *move_and_slide()* and names its parameter *_delta*. Why does it not multiply by delta, and what does the underscore tell Godot?

Lesson 2.3 — Mechanics, Systems and Feedback Loops

FLUENCY

1. Define a positive feedback loop and a negative feedback loop, and give the lesson's example of each.

2. Name the warning sign: (a) one choice is always best; (b) on some turns a player can do nothing meaningful; (c) the player in front keeps getting stronger until the end is a foregone conclusion; (d) players argue about what a rule means.

3. If collecting gems scores points and defeating enemies does not, what will players tend to do, and what does that show about scoring?

APPLICATION

4. With two six-sided dice, how many ways can you roll a sum of 9, and what is the probability (as a fraction and a percent to the nearest whole number)?

5. A rule triggers a bonus on a roll of 2 or 12 with two dice. What is the probability? About how many times would players see it in 72 rolls?

6. In a racing board game, the player in last place moves one extra space each turn. What kind of loop is this, what does it create, and what happens if it is overdone?

7. Critique this draft rule: "On your turn, you may spend 1 coin to Attack. An Attack always wins 3 coins." Name the warning sign, point to the rule and write one "I wonder what would happen if..." suggestion.

8. A family playtester says your game drags. Following the lesson's critique norms for designers, write what you do in the moment and afterward.

REVIEW

9. Review (Lesson 2.1): what is the difference between alpha and beta?

Lesson 2.4 — Building the Paper Prototype and One-Page Design Document

FLUENCY

1. List the eight parts of the one-page design document from the lesson.

2. Give four typography principles the lesson uses for a design document or card.

3. Name two accessibility checks for paper components.

APPLICATION

4. Rewrite this target audience so it is useful: "Everyone."

5. Your task estimates were 30, 45, 20 and 15 minutes. The actual times were 40, 60, 25 and 30 minutes. Find the total estimate, the total actual time, and how far over you went in minutes and as a percent of the estimate (nearest whole percent).

6. Using the seed-smuggling example, explain why "carry up to three seed cards; more seeds slow you by one space" makes the mechanics interact rather than just sit side by side.

7. A card's rules are set in a decorative script font, all capitals, centered, light grey on white. Name three changes that would make it readable.

8. Rules draft: "1. Each player takes a boat. 2. Roll and move. 3. First to the far bank with seeds wins." Name two questions a stranger would ask during a silent set-up test.

REVIEW

9. Review (Lesson 2.3): your one-page document says the leader draws an extra card every turn. What kind of loop is this, and what risk should you list under open questions?

Unit 2 checkpoint

1. All content is in the game and the team is mainly fixing bugs. Which milestone?
   A. Concept
   B. Alpha
   C. Beta
   D. Vertical slice
2. True or false: A vertical slice is a rough prototype that tests one design question.
3. In a process flowchart, what shape stands for a decision such as "Is it fun?"
   A. Rectangle
   B. Diamond
   C. Circle
   D. Arrow

4. Which node detects the player entering it without blocking them?
   A. StaticBody2D
   B. CharacterBody2D
   C. Area2D
   D. Timer

5. The text "Final score: %d" % 9 displays Final score: _____. When the Timer runs out it emits the _____ signal.

6. True or false: Changing the sprite in Coin.tscn updates every Coin instance in Main.tscn.

7. In a strategy game, the player with the most farms earns the most food, which buys more farms. This is...
   A. A negative feedback loop
   B. A positive feedback loop
   C. A dead turn
   D. Unclear rules

8. With two six-sided dice, a sum of 8 happens _____ ways out of 36, and a sum of 2 happens _____ way.

9. Which is a useful target audience for a design document?
   A. Everyone
   B. People who like fun
   C. Families with children aged 8-11 playing a 20-minute game after dinner
   D. Gamers

10. True or false: In a design document, it is better to use a different typeface for each section so readers can tell them apart.

11. A silent set-up tester asks, "Who goes first?" What does that tell you?
    A. The tester is not paying attention
    B. A rule is missing from the written rules
    C. The game needs more art
    D. The game is too long