**Catalogue**

**Use Case Diagram**

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| --- | --- | --- | --- |
| **Use Case** | **Initiating Actor** | **Input** | **Result** |
| Command Engine | Player | report command | Engine reports its status, remaining coolant and if its cooling a room: the rooms status and temperature. |
| refill command | Engine will refill coolant to max if it is stationed. Will do nothing if it is not. |
| recall command | Set engines status as stationed. |
| go to room command | Engine status switched to on-call, the room given is associated with the engine. |
| Clear Shell | Player | clear command | Shell is cleared of previous written lines. |
| Get Room Report | Player | room report command | Lists the amount of rooms in the different states derived from their temperature. |
| Get Room List | Player | room list command | Rooms are listed with their respective numbers, temperatures and states. |
| Quit | Player | quit command | Game ends and end screen is displayed with the room report. |
| Cool Room | Tick Delegate | coolant amount | Room cools by an amount relative the amount of coolant released. Coolant does not go beyond 0. |
| Add Rooms To Delegate | Motel | temperature of neighbouring rooms | If the temperature of a room exceeds 149 degrees the adjacent rooms heat up methods are added to the delegate. |
| Heat Up Room | Tick Delegate | heat room methods | All rooms added to the delegate are heated by the amount stated per tick. |
| Check Game End | Tick Delegate | room’s can heat up bools, delegate members | If the delegate is empty and none of the rooms can heat up the game ends. |

**Class Diagram**

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| --- | --- | --- | --- | --- | --- |
| **Class** | **Attributes** |  | **Opperations** |  | **Purpose** |
| Command | +CommandWord | First word routing the command (room, engine etc). | +IsUnknown() | Returns a Boolean to validate the command word is entered. | This Class is used to wrap the command given by the player in an object. |
| +SecondWord | Second word of command (list, goto etc). |
| + ThirdWord | Third word of command (ie room #). |
| +FourthWord | Fourth word of command. |
| Command Words | +validCommands[String] | List of valid command words. | +IsCommand(String):bool | Checks player entered command word. | User to check the initial command entered by the player. |
| Constants |  |  | +GameSettings | Settings such as game speed. | Class containing constants relevant to gameplay. |
| +FireEngineConstants | Fire engine class related constants. |
| +RoomStates: Enum | Room states and their respective temperature ranges |
| Fire Engine | +EngineID |  | +CooldownRoom() |  |  |
| -TargetRoom |  | +GotoRoom() |  |
| -CoolantLevel |  | +RefillEngine() |  |
| -EngineStatus |  | +GotoStation() |  |
| +EngineReport() |  |
| Game | +IsPlaying: bool |  | +TickMethod |  |  |
| -Motel |  | +CommandMethods |  |
| -FireEngine |  | -CheckGameEnd |  |
| Input Handler |  |  | +GetUserInput |  |  |
| -ProcessCommand() |  |
| Motel | +Delegate |  | -StartFire() |  |  |
| +CheckForGameEnd() |  |
| +Add/RemoveFromDelegate() |  |
| -RoomList |  | +ListRooms() |  |
| +CalculateStates |  |
| -PrintStates |  |
| Parser |  |  |  |  |  |
| Program |  |  |  |  |  |
|  |  |
| Room |  |  |  |  |  |
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