**SENG2130 Systems Analysis and Design**

**Assignment 1: Requirements Modelling**

**Tutorial Group 4 (Thurs 5 - 7pm)**

**Pearly Gates Cemetery and Crematorium System**

**Report prepared by**:

Lachlan Carroll

Samuel Dobel

Danielle McLean

Matthew Smith

Toby Walmsley

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**1a. List of all use cases with short descriptions**

From our analysis, we have identified the following 8 use cases

**Scheduling of Graveside Services:**

This use case includes reserving a grave plot (Location) then facilitate the scheduling of the grave digging and burial of the coffin or urn.

**Check Availability of Machinery and Book:**

This use case relates to checking the availability of machinery that is required to perform the the graveside services then allow staff to place a reservation / book this equipment for that use.

**Reserve Urn or Coffin:**

The purpose of this use case is to book the coffin that the dead will be buried in or the urn in which the cremated remains will be held. This will allow the customers to choose the urn or coffin from the available selection from the onsite inventory.

**Reserve Chapel:**

Provides a reservation of the exclusive use of the onsite Chapel for customers to hold funeral services. This also includes the reservation of car parking and marquis for the event.

**Ordering Flowers:**

Allows the ordering of flowers that are available from the onsite Greenhouse or from external Florists that will then be used for the funeral service or displayed at grave sites.

**Selection of Burial Type:**

Allows the booking of the requested burial type. Currently available choices are:

Lawn Cemetery, Monument, Mausoleum or Green burial

**Ongoing Lawn Care:**

This use case relates to the scheduling and record of the maintenance of the grounds.

**Cremation:**

Booking of cremations using the onsite Crematorium then distribution of ashes to customer for burial or to take offsite

**1b. Use case diagram for entire system**

**2. Detailed Use Case Descriptions**

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| **Use Case Name:** | Scheduling of Graveside Services | |
| **Brief Description:** | book all of the services that are needed to bury the dead and host a funeral if required. Booking everything in advance will ensure that all parts of the funeral will be available at the same time. | |
| **Actors:** | Manager, Grave Digger, Ground Staff | |
| **Related Use cases:** | prerequisite: Check availability of machinery | |
| **Entry condition:** | Customer Contacting Manager | |
| **Exit condition:** | Completed Booking | |
| **Flow of Events:** | **Actors** | **System** |
|  | 1. Manager Looks-up grave plot availability | 1.1 Return available Plots |
|  | 2. Manager selects plot | 2.1 Confirm Plot booking |
|  | 3. Manager enters Deceased Details and booker’s contact | 3.1 Booking Summary Confirmation |
|  | 4. Manager Selects confirm booking | 4.1 Booking made  4.2 Send details to grave digger and ground staff |
|  | 5. Grave Digger confirms completion of grave | 5.1 Marks grave as dug  5.2 Notify Ground staff |
|  | 6. Ground Staff reserve sling | 6.1 marks 1 sling as reserved if available  6.2 If none available display re-book/ display available dates/times  6.3 Send Completion notice to Manager |
| **Exception condition:** | 1.1 If requested grave site is unavailable, provide alternatives  6.1 If sling unavailable, Notification “ sling not available, order from provider | |

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| **Use Case Name:** | Check Availability of Machinery and book | |
| **Brief Description:** | Book all machinery and tools required for the service and ensure they haven't been double booked and are available. | |
| **Actors:** | Manager, Ground Staff, Grave Digger, storeman | |
| **Related Use cases:** | Scheduling graveside services | |
| **Entry condition:** | Machinery required | |
| **Exit condition:** | Machinery booked | |
| **Flow of Events:** | **Actors** | **System** |
|  | 1.Ground staff Looks-up machinery availability requested time | 1.1 Displays available equipment at requested time |
|  | 2. Ground staff makes reservation of required equipment | 2.1 Confirm equipment reservation  2.2 Notifies ground staff/ Storeman |
|  | 3. Storeman reserve equipment | 3.1 Notifies manager of equipment availability |
| **Exception condition:** | 1.1 If requested machinery is unavailable, provide alternative times and notify manager of available times | |

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| **Use Case Name:** | Reserve Urn / coffin | |
| **Brief Description:** | Reserve the urn or coffin from onsite inventory. | |
| **Actors:** | Manager, Inventory Manager | |
| **Related Use cases:** | Scheduling of graveside services | |
| **Entry condition:** | Customer choosing urn or coffin | |
| **Exit condition:** | Urn / Coffin reserved | |
| **Flow of Events:** | **Actors** | **System** |
|  | 1.Manager inputs Urn or Coffin | 1.1 Display available selections based on input |
|  | 2. Manager selects from the available options | 2.1 Confirms Stock on hand  2.2 prompt to Confirm Reservation |
|  | 3. Manager Confirms reservation | 3.1 Adjusts stock level  3.2 Notifies inventory manager of booking |
|  | 4. Inventory Manager marks Urn / Coffin as reserved | 4.1 Send confirmation message to manager  4.2 Urn/ Coffin is reserved |
| **Exception condition:** | 1.1 If requested Urn / Coffin is unavailable, outsource product  2.1 if stock in hand is zero, a)provide alternate stocked items  b) outsource product | |

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| **Use Case Name:** | Reserve Chapel | |
| **Brief Description:** | Reserve the Chapel for funeral services including marquis &amp; onsite parking | |
| **Actors:** | Manager, Chapel Staff | |
| **Related Use cases:** | Scheduling of graveside services | |
| **Entry condition:** | Requested funeral service | |
| **Exit condition:** | Chapel Booked | |
| **Flow of Events:** | **Actors** | **System** |
|  | 1.1 Manager queries available reservation times | 1.1 returns available reservation times |
|  | 2.1Manager selects reservation time | 2.1 confirm reservation booking |
|  | 3.1 Manager enters customer details and chosen funeral director | 3.1Prompts number of car parks to book |
|  | 4.1 Manager enters number number of car parks required | 4.1 System confirms number of car park spaces reserved  4.2 Prompt number of marquis to reserve |
|  | 5.1 Manager enters number of marquies are required | 5.1 Confirms number of marquis to reserve  5.2 return booking summary confirmation and quote |
|  | 6.1 Manager selects confirm booking | 6.1 forwards final confirmation to Chapel staff |
| **Exception condition:** | 1.Requested booking time is unavailable, provide alternatives  4.Park spaces are not available, notify manager (continue query)  5.Marquis are not available, notify manager (continue query)  6. If booking not confirmed, start over or cancel booking | |

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| --- | --- | --- |
| **Use Case Name:** | Order Flowers | |
| **Brief Description:** | Order flowers for Chapel service or burial | |
| **Actors:** | Manager, Florist, Ground staff, Greenhouse keeper | |
| **Related Use cases:** | Scheduling of graveside services  Reservation of the chapel | |
| **Entry condition:** | Flowers requested | |
| **Exit condition:** | Flowers received | |
| **Flow of Events:** | **Actors** | **System** |
|  | **1.**Manager enters service date | **1.1** Date input confirmation  1.2 Provides available selections |
|  | 2. Manager request flower type | 1.1 Displays available selects and packages |
|  | 2. Manager selects from available options | 2.1 Sends flower query to Greenhouse Keeps |
|  | 3. Greenhouse Keeper confirms what flowers are available from greenhouse | 3.1 return flowers that need to be ordered for package |
|  | 4. Greenhouse Keeper sends order request to local florist | 4.1 Send notification to local florist |
|  | 5. Florist confirms available stock | 5.1 return notification of stock to Greenhouse keeper |
|  | 6.Greenhouse Keeper marks flowers as received | 6.1 Notifies ground staff of flower delivery |
|  | 7. Ground staff accepts delivery | 7.1 Notify Manager of flower receival  7.2 flowers received |
| **Exception condition:** | 4. Greenhouse keeper doesn’t have required stock, source from florist  5. Florist doesn’t have required stock, provide alternatives  7. Delivery doesn’t arrive, contact Florist | |

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| **Use Case Name:** | Selection Burial type | |
| **Brief Description:** | Selecting the type of burial and the packages that come with each type | |
| **Actors:** | Manager, Ground staff, Grave digger, Greenhouse Keeper | |
| **Related Use cases:** | Scheduling of graveside services  Check availability of machinery  Prerequisite: Coffin reservation | |
| **Entry condition:** | Burial type requested | |
| **Exit condition:** | Burial type confirmed | |
| **Flow of Events:** | **Actors** | **System** |
|  | 1. Manager enters required Burial type | 1.Returns form of burial type selection |
|  | 2. Manager selects from list of burial types | 2.1 confirms burial type chosen  2.2 send confirmation to ground staff and grave digger |
|  | 3. Ground staff confirms machinery and coffin are prepared and notifies stonemasons of work | 3.1 Send grave request to Grave Digger  3.2 Send monument or plaque requirement to stonemason |
|  | 4. Grave digger marks grave as available in system | 4.1 Notify Manager of grave completion |
|  | 5. Manager marks burial type as available | 5.1 Burial type confirmed |
| **Exception condition:** | 3. Manager enters green burial, Greenhouse Keepers is contacted instead of stonemason | |

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| **Use Case Name:** | Ongoing Lawn Care | |
| **Brief Description:** | Keeping on top of lawn care and general cleaning of the graves | |
| **Actors:** | Ground staff | |
| **Related Use cases:** | Selecting burial type | |
| **Entry condition:** | Schedule reminder | |
| **Exit condition:** | Lawn done | |
| **Flow of Events:** | **Actors** | **System** |
|  | 1.Ground staff receive schedule reminder to mow lawns (weekly) and clean the grave sites | 1.1 Popup message maintenance task required at login to system |
|  | 2. Ground staff label message as viewed | 2.1 System labels jobs that need to be done |
|  | 3.Ground staff select which job to start | 3.1 mark job as in progress |
|  | 4.Ground staff mark job as complete | 3.1 confirms completion and notifies of next maintenance date |
|  | 5. Repeat 2-4 until all maintenance tasks are complete | 4.1 marks all jobs as complete and send message notifying manager |
| **Exception condition:** | 3. If job doesn’t need doing or raining, defer job in system to remind ground staff | |

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| **Use Case Name:** | Cremation | |
| **Brief Description:** | Book Cremation service and either bury the urn, scatter the ashes or provide ashes in urn to the family | |
| **Actors:** | Ground staff, Grave digger, Crematorium staff, Chapel staff | |
| **Related Use cases:** | Scheduling of graveside services  Reservation of chapel  Reservation of the urn  Ordering of flowers  Check availability of machinery | |
| **Entry condition:** | Booking of Crematorium | |
| **Exit condition:** | Remains handed over | |
| **Flow of Events:** | **Actors** | **System** |
|  | 1.Manager enters desired dates of cremation | 1.1 Returns if dates are available for crematorium use |
|  | 2. Manager confirms dates of Cremation | 2.1 returns dates of booking |
|  | 3. Crematorium staff mark collection urn from inventory and preparation | 3.1 Send notification to manager  3.2 Manager notifies chapel staff that Crematorium is and urn are prepared and Grave digger (if burying urn) |
|  | 4. Crematorium staff mark ashes as ready to be collected | 4.1 Notify manager and ground staff of remains ready to be collected |
|  | 5. Manager notifies family that ashes are ready | 5.1 Request ground staff to collect ashes from crematorium |
|  | 6. Manager inputs that ashes have been collected | 6.1 marks remains as collected |
| **Exception condition:** | 5. If ashes are being buried forward to ground staff to commence the scheduling of graveside services | |

**3. Activity Diagrams**

**4. Classes and Domain Class Diagram**