**Use Cases**

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| **Flow of Events for the *Get Out of Exam Marking* Use Case** | |
| **Objective** | **Player gets out of Exam Marking** |
| **Precondition** | 1. It is the player’s turn.  2. The player has not rolled the dice.  3. The player is in Exam Marking. |
| **Main Flow** | 1. A player is in Exam Marking 2. The player clicks the “Get out of Exam Marking” button. 3. £50 is decremented from their money. 4. The player can then roll the dice and continue with the game. |
| **Alternative Flows** | 1. A player is in Exam Marking. 2. The player clicks the “Get out of Exam Marking” button. 3. The player has less than £50. 4. The player becomes bankrupt and all the tradable cells he or she owns become available in the game. 5. The player is out of the game. |
| 1. A player is in Exam Marking 2. The player uses a Chance or Community Chest Get Out of Exam Marking Free card |
| **Post-Condition** | Player is out of exam marking |

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| **Flow of Events for the *Go to Exam Marking* Use Case** | |
| **Objective** | **Player is sent to Exam Marking** |
| **Precondition** | 1. It is the player’s turn.  2. The player has rolled the dice  3. The player will land in Exam Marking if they land on "Go to Exam Marking", throw three straight doubles in a turn, or draw a Community Chest or Chance Card saying "Go to Exam Marking". |
| **Main Flow** | 1. The player is sent to the Exam Marking cell directly. 2. The player may not buy Establishment directly as are not able to land on the establishments. However, they may sell, trade and mortgage establishments, purchase buildings, participate in auctions, and collect rents. |
| **Alternative Flows** | - |
| **Post-Condition** | Player is in Exam Marking |

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| **Flow of Events for the *Enter Player Details* Use Case** | |
| **Objective** | **Player’s details are recorded** |
| **Precondition** | - |
| **Main Flow** | 1. At beginning of game, a Player Information dialog box will appear asking the players enter the number of players for the game and the name of each player |
| **Alternative Flows** | 1. The number of players must be a whole number between 2 and 8. If the players insert anything different, they will be prompted to retype the number of players again. 2. The name field cannot be empty. If a player fails to enter a string, the game asks the player to retype his/her name. 3. When the Exit button is pressed, the Player Information dialog box closes and the game ends. |
| **Post-Condition** | Player details are displayed |

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| **Flow of Events for the *Pass Go* Use Case** | |
| **Objective** | **Player has passed Go** |
| **Precondition** | 1. It is the player’s turn. 2. The player has rolled the dice. |
| **Main Flow** | 1. If the player passes the Go cell during the movement, or if the player lands on the Go cell after the movement, the player gains £200 |
| **Alternative Flows** | 1. If the player passes the Go cell because he or she is sent to Exam Marking, the player cannot collect the money. |
| **Post-Condition** | Player has passed Go and collected £200 |

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| **Flow of Events for the *Visit Exam Marking* Use Case** | |
| **Objective** | **Player is visiting Exam Marking** |
| **Precondition** | 1. It is the player’s turn. 2. The player has rolled the dice. 3. The player lands on the Exam Marking cell. |
| **Main Flow** | 1. The player visits Exam Marking. 2. Nothing happens. |
| **Alternative Flows** | - |
| **Post-Condition** | - |

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| **Flow of Events for the *Roll Dice* Use Case** | |
| **Objective** | **Player rolls the dice** |
| **Precondition** | 1. It is the player’s turn. |
| **Main Flow** | 1. The player rolls the dice by clicking on the Role Dice button. 2. There are two dice 3. The Dice Roll dialog pops up to indicate the value of the dice roll. |
| **Alternative Flows** |  |
| **Post-Condition** | - |

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| **Flow of Events for the *Buy House* Use Case** | |
| **Objective** | **Player buys a house** |
| **Precondition** | 1. It is the player’s turn.  2. The player has not rolled the dice.  3. The player owns all other establishments of that colour group. |
| **Main Flow** | 1. A player can choose to build houses in the establishment cells in the colour groups that they have monopoly on by pressing the Buy House button before rolling the dice. 2. The price of the house is determined by the cell. 3. After buying the house, the status of the player is updated. |
| **Alternative Flows** | 1. Nothing happens if the player does not have enough money. 2. The player can build at most five houses in a cell. |
| **Post-Condition** | - |

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| **Flow of Events for the *Go to Free Parking* Use Case** | |
| **Objective** | **Player lands on Free Parking** |
| **Precondition** | 1. It is the player’s turn.  2. The player has rolled the dice.  3. The player lands on the Free Parking. |
| **Main Flow** | Nothing happens to a player on the Free Parking cell. |
| **Alternative Flows** | - |
| **Post-Condition** | - |

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| **Flow of Events for the *Trade Establishment* Use Case** | |
| **Objective** | **Player wants to trade an Establishment** |
| **Precondition** | 1. It is the player’s turn.  2. The player has not rolled the dice. |
| **Main Flow** | 1. The player may ask another player to sell their tradable cells. 2. If the player wants to trade with another player, clicks on the Trade button. 3. The Trade Establishment dialog box appears and the player enters the player with whom they wish to trade with, the cell they want to buy, and the amount of money willing to pay. 4. Dialog box shows up to ask the seller if the seller agrees with the deal. 5. The seller clicks on Yes and the cell is sold. |
| **Alternative Flows** | 1. If the player clicks on Cancel button, the dialog closes and the deal is cancelled. 2. If the player does not have enough money, the deal is cancelled. |
| **Post-Condition** | - |

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| **Flow of Events for the *Pay Rent* Use Case** | |
| **Objective** | **Player pays rent** |
| **Precondition** | 1. It is the player’s turn.  2. The player has rolled the dice.  3. The player lands on a tradable cell that is owned by another player. |
| **Main Flow** | 1. The player pays rent to the owner of the cell. The rate of the rent depends on the type of cell the player lands on 2. Each cell may have a different rent rate. If the cell is in the owner’s monopoly colour group, the rent doubles. |
| **Alternative Flows** | 1. If the player does not have enough money to pay the rent, the player is bankrupt. He or she needs to give all the tradable cells to the owner, and is out of the game. |
| **Post-Condition** | Player has paid rent on establishments |

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| **Flow of Events for the *Draw Chance Card* Use Case** | |
| **Objective** | **Player has to draw a Chance card** |
| **Precondition** | 1. It is the player’s turn.  2. The player has rolled the dice.  3. The player lands on a Chance cell. |
| **Main Flow** | 1. When the player lands on a Chance cell, they draw a card by clicking the Draw Chance Card button. 2. A card is drawn from the top of the Chance card pile 3. The player performs the actions on the card – collect money, lose money, go to Exam Marking, get out of Exam Marking free token, go to a particular cell. |
| **Alternative Flows** | 1. If the player does not have enough money to pay the fee, the player is bankrupt. If the fee is to pay another player, they need to give all the tradable cells to the owner, the player is now out of the game. |
| **Post-Condition** | Player has followed instructions on the chosen card |

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| **Flow of Events for the *Draw Community Chest Card* Use Case** | |
| **Objective** | **Player has to draw a Community Chest card** |
| **Precondition** | 1. It is the player’s turn.  2. The player has rolled the dice.  3. The player lands on a Community Chest cell. |
| **Main Flow** | 1. When the player lands on a Community Chest cell, they draw a card by clicking the Draw Community Chest Card button. 2. A card is drawn from the top of the Community Chest card pile. 3. The player performs the actions on the card – collect money, lose money, go to Exam Marking, get out of Exam Marking free token, go to a particular cell. |
| **Alternative Flows** | 1. If the player does not have enough money to pay the fee, the player is bankrupt. If the fee is to pay another player, they need to give all the tradable cells to the owner, the player is now out of the game. |
| **Post-Condition** | Player has followed instructions on the chosen card |

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| **Flow of Events for the *Pay Tax* Use Case** | |
| **Objective** | **Player pays tax** |
| **Precondition** | 1. It is the player’s turn.  2. The player has rolled the dice.  3. The player lands on a tax fee cell. |
| **Main Flow** | 1. The player pays tax to the bank. 2. The fee amount may vary depending on the cell. |
| **Alternative Flows** | If the player does not have enough money to pay the tax, the player is bankrupt. He or she needs to give all the tradable cells to the bank, and is out of the game. |
| **Post-Condition** | Player has paid tax |

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| **Flow of Events for the *Buy Establishment* Use Case** | |
| **Objective** | **Player buys an Establishment cell** |
| **Precondition** | 1. It is the player’s turn.  2. The player has rolled the dice.  3. The player lands on an unowned Establishment cell. |
| **Main Flow** | 1. A player can choose to buy the establishment if they land on it and it is not currently owned. 2. The price of the establishment is determined by the cell. 3. After buying the establishment, the status of the player is updated. |
| **Alternative Flows** | 1. Nothing happens if the player does not have enough money. 2. The player now owns all cells of this type and can upgrade housing. |
| **Post-Condition** | Player now owns the Establishment or couldn't afford it |

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| **Flow of Events for the *Player Rolls Double* Use Case** | |
| **Objective** | **Player rolls a double** |
| **Precondition** | 1. It is the player’s turn.  2. The player has rolled the dice. |
| **Main Flow** | 1. The dice has landed on same numbers – rolled a double. 2. Player moves the spaces 3. The player rolls the dice for a second time and moves 4. If the player rolls a third roll of doubles, rather than landing on the square you would go to, go immediately to Exam Marking. |
| **Alternative Flows** | 1. If the player is in Exam Marking and rolls a double they are able to get out of Exam Marking. |
| **Post-Condition** | Player has moved position or got out of Exam Marking. |

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| **Flow of Events for the *Player Lands on Unowned Establishment* Use Case** | |
| **Objective** | **Player purchases unowned Establishment** |
| **Precondition** | 1. It is the player’s turn.  2. The player has rolled the dice. |
| **Main Flow** | 1. The player has the option of buying the unowned establishment 2. If a player lands on an establishment and refuses to buy it the others may bid on the establishment. The player with the highest bid gets the establishment. |
| **Alternative Flows** | - |
| **Post-Condition** | - |

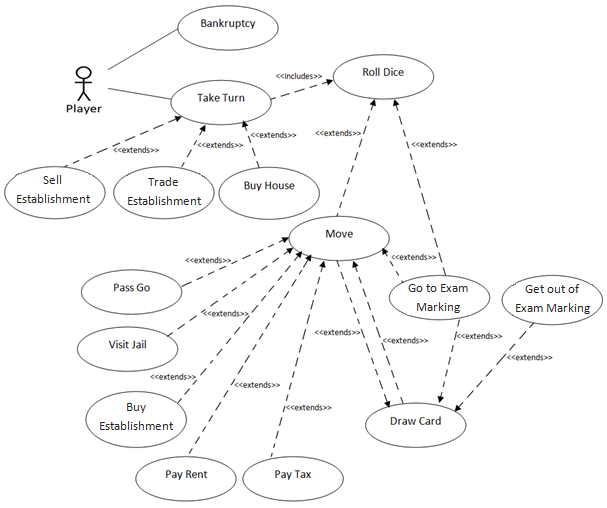
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| **Flow of Events for the *Player Lands on Owned Establishment* Use Case** | |
| **Objective** | **Player has landed on a pre-owned Establishment** |
| **Precondition** | 1. It is the player’s turn.  2. The player has rolled the dice.  3. Player has landed on a cell that is already owned. |
| **Main Flow** | 1. If player lands on an establishment owned by another player, they have to pay the rent stated on establishment card to that player 2. If player lands on an establishment that another player has a monopoly (owns all establishments of a colour group), the rent to be paid is now doubled. |
| **Alternative Flows** | If an establishment is owned by a player and another player lands on the establishment and the owner does not realise it before another player rolls the dice then the player does not have to pay the owner. |
| **Post-Condition** | The player has paid rent |

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| **Flow of Events for *Mortgaging Establishments* Use Case** | |
| **Objective** | **Player has mortgaged an Establishment** |
| **Precondition** | 1. It is the player’s turn.  2. The player has rolled the dice.  3. Player want to mortgage one of their establishments  4. Unimproved establishments can be mortgaged through the Bank at any time.  5. Before an improved establishment can be mortgaged, all the buildings on all the establishments of its colour-group must be sold back to the Bank at half price. The mortgage value is printed on each Title Deed card. |
| **Main Flow** | 1. The player takes a mortgage from the bank on the establishment 2. No rent can be collected on mortgaged establishments or utilities, but rent can be collected on unmortgaged establishments in the same group 3. To lift the mortgage, the owner must pay the Bank the amount of mortgage *plus* 10% interest. When all the establishments of a colour-group are no longer mortgaged, the owner may begin to buy back houses at full price 4. The player who mortgages an establishment retains possession of it and no other player may secure it by lifting the mortgage from the Bank. However, the owner may sell this mortgaged establishment to another player at any agreed price. If you are the new owner, you may lift the mortgage at once if you wish by paying off the mortgage plus 10% interest to the Bank. If the mortgage is not lifted at once, you must pay the Bank 10% interest when you buy the establishment and if you lift the mortgage later you must pay the Bank an additional 10% interest as well as the amount of the mortgage |
| **Alternative Flows** |  |
| **Post-Condition** | The player has taken mortgage out on a Establishment |

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| **Flow of Events for the *Move Position* Use Case** | |
| **Objective** | **Player relocates their piece on the board.** |
| **Precondition** | 1. It is the player's turn 2. Player has rolled the dice or given movements from a drawn card |
| **Main Flow** | 1. The movement is based on the player’s dice roll: whatever number is rolled, player moves the same amount of places 2. The new position and information of the player is displayed 3. The turn ends when the player hits the End Turn button |
| **Alternative Flows** | 1. Player has taken a card after landing on Chance or Community chest 2. The card indicates the player to move to a particular board square 3. Player's piece is relocated to the card specific location |
| **Post-Condition** | Player's board piece is relocated |

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| **Flow of Events for the *Buy Facility* Use Case** | |
| **Objective** | **Player purchases a Facility.** |
| **Precondition** | 1. It is the player’s turn.  2. The player has not rolled the dice.  3. The player owns all other establishments of that colour group.  4. The player owns 4 houses on each cell of that group. |
| **Main Flow** | 1. A player can choose to build a Facility on a Establishment with 4 houses on it- if all other cells in that colour group also have 4 houses, by pressing the Buy Facility button before rolling the dice. 2. The price is determined by the cell. 3. After buying the Facility, the status of the player is updated. |
| **Alternative Flows** | 1. Nothing happens if the player does not have enough money. |
| **Post-Condition** | - |

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| **Flow of Events for the *End Turn* Use Case** | |
| **Objective** | **End the current players turn.** |
| **Precondition** | 1. It is the player's turn 2. The player has finished rolling the dice and completed the related actions, if any |
| **Main Flow** | 1. The current player has finished rolling the dice and their piece has been relocated if applicable 2. The player clicks end turn 3. The players turn is ended |
| **Alternative Flows** | - |
| **Post-Condition** | The current player's turn has ended. |

**Use Case Diagram**

