

## (GAD170) - Technical Specifications

### Gamemode Manager Script:

#### GamemodeManager → GetAllReferences()

- Inputs
  - npcManagerRef
  - uiManagerRef
- Outputs
  - npcManagerRef
  - uiManagerRef
- Description
  - npcManagerRef is set to NPCManager component
  - uiManagerRef is set to UIManager component

#### GamemodeManager → AddNewCrewMemberToList(string firstName, string lastName, string hobby)

- Inputs
  - firstName
  - lastName
  - hobby
- Outputs
  - activeCrewMembers
- Description
  - firstName, lastName & hobby string parameter variables are added to activeCrewMembers as one index in the list

#### GamemodeManager → RecruitCrewMember()

- Inputs
  - npcManagerRef
  - Local chosenHobbyToAttack
  - humanHobbies
  - Local membersToRemove
  - activeCrewMembers
  - Local firstName
  - Local lastName
  - Local hobby
  - generatedFirstName
  - generatedLastName
  - chosenHobby
- Outputs
  - chosenHobbyToAttack
  - membersToRemove
  - activeCrewMembers
  - Local firstName
  - Local lastName
  - Local hobby

- Description
  - If chosen hobby in NPCManager class is equal to any of the alien hobbies in alienHobbies list
    - Local chosenHobbyToAttack is set to a random human hobby from humanHobbies list in NPCManager class
    - Call RemoveInfoFromCrewBoard with input parameter variable (chosenHobbyToAttack)
    - Local membersToRemove (list string firstName, string lastName, string hobby) is declared
    - For each loop which loops through each member in activeCrewMembers list
      - If member of type hobby is equal to chosenHobbyToAttack
        - Add member to membersToRemove list
    - For each loop which loops through each member in membersToRemove list
      - Gets members in membersToRemove list & removes them from activeCrewMembers list
    - Call ChooseNewCrewMember() from NPCManager class
    - Call SetCrewPortfolio with input parameter variables (npcManagerRef of type generatedFirstName, npcManagerRef of type generatedLastName, npcManagerRef of type chosenHobby) from UIManager class
  - Else
    - Local firstName is set to NPCManager of type generatedFirstName
    - Local lastName is set to NPCManager of type generatedLastName
    - Local hobby is set to NPCManager of type chosenHobby
    - Call AddNewCrewMemberToList with input parameter variables (firstName, lastName, hobby)
    - Call AddInfoToCrewBoard with input parameter variables (firstName, lastName, hobby) from UIManager class
    - Call ChooseNewCrewMember() from NPCManager class
    - Call SetCrewPortfolio with input parameter variables (npcManagerRef of type generatedFirstName, npcManagerRef of type generatedLastName, npcManagerRef of type chosenHobby) from UIManager class
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### **GamemodeManager → RejectCrewMember()**

- Inputs
  - npcManagerRef
  - uiManagerRef
- Outputs
- Description
  - Call ChooseNewCrewMember() from NPCManager class
  - Call SetCrewPortfolio with input parameter variables (npcManagerRef of type generatedFirstName, npcManagerRef of type generatedLastName, npcManagerRef of type chosenHobby) from UIManager class

### **GamemodeManager → Start()**

- Inputs
  - npcManagerRef
  - uiManagerRef
- Outputs
- Description
  - Call GetAllReferences()
  - Call MarkovFirstNameGenerator() from NPCManager class
  - Call MarkovLastNameGenerator() from NPCManager class
  - Call ChooseHobby() from NPCManager class
  - Call SetCrewPortfolio with input parameter variables (npcManagerRef of type generatedFirstName, npcManagerRef of type generatedLastName, npcManagerRef of type chosenHobby)

### **GamemodeManager → Update()**

- Inputs
  - activeCrewMembers
  - isGameOver
  - uiManagerRef
  - portfolioRef
  - crewMembers
  - winObject
- Outputs
- Description
  - If activeCrewMembers has 10 members in it & the isGameOver bool is false
    - Print "You Win" to the log
    - isGameOver is set to true
    - UIManager of type portfolioRef is set to inactive
    - For each loop which loops through each member in UIManager of type crewMembers list
      - Set each member in crewMembers list to inactive
    - UIManager of type winObject is set to inactive

## UI Manager Script:

### UIManager → AddReferences()

- Input
  - profileImage
  - firstName
  - lastName
  - Hobby
  - winObject
  - profilePicRef
  - firstNameTxtResultRef
  - lastNameTxtResultRef
  - hobbyTxtResultRef
- Output
  - profileImage
  - firstName
  - lastName
  - Hobby
  - winObject
- Description
  - profileImage is set to component of type image from profilePicRef
  - firstName is set to component of type TextMeshProUGUI from firstNameTxtResultRef
  - lastName is set to component of type TextMeshProUGUI from lastNameTxtResultRef
  - Hobby is set to component of type TextMeshProUGUI from hobbyTxtResultRef
  - winObject is set to gameObject called "WinTxt"

### UIManager → AddToCrewImageDictionary()

- Input
  - crewCharacterImage
  - crewImages
  - profileCharacterImage
- Output
  - crewImages
- Description
  - For loop which loops through as many times as crewCharacterImage length value
  - Adds profileCharacterImage, crewCharacterImage to crewImages dictionary

### UIManager → SetCrewPortfolioImage()

- Input
  - profileImage
  - profileCharacterImage
- Output
  - profileCharacterImage
- Description
  - profileImage of type sprite is set to profileCharacterImage at index 0

### UIManager → SetCrewPortfolio(string firstNameInput, string lastNameInput, string hobbyInput)

- Input
  - firstNameInput
  - lastNameInput
  - hobbyInput
  - firstName
  - lastName
  - hobby
- Output
  - firstName
  - lastName
  - hobby
- Description
  - Call SetCrewPortfolioImage()
  - firstName of type text is set to firstNameInput value
  - lastName of type text is set to lastNameInput value
  - Hobby of type text is set to hobbyInput value

**UIManager → AddInfoToCrewBoard(string firstName, string lastName, string hobby)**

- Input
  - firstName
  - lastName
  - Hobby
  - crewMembers
  - profilePic
  - firstNameRef
  - lastNameRef
  - hobbyRef
  - firstNameTxt
  - lastNameTxt
  - hobbyTxt
- Output
  - profilePic
  - firstNameRef
  - lastNameRef
  - hobbyRef
  - firstNameTxt
  - lastNameTxt
  - hobbyTxt
- Description
  - For each loop which loops through each member if crewMembers
    - Local profilePic of type Image is set to component of member of type image
    - Local firstNameRef of type GameObject is set to gameObject by name "FirstName"
    - Local lastNameRef of type GameObject is set to gameObject by name "LastName"
    - Local hobbyRef of type GameObject is set to gameObject by name "Hobby"
    - firstNameTxt of type TextMeshProUGUI is set to component of type TextMeshProUGUI from firstNameRef

- lastNameTxt of type TextMeshProUGUI is set to component of type TextMeshProUGUI from lastNameRef
- hobbyTxt of type TextMeshProUGUI is set to component of type TextMeshProUGUI from hobbyRef
- If firstNameTxt of type text is equal to string "First Name"
  - profilePic of type sprite is set to crewCharacterImage at index 0
  - firstNameTxt of type text is set to firstName value
  - lastNameTxt of type text is set to lastName value
  - hobbyTxt of type text is set to hobby value
  - Break out of loop

### UIManager → RemoveInfoFromCrewBoard(string hobby)

- Input
  - Hobby
  - crewMembers
  - profilePic
  - firstNameRef
  - lastNameRef
  - hobbyRef
  - firstNameTxt
  - lastNameTxt
  - hobbyTxt
- Output
  - profilePic
  - firstNameRef
  - lastNameRef
  - hobbyRef
  - firstNameTxt
  - lastNameTxt
  - hobbyTxt
  - profilePic
  - firstNameTxt
  - lastNameTxt
  - hobbyTxt
- Description
  - For each loop which loops through each member if crewMembers
    - Local profilePic of type Image is set to component of member of type image
    - Local firstNameRef of type GameObject is set to gameObject by name "FirstName"
    - Local lastNameRef of type GameObject is set to gameObject by name "LastName"
    - Local hobbyRef of type GameObject is set to gameObject by name "Hobby"
    - firstNameTxt of type TextMeshProUGUI is set to component of type TextMeshProUGUI from firstNameRef
    - lastNameTxt of type TextMeshProUGUI is set to component of type TextMeshProUGUI from lastNameRef
    - hobbyTxt of type TextMeshProUGUI is set to component of type TextMeshProUGUI from hobbyRef
    - If hobbyTxt of type text is equal to hobby string value

- profilePic of type sprite is set to null
- firstNameTxt of type text is set to "First Name" string value
- lastNameTxt of type text is set to "Last Name" string value
- hobbyTxt of type text is set to "Hobby" string value

### **UIManager → Start()**

- Input
  - winObject
- Output
  - winObject
- Description
  - Call AddToCrewImageDictionary()
  - Call AddReferences()
  - Print winObject of type name string value to log
  - winObject is set to inactive

## **NPC Manager Script:**

### **NPCManager → AddCharToFirstNameList()**

- Input
  - firstNameStartLetterList
- Output
  - firstNameStartLetterList
- Description
  - firstNameStartLetterList is cleared
  - firstNameStartLetterList is set to a new list of char variables

### **NPCManager → AddCharToLastNameList()**

- Input
  - lastNameStartLetterList
- Output
  - lastNameStartLetterList
- Description
  - lastNameStartLetterList is cleared
  - lastNameStartLetterList is set to a new list of char variables

### **NPCManager → AddToHumanHobby()**

- Input
  - humanHobbies
- Output
  - humanHobbies
- Description
  - humanHobbies gets 4 string variables added to the list

### **NPCManager → AddToAlienHobby()**

- Input
  - alienHobbies
- Output
  - alienHobbies
- Description
  - alienHobbies gets 4 string variables added to the list

### **NPCManager → AddToFirstNameDictionary()**

- Input
  - firstNameDictionary
- Output
  - firstNameDictionary
- Description
  - firstNameDictionary gets a list of letters added to it with each letter having a value assigned to it in the form of a tuple list with a string & float variable

### **NPCManager → AddToLastNameDictionary()**

- Input
  - lastNameDictionary

- Output
  - lastNameDictionary
- Description
  - lastNameDictionary gets a list of letters added to it with each letter having a value assigned to it in the form of a tuple list with a string & float variable

### **NPCManager → MarkovFirstNameGenerator()**

- Input
  - generatedFirstName
  - currentLetter
  - firstNameStartLetterList
  - firstNameMinLength
  - firstNameMaxLength
  - firstNameLength
- Output
  - generatedFirstName
  - currentLetter
  - firstNameMinLength
  - firstNameMaxLength
  - firstNameLength
- Description
  - generatedFirstName is set to empty
  - currentLetter is set to empty
  - currentLetter is set to a random char from firstNameStartLetterList
  - currentLetter is added to generatedFirstName
  - firstNameMinLength is set to 4
  - firstNameMaxLength is set to 7
  - firstNameLength is set to a random int between firstNameMinLength & firstNameMaxLength
  - For loop which loops through LoopFirstNameDictionary() as many times as firstNameLength value
  - generatedFirstName string gets first char converted to a capital letter

### **NPCManager → MarkovLastNameGenerator()**

- Input
  - generatedLastName
  - currentLetter
  - lastNameStartLetterList
  - lastNameMinLength
  - lastNameMaxLength
  - lastNameLength
- Output
  - generatedLastName
  - currentLetter
  - lastNameMinLength
  - lastNameMaxLength
  - lastNameLength
- Description

- generatedLastName is set to empty
- currentLetter is set to empty
- currentLetter is set to a random char from lastNameStartLetterList
- currentLetter is added to generatedlastName
- lastNameMinLength is set to 4
- lastNameMaxLength is set to 8
- lastNameLength is set to a random int between lastNameMinLength & lastNameMaxLength
- For loop which loops through LoopLastNameDictionary() as many times as lastNameLength value
- generatedLastName string gets first char converted to a capital letter

### **NPCManager → LoopFirstNameDictionary()**

- Input
  - firstNameDictionary
  - currentLetter
  - Value
  - randomValue
  - generatedFirstName
  - decider
- Output
  - Value
  - randomValue
  - generatedFirstName
  - Decider
  - currentLetter
- Description
  - If the currentLetter value is found in the firstNameDictionary as a key
    - Local value (list (char, float)) variable is set to firstNameDictionary value at key value equal to currentLetter value
    - randomValue is set to a random float value between 0.0f & 1.0f
    - If value is not null
      - If value of type probability at index 0 is equal to 1.0f
        - Value of type letter at index 0 is added to generatedFirstName
      - Else if value of type probability at index 0 is equal to 0.5f
        - Local decider is set to random int value between 0 or 1
        - If decider is equal to 0
          - Value of type letter at index 0 is added to generatedFirstName
        - Else
          - Value of type letter at index 1 is added to generatedFirstName
      - Else if value of type probability is greater than randomValue
        - Value of type letter at index 0 is added to generatedFirstName
      - Else
        - Value of type letter at index 1 is added to generatedFirstName
    - currentLetter is set to generatedFirstName at last char index

### **NPCManager → LoopLastNameDictionary()**

- Input
  - lastNameDictionary
  - currentLetter
  - Value
  - randomValue
  - generatedLastName
  - decider
- Output
  - Value
  - randomValue
  - generatedLastName
  - Decider
  - currentLetter
- Description
  - If the currentLetter value is found in the lastNameDictionary as a key
    - Local value (list (char, float)) variable is set to lastNameDictionary value at key value equal to currentLetter value
    - randomValue is set to a random float value between 0.0f & 1.0f
    - If value is not null
      - If value of type probability at index 0 is equal to 1.0f
        - Value of type letter at index 0 is added to generatedLastName
      - Else if value of type probability at index 0 is equal to 0.5f
        - Local decider is set to random int value between 0 or 1
        - If decider is equal to 0
          - Value of type letter at index 0 is added to generatedLastName
        - Else
          - Value of type letter at index 1 is added to generatedLastName
      - Else if value of type probability is greater than randomValue
        - Value of type letter at index 0 is added to generatedLastName
      - Else
        - Value of type letter at index 1 is added to generatedLastName
    - currentLetter is set to generatedLastName at last char index

### **NPCManager → SetupCrewMember()**

- Description
  - Call AddCharToFirstNameList()
  - Call AddToFirstNameDictionary()
  - Call AddCharToLastNameList()
  - Call AddToLastNameDictionary()
  - Call AddToHumanHobby()
  - Call AddToAlienHobby()

### **NPCManager → ChooseHobby()**

- Input
  - chosenHobby

- isAlien
- alienHobbies
- humanHobbies
- Output
  - chosenHobby
  - isAlien
- Description
  - chosenHobby is set to empty
  - Local int isAlien is set to random int between 0 or 1
  - If isAlien int is 0
    - chosenHobby is set to random hobby from alienHobbies list
  - Else
    - chosenHobby is set to random hobby from humanHobbies list

### **NPCManager → ChooseNewCrewMember()**

- Description
  - Call MarkovFirstNameGenerator();
  - Call MarkovLastNameGenerator();
  - Call ChooseHobby()

### **NPCManager → Start()**

- Description
  - Call SetupCrewMember()