5 Minutes Dealer – Technical Design Document (TDD)

Game: 5 Minute Dealer
Engine: Unity (C#)

Core Systems & Scripts

1. Player System

- **PlayerController.cs**

  - Handles horizontal input (A/D or arrows).

  - Movement speed adjustable.

- **PlayerInteraction.cs**

  - Detects nearby buyers (trigger colliders).

  - Starts selling when `E` pressed.

  - Communicates with `ProgressBarController`.

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2. Progress Bar System

- **ProgressBarController.cs**

  - UI element spawned above player on interaction.

  - Fills while `E` held.

  - Drains when released.

○ Events: `OnSaleSuccess`, `OnSaleFail`, `OnSaleInterrupted`.

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3. Buyer System

- **BuyerSpawner.cs**

  ○ Spawns buyers at random street positions.

  ○ Configurable spawn rate & wait duration.

- **BuyerController.cs**

  ○ Idle until interacted.

  ○ Waits for bar completion → success/fail outcome.

  ○ Leaves if ignored or failed.

- Events: `OnBuyerLeft`, `OnBuyerServed`.

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4. Cop System

- **CopSpawner.cs**

  ○ Spawns cops at intervals or predefined patrol points.

- **CopController.cs**

  ○ Moves left/right along street.

  ○ Detects buyers in range.

  ○ Enters "suspicious state" if player selling near buyer.

  ○ Displays warning (⚠️ icon) before turning.

  ○ On turn → if player selling → Game Over event.

5. Pedestrian System

- **PedestrianSpawner.cs**

  - Spawns neutral NPCs for background movement.

- **PedestrianController.cs**

  - Walks across street, despawns off-screen.

  - No gameplay impact.

6. Score & Economy

- **ScoreManager.cs**

  - Tracks deals completed (score).

  - Raises `OnScoreChanged`.

- **CurrencyManager.cs**

  - Tracks coins earned.

  - Used by ShopManager.

7. Shop System

- **ShopItemData (SO)**

  - ItemName, Price, SellTimeMultiplier, ProfitMultiplier.

- **ShopManager.cs**

  - Displays unlockable items in UI.

- ○ Deducts currency on purchase.

- ○ Updates PlayerInteraction selling parameters.

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8. Game Flow

- **GameTimer.cs**

  - ○ 5 min countdown.

  - ○ Raises `OnTick`, `OnTimeUp`.

- **GameManager.cs**

  - ○ Central state machine (Idle → Playing → GameOver).

  - ○ Listens for GameOver from cops or timer end.

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9. UI System

- **UIManager.cs**

  - ○ Updates score, coins, timer UI.

- **GameOverUI.cs**

  - ○ Shows results (score + coins).

  - ○ Restart button → reloads scene.

- **WarningUI.cs**

  - ○ Displays cop ⚠️ icon above their head.

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10. Audio & VFX

- **AudioManager.cs** (already modular from Farmer).

    - Plays footsteps, bar fill, warning, bust, success.

- **VFXManager.cs** (pooled).

    - Plays warning effect, success burst, busted effect.

Event Flow Example (Selling Encounter)

1. Player collides with Buyer → presses `E`.

2. `PlayerInteraction` tells `ProgressBarController` to start filling.

3. `BuyerController` locks state to "in deal".

4. If Cop nearby & suspicious → `CopController` raises warning.

    - `WarningUI` shows exclamation mark.

    - After delay, cop turns.

    - If still selling → `GameManager` → GameOver.

5. If bar completes → `ProgressBarController` raises `OnSaleSuccess`.

    - `ScoreManager` + `CurrencyManager` updated.

    - Buyer leaves, cop resumes patrol.

Development Order (Suggested)

Week 1 – Core Loop

- PlayerController + PlayerInteraction.

- ProgressBarController.

- BuyerSpawner + BuyerController.

- CopSpawner + CopController (basic patrol + suspicion).

- GameTimer + GameManager.

Week 2 – Expansion & Polish

- ScoreManager + CurrencyManager.

- Shop system (basic product upgrades).

- Pedestrians (flavor).

- Audio + VFX.

- UI polish (HUD + GameOver).

- Playtest + bug fixes.