Name____Fernando Sotelo_____ Mark _____/50

1. Brief introduction __/3

My feature is called Fish Catalogue & Achievements. In this feature, whenever the player catches a fish or they meet a set of requirements, they gain an achievement. Additionally, when they achieve an achievement, they have a chance of gaining special items.

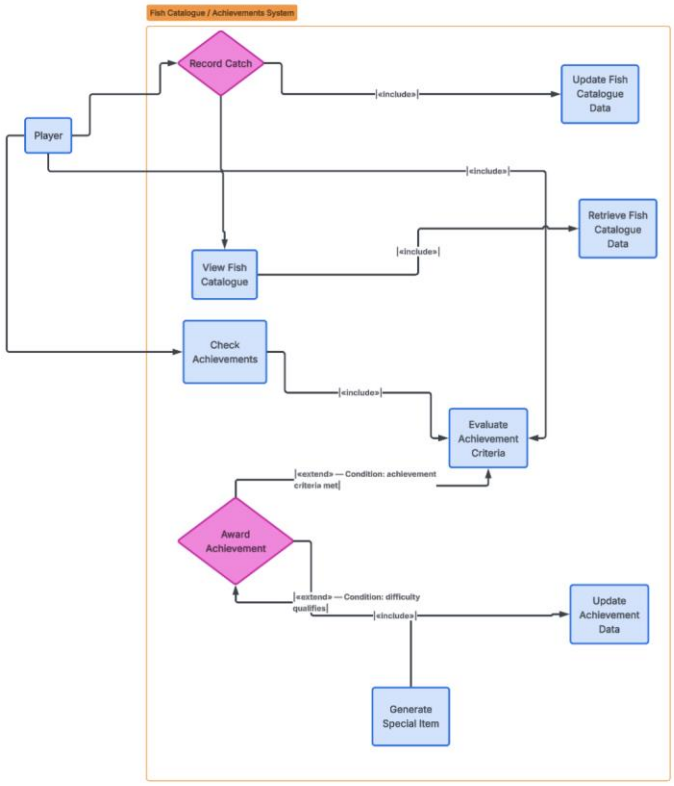
2. Use case diagram with scenario _14

[Use the lecture notes in class.

Ensure you have at least one exception case, and that the <<extend>> matches up with the Exceptions in your scenario, and the Exception step matches your Basic Sequence step.

Also include an <<include>> that is a suitable candidate for dynamic binding]

Use Case Diagrams



Scenarios

Name: Fish Catalogue & Achievements

Summary: A player catches a fish and would like to see their achievements and fish catalogue.

Actors: Player.

Preconditions: Player catches a fish or they check their menu.

Basic sequence:

Step 1: Player catches a fish.
Step 2: The system records the catch and updates Fish Catalogue data.
Step 3: The system evaluates whether the player has gained an achievement.
Step 4: The user can check their Fish Catalogue and Achievements with the press of a button and their data is retrieved.

Extensions / Exceptions (to match the <<extend>> and boundary rules):
Step 3a (Extension – Award Achievement): If achievement criteria is met, the system awards the achievement and updates the achievement data.
Step 3a1 (Extension – Generate Reward): If the awarded achievement difficulty qualifies, the system generates a reward item for the player.
Step 2a (Exception): If the catch data is invalid (unknown fish, missing fields, impossible values), the system shows an error and does not record the catch.

Post conditions: Fish Catalogue and Achievements are shown (and reward shown if generated).

Priority: 2*

ID: C01

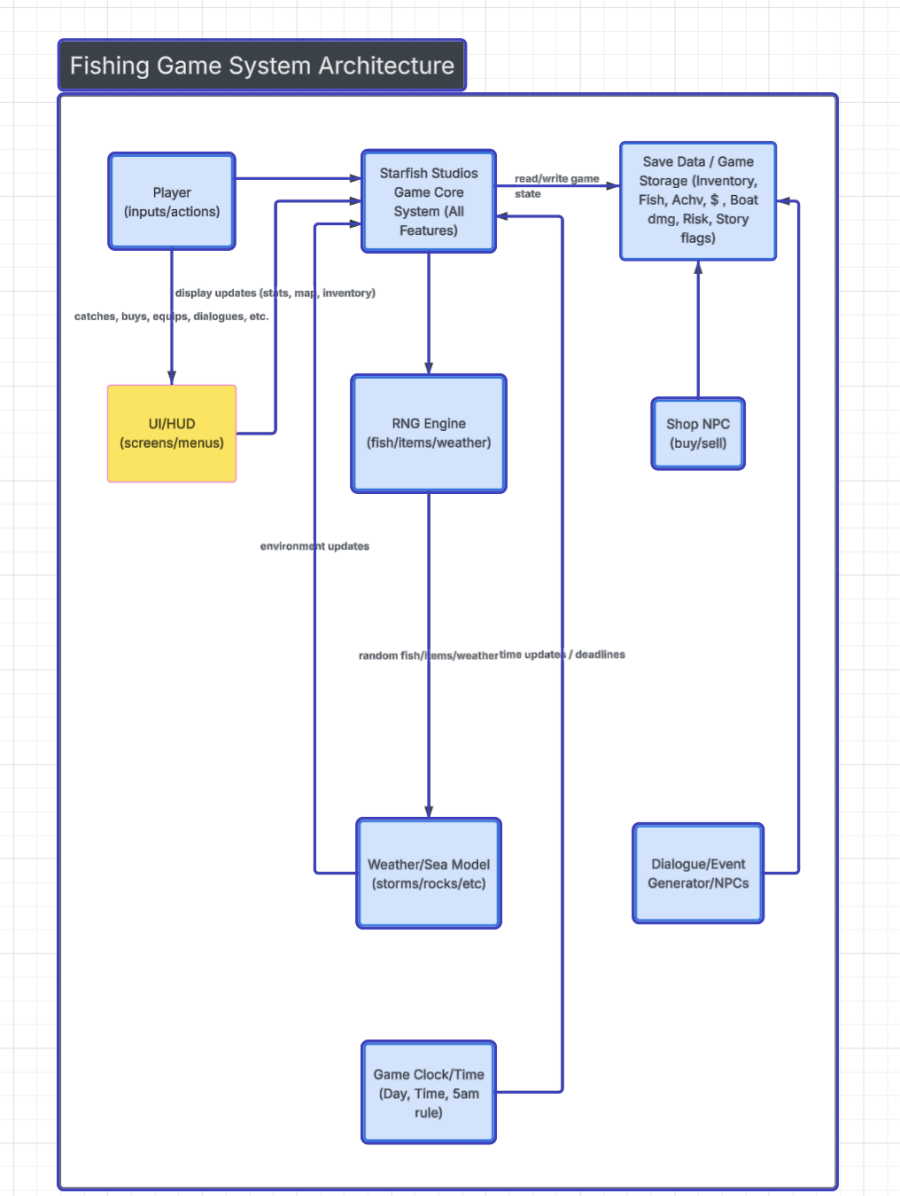
*The priorities are 1 = must have, 2 = essential, 3 = nice to have.

3. Data Flow diagram(s) from Level 0 to process description for your feature _____14

[Get the Level 0 from your team. Highlight the path to your feature]

Example:

Data Flow Diagrams



Process Descriptions

INPUT: fish_id, fish_length_cm

Step 1: Receive catch event from player

Step 2: Validate catch data

IF fish_id is invalid OR missing THEN

Display error message

STOP process

END IF

```
    IF fish_length_cm < 12 OR fish_length_cm > 40 THEN
        Display error message
        STOP process
    END IF

Step 3: Record catch
    Add fish to inventory
    Update Fish Catalogue data

Step 4: Evaluate achievements
    FOR each achievement
        IF achievement criteria met AND not already earned THEN
            Award achievement
            Update achievement data

            IF difficulty qualifies THEN
                Generate reward item
                Add reward to inventory
            END IF
        END IF
    END FOR

Step 5: Allow user to view data
    IF player selects Catalogue or Achievements THEN
        Retrieve and display data
    END IF
```

4. Acceptance Tests _____9

[Describe the inputs and outputs of the tests you will run. Ensure you cover all the boundary cases.]

Achievement Criteria Validation

Output	Total Catches After Recording	Difficulty	Notes
No Achievement Awarded	9	Easy	Below threshold. Achievement requires 10 catches.
Achievement Awarded + Data Updated	10	Easy	Threshold met. Achievement awarded. No reward generated for Easy difficulty.

Achievement Awarded + Data Updated + Reward Generated	10	Hard	Threshold met. Hard difficulty qualifies for reward generation.
No New Achievement Awarded	11	Easy	Above threshold. Achievement should not duplicate once already earned.
No New Achievement Awarded	11	Hard	Above threshold. No duplicate achievement or additional reward.

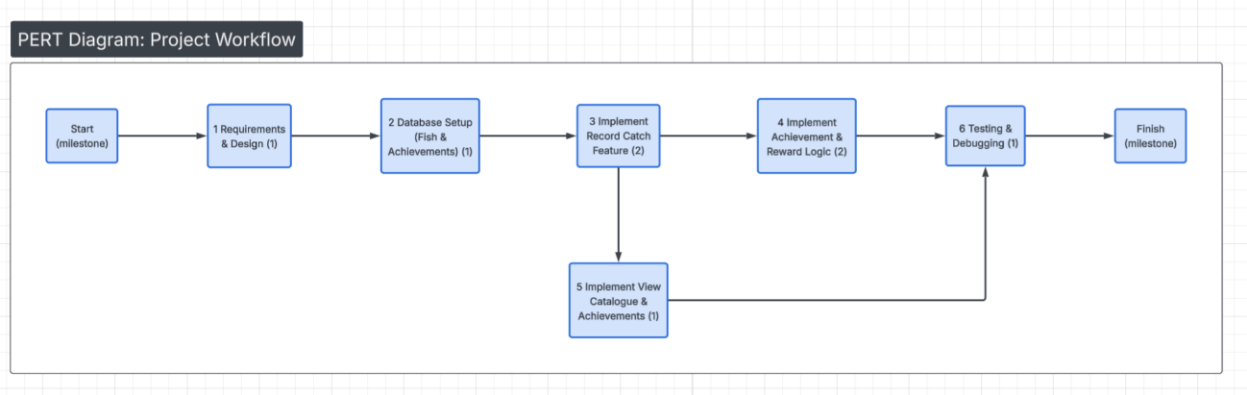
Fish Length Validation

Output	Fish Length (cm)	Notes
Catch Accepted	12	Minimum valid boundary. 12 cm is accepted because it is equal to the lower limit.
Catch Accepted	40	Maximum valid boundary. 40 cm is accepted because it is equal to the upper limit.
Error – Invalid Length	11.9	Below minimum boundary. Any value less than 12 cm is rejected.
Error – Invalid Length	40.1	Above maximum boundary. Any value greater than 40 cm is rejected.
Error – Invalid Length	0	Zero length is not allowed.
Error – Invalid Length	-5	Negative values are invalid.

5. Timeline _____/10

Task	Duration (PWks)	Predecessor Task(s)
1. Requirements & Design	1	-
2. Database Setup (Fish & Achievements)	1	1
3. Implement Record Catch Feature	2	2
4. Implement Achievement & Reward Logic	2	3
5. Implement View Catalogue & Achievements	1	3
6. Testing & Debugging	1	4, 5

Pert diagram



Gantt timeline