# Problem Identification & Requirements Analysis

## Case: Pirata Morgan

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| Client | Morgan |
| Users | Clients and users |
| Functional requirements | RF0 – Client Registration  RF1 – Cargo Registration  RF2 – Verify Sailing Rules  RF3 – Cargo Unloading  RF4 – Display Cargo Weight  RF5 – Display Sailing Approbation  RF6 – Update Client Rank |
| Situation | Morgan needs a program that allows him to manage his ship company, which provides its services to five big companies in the region. They are charged for weight (kilos) and type of cargo. These are some specifications important for the program:   1. Each trip may contain cargo from every client or some clients (supposedly every crate weighs the same). These are the types of cargo and its prices-per-kilo: Peligrosa, 390.000 pesos; Perecedera, 250.000 pesos; y No Perecedera. 80.000 pesos. 2. These are sailing rules that must be complied with before loading the ship: There cannot be cargo of type PERECEDERA and cargo of type PELIGROSA in the same trip. Also, the total cargo weight in the ship must not exceed 28.000 kilos. 3. If it is not possible to carry the whole cargo of a client, that cargo will not be partially loaded. 4. The ship can only sail **if** it is carrying 2 or more cargo crates, **or** the total cargo weighs at least 12.000 kilos. 5. To update a client’s rank:  * Starting level is normal. * Plata: minimum shipped 35.000 kilos, * Oro: minimum shipped 55.000 kilos **or** 2.000.000 pesos in shipping. * Platinum: $5.000.000 pesos in shipping.  1. Morgan gifts a surprise discount to his clients depending on their rank:  * Plata: 1,5% (PERECEDERA) * Oro: 3% (PERECEDERA y NO PERECEDERA) * Platinum: 5% (Any type of cargo) |
| Non-Functional Requirements | NA |

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| **Name & ID** | ***RF0 - Client Registration*** | | | |
| **Synopsys** | *There are 5 clients and all of them must be saved with their characteristics in the database, these are name, registration number, expedition date, rank: Normal, Plata, Oro, Platinum; shipped weight and shipped value.* | | | |
| **Input** | **Input Name** | **Data Type** | | **Valid Data** |
| name | string | | *No special characters or numbers* |
| registrationNumber | string | | *NA* |
| registrationDate | date | | *[dd-mm-yyyy]* |
| rank | string | | *Each client starts as Normal, but it is possible to register them as Plata, Oro, Platinum.* |
| shippedWeight | double | | *0 ≤ value* |
| totalValue | double | | 0 ≤ value |
| **Result** | Client is now registered in the database. | | | |
| **Output** | **Output Name** | | **Data Type** | **Format** |
| message | | string | Message confirming registration |
| message | | string | Message stating the client could not be registered. |

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| Name & ID | *RF1 - Cargo Registration* | | | |
| Synopsys | *The cargo of each customer must be registered with their characteristics in the database, these are name, weight, cargoType, price and owner.* | | | |
| Input | **Input Name** | **Data Type** | | **Valid Data** |
| name | string | | *No special characters or numbers* |
| weight | double | | 0 ≤ value |
| cargoType | string | | ***PELIGROSA*** *-* ***PERECEDERA*** *-* ***NO PERECEDERA*** |
| price | double | | *0 ≤ value* |
| owner | Client | | *A registered client* |
| Result | Cargo is now registered in the database. | | | |
| Output | **Output Name** | | **Data Type** | **Valid Data** |
| message | | string | Message confirming registration. |
| message | | String | Message stating the client was not registered. |

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| Name & ID | *RF2 - Verify Sailing Rules* | | | |
| Synopsys | *The program must comply with the following conditions: PERECEDERA and PELIGROSA cargo cannot be transported in the same trip. Neither more than 28,000 kilos can be transported per trip.* | | | |
| Input | **Input Name** | **Data Type** | | **Valid Data** |
| NA | NA | | *NA* |
| Result | A message must be given to ensure that these conditions were met. | | | |
| Output | **Output Name** | | **Data Type** | **Valid Data** |
| message | | string | Message confirming registration. |
| message | | String | Message stating the client was not registered. |

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| Name & ID | *RF3 - Cargo Unloading* | | | |
| Synopsys | *After the voyage, the ship must be unloaded* | | | |
| Input | **Input Name** | **Data Type** | | **Valid Data** |
|  |  | |  |
| Result | A message should appear indicating whether the boat has been unloaded. | | | |
| Output | **Output Name** | | **Data Type** | **Valid Data** |
| message | | string | Message confirming registration. |
| message | | string | Message stating the client was not registered. |

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| Name & ID | *RF4 – Display Cargo Weight* | | | |
| Synopsys | *The program must inform the user the total weight that the ship will carry, there are no inputs because the system with the other requirements already has the info.* | | | |
| Input | **Input Name** | **Data Type** | | **Valid Data** |
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| Result | It displays a message with the requested information. | | | |
| Output | **Output Name** | | **Data Type** | **Valid Data** |
| message | | string | weight |

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| Name & ID | *RF5 - Display Sailing Approbation* | | | |
| Synopsys | *the program must inform if it is possible to sail or not, there are no entries because based on the conditions it will be notified.* | | | |
| Input | **Input Name** | **Data Type** | | **Valid Data** |
|  |  | |  |
| Result | An information message should be given | | | |
| Output | **Output Name** | | **Data Type** | **Valid Data** |
| confirmation | | string | Message confirming registration. |
| failure | | String | Message stating the client was not registered. |

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| Name & ID | *RF6 – Update Client Rank* | | | |
| Synopsys | *The program must allow the customer category to be updated, there are no entries as the customer record already contains the information.* | | | |
| Input | **Input Name** | Input | | **Input Name** |
| NA | NA | | *NA* |
| Result | A message will be given where you can see the category where the customer will be. | | | |
| Output  Name & ID | **Output Name** | | Output | **Output Name** |
| message | | string | message |
| *RF6 – Update Client Rank* | | Name & ID | *RF6 – Update Client Rank* |