# Requirements – Student #3

Please, fill in the following form, make sure that you have ticked the requirements that you consider fulfilled, save this document, **and attach it in its original format (.docx)** to every deliverable. Regarding your ID, please keep only four random digits and mask the others using an asterisk. **Please, note that this document must be edited with the desktop version of Word since the web version does not properly support forms.** Attaching this document entails that you are the authors of the work delivered, you have not cheated in any way, and you have read and understood the information delivered regarding the subject, with a special emphasis on the methodological guidelines and how your work is going to be graded. Make sure that your project works well with the latest version of the development framework.

|  |
| --- |
| **Group:** C2.055 |
| **Repository:** https://github.com/DP2-C1-055/Acme-ANS-C2 |
| Student #2  **ID Number:** \*\*\*6563\*\*  **UVUS:**  alvcarber1  **Name:**  Carrera Bernal, Álvaro  **Roles:**  Analista, Desarrollador, Operator |
| **Date:** 17/02/2025 |

# MANDATORY Deliverable D01: introduction

## Information requirements

Intentionally blank.

## Functional requirements

1. Modify the anonymous menu so that it shows an option that takes the browser to the home page of your favourite web site. The title must read as follows: “〈id-number〉: 〈surname〉, 〈name〉”, where “〈id-number〉” denotes your DNI, NIE, or passport number, “〈surname〉” denotes your surname/s, and “〈name〉” denotes your name/s.

X

## Non-functional requirements

Intentionally blank.

## Testing requirements

Intentionally blank.

## Managerial requirements

1. Provide a link to your planning dashboard in GitHub to review the tasks, their current status, and your schedule.

X El enlace proporcionado indica que el dashboard ha sido borrado, por lo que no se puede evaluar:

<https://github.com/orgs/DP2-C1-055/projects/3/views/8>

A screen shot of a computer

AI-generated content may be incorrect.

Corrección realizada:

Se ha procedido a actualizar el enlace correspondiente al tablero del D01.

https://github.com/orgs/DP2-C1-055/projects/3/views/10

# MANDATORY Deliverable D02: data models

## Information requirements

1. The **flight crew members** are the people responsible for operating aircrafts and ensuring passenger safety and comfort during a flight. The system must store the following data about them: an **employee code** (unique, pattern "^[A-Z]{2-3}\d{6}$", where the first two or three letters correspond to their initials), a **phone number** (pattern "^\+?\d{6,15}$"), their **language skills** (up to 255 characters), their **availability status** ("AVAILABLE", "ON VACATION", "ON LEAVE"), the **airline** they are working for, and their **salary**. Optionally, the system may store his or her **years of experience**.

X

1. A **flight assignment** represents the allocation of a **flight crew member** to a specific **leg** of a flight. Each assignment specifies the flight crew's **duty** in that leg ("PILOT", "CO-PILOT", "LEAD ATTENDANT", "CABIN ATTENDANT"), the **moment** of the last update (in the past), the **current status** of the assignment ("CONFIRMED", "PENDING", or "CANCELLED"), and some **remarks** (up to 255 characters), if necessary.

X

1. An **activity log** records incidents that occur during a flight. They are logged by any of the **flight crew members** assigned to the corresponding leg and after the **leg** has taken place. The incidents include weather-related disruptions, route deviations, passenger issues, or mechanical failures, to mention a few. Each log entry includes a **registration** **moment** (in the past), a **type of incident** (up to 50 characters) a **description** (up to 255 characters), and a **severity level** (ranging from 0 to 10, where 0 indicates no issue and 10 represents a highly critical situation).

X

## Functional requirements

Intentionally blank.

## Non-functional requirements

Intentionally blank.

## Testing requirements

1. Produce assorted sample data to test your application informally. The data must include four **flight crew** **member** accounts with credentials “**memberX**/**memberX**” with X ranging from 1 to 4 (and different duties each). Additionally, create a fifth member account **member/member**,representing a new member with no flight assignment, as if the account had just been created.

X No se proporcionan las cuentas solicitadas:

A close up of a text

AI-generated content may be incorrect.

En concreto no hay cuenta “member/member” para poder realizar las pruebas funcionales.

Corrección realizada:

- Se añadieron dos nuevos registros en el archivo de tripulación: crew-04 (asociado a user-account-crew-04 con member4) y crew-05 (asociado a user-account-crew-05 con member/member).

## Managerial requirements

1. Provide a link to your planning dashboard in GitHub to review the tasks, their current status, and your schedule.

X

# MANDATORY Deliverable D03: implementing features

## Information requirements

Intentionally blank.

## Functional requirements

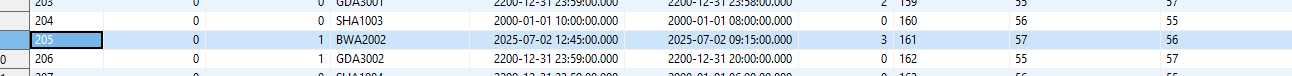
1. Operations by **flight crew members** on **flight assignments**:

* List the flight assignments separately, one for completed flight legs and another one for those planned but that have not taken place yet.
* Show the details of their flight assignments and the associated legs and flight crew members.
* Create, update, and publish their flight assignments. Only crew members with duty “LEAD ATTENDANT” can perform these operations. Please, note that to publish a flight assignment these cannot be linked to legs that have already occurred. Additionally, only flight crew members with an "AVAILABLE" status can be assigned to a leg, and they cannot be assigned to multiple legs simultaneously. Lastly, each leg can only have one pilot and one co-pilot. The allocation of remaining roles for other flight crew members is at the discretion of the “LEAD ATTENDANT”. Flight assignments can be updated or deleted as long as they have not been published.

X No es posible usar el usuario “member/member” para realizar las pruebas.

Es necesario crear una nueva cuenta para repopular y poder probar este requisito. Se recuerda al estudiante que las normas de evaluación indican que se para en el primer requisito no satisfecho. Por lo que no correspondería evaluar este requisito.

Busco en la BD un leg que esté en modo borrador:



Tomo el 205. Ahora hackeo el formulario para crear un assignment indicando este leg que no está aún publicado y el resultado es el siguiente:

A screenshot of a computer

AI-generated content may be incorrect.

Observese que no se ha desautorizado el intento de hackeo.

Corrección realizada:  
Se corrigió el servicio de creación de asignaciones para asegurar que:

- No se puedan crear asignaciones vinculadas a legs que ya estén publicados o que hayan ocurrido, evitando así posibles manipulaciones indebidas.

- Se valide que un miembro de tripulación no tenga asignaciones que se solapen en tiempo, garantizando que no esté asignado a múltiples legs simultáneamente.

- No se dupliquen roles de piloto o copiloto en un mismo leg, respetando las reglas de asignación de roles.

- Se fortaleció la lógica de autorización y validación para impedir operaciones no autorizadas o inconsistentes.

Además, se revisó los demás servicios para reforzar la lógica de autorización. Se decidió, a partir de este hilo en el foro [1], suprimir los dos listados de asignaciones, dejando solo una lista y añadiendo un atributo que nos indique el estado de la asignacion (PENDING/DONE), para poder crear registros de actividad o no, según el estado.

En el servicio de publish y update se realizaron los siguientes cambios:  
Validación de que la Leg esté publicada: Ahora se verifica que la ruta (Leg) no esté en modo borrador antes de permitir publicar la asignación.

Validación de valores de duty y currentStatus: Se añadieron comprobaciones para asegurarse de que los valores recibidos en la petición son válidos y corresponden a los enums definidos.

Refactorización de la validación de incompatibilidad de Legs: Se dividió la lógica en métodos separados para mejorar claridad y evitar conflictos de horarios entre asignaciones.

Control de asignación de piloto y copiloto: Se valida que no haya más de un piloto o copiloto asignado a la misma ruta.

Bloqueo de modificaciones en rutas ya completadas: No se permiten cambios en asignaciones si la ruta ya está completada.

Con respecto al servicio de listar, temenos lo siguiente:  
Se unificó en un solo servicio: CrewAssignmentListLegsService.

Se carga todas las asignaciones de la tripulación sin filtrar en la consulta.

La distinción entre completadas o planificadas se hace al vuelo, en el método unbind, comparando la fecha de llegada con el momento actual.

Se añade un campo "assignmentStatus" con valores "DONE" o "PENDING" según corresponda.

También, en el servicio de mostrar los detalles (Show), se añadió la opcion de poder ver el Código de los miembros de tripulación (crew members).

[1]: <https://ev.us.es/webapps/discussionboard/do/message?action=list_messages&course_id=_89154_1&nav=discussion_board&conf_id=_426211_1&forum_id=_253522_1&message_id=_473102_1>

1. Operations by **flight crew members** on **activity log records**:

* List the activity log records in their flight assignments.
* Show the details of their activity log records.
* Create, update, delete and publish activity log records. They cannot be published if their corresponding flight assignments have not been published yet. No updating or deletion is possible once an activity log record has been published.

X Creo una asignación y la publico sin activity logs. Ahora no puedo añadir ninguno:

A white and grey striped background

AI-generated content may be incorrect.

Corrección realizada:  
Se añadió la verificación explícita de que la asignación esté completada (isCompletedAssignment), pero se sigue requiriendo que la asignación esté en modo borrador (isDraftMode) para permitir crear registros. El servicio nuevo refuerza la lógica para que solo se creen logs después de completado el vuelo y mientras la asignación está en borrador.

Así, solo se pueden añadir activity logs mientras la asignación sigue en modo borrador y después de que el vuelo haya ocurrido (esté completado). Esto evita inconsistencias y respeta la regla de que no se puedan modificar o añadir activity logs a asignaciones ya publicadas.

Esto implica que si la asignación ya fue publicada (modo borrador = false), no se pueden añadir activity logs, lo que coincide con el comportamiento esperado y las reglas del negocio. El inconveniente detectado era que antes se permitía añadir logs aunque el vuelo no estuviera completado, y ahora se limita correctamente.  
  
Además, se ha reforzado tanto el servicio de publish como el de update en cuanto a:  
Se asegura que sólo la acción POST pueda publicar, mejor control de flujo y seguridad.

Control de versión mediante registrationMoment: Evita publicar si los datos han cambiado en el servidor desde que el cliente los cargó, previniendo inconsistencias o sobreescrituras no deseadas.

Validación explícita que la asignación esté publicada antes de permitir publicar el activity log: Impide publicar logs si la asignación no está publicada (requisito clave).

Validación que la fecha del log esté después de la llegada programada: Cumple requisito de que logs sólo se puedan publicar tras completar la misión.

No permite publicar logs que ya fueron publicados o modificados incorrectamente: Mantiene integridad de los registros.

## Non-functional requirements

Intentionally blank.

## Testing requirements

Intentionally blank.

## Managerial requirements

1. Provide a link to your planning dashboard in GitHub to review the tasks, their current status, and your schedule.

X

# MANDATORY Deliverable D04: formal testing

## Information requirements

1. Create appropriate indices for your entities, if required.

X No se han definido los índices requeridos por algunas consultas:

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AI-generated content may be incorrect.

A black and red text

AI-generated content may be incorrect.

A screenshot of a computer code

AI-generated content may be incorrect.

A screenshot of a computer code

AI-generated content may be incorrect.

El estudiante podrá localizar fácilmente todos los que faltan.  
  
Corrección realizada:  
Se han añadido los índices faltantes en las entidades correspondientes.

## Functional requirements

Intentionally blank.

## Non-functional requirements

Intentionally blank.

## Testing requirements

1. Produce a test suite for Requirements #8 and #9.

X

## Managerial requirements

1. Provide a link to your planning dashboard in GitHub to review the tasks, their current status, and your schedule.

X

1. Produce a testing report.

X El informe concluye lo siguiente:

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AI-generated content may be incorrect.

Sse entiende que “P” hace referencia al p-value obtenido por el test, pero dicho p-value no es 0.9802, por lo que la conclusión es incorrecta.  
  
Corrección realizada:  
- Se han vuelto a grabar los tests correspondientes a las features requeridas. Como bien se menciona en el documento de Testing Report, se ha obtenido un problema con el framework a la hora de ejecutar el tester#replayer y no se ve reflejado correctamente el coverage. En un primer momento se pensó que era problema del test creado, pero al repetirlo en varias ocasiones e importar de nuevo el Acme-Framework, se ha declinado la opción de que fuera problema del test y, en efecto, problema del framework. Aun así, se ha obtenido bastante porcentaje de cobertura en los tests, asegurando que si se ejecutan individualmente, se obtiene al menos un 97% en ambas features.

# SUPPLEMENTARY I Deliverable D01: introduction

## Information requirements

Intentionally blank.

## Functional requirements

Intentionally blank.

## Non-functional requirements

Intentionally blank.

## Testing requirements

Intentionally blank.

## Managerial requirements

Intentionally blank.

# SUPPLEMENTARY I Deliverable D02: data models

## Information requirements

1. The system must handle **flight crew member** **dashboards** with the following **indicators**:

* The last five destinations to which they have been assigned.
* The number of legs that have an activity log record with an incident severity ranging from 0 up to 3, 4 up to 7, and 8 up to 10.
* The crew members who were assigned with him or her in their last leg.
* Their flight assignments grouped by their statuses.
* The average, minimum, maximum, and standard deviation of the number of flight assignments they had in the last month.

## Functional requirements

Intentionally blank.

## Non-functional requirements

Intentionally blank.

## Testing requirements

Intentionally blank.

## Managerial requirements

1. Produce a UML domain model regarding the information requirements in your project.

# SUPPLEMENTARY I Deliverable D03: implementing features

## Information requirements

Intentionally blank.

## Functional requirements

1. Operations by **anonymous principals** on user **accounts**:

* Sign up to the system and become a flight crew member.

1. Operations by **flight crew members** on **user accounts**:

* Update their profiles.

1. Operations by **any principals** on **flight assignments**:

* List the flight assignments that are published.
* Show the details of the flight assignments (excluding their activity logs).

1. Operations by **flight crew member** on **dashboards**:

* Show their flight crew member dashboards.

## Non-functional requirements

Intentionally blank.

## Testing requirements

Intentionally blank.

## Managerial requirements

1. Provide a link to a video in which you informally test requirement #8 and #9. Videos should not exceed 10 minutes in length and must be stored at the USE's facilities.

# SUPPLEMENTARY I Deliverable D04: formal testing

## Information requirements

Intentionally blank.

## Functional requirements

Intentionally blank.

## Non-functional requirements

Intentionally blank.

## Testing requirements

1. Perform five mutations in your code and report on the results.

## Managerial requirements

1. Produce a lint report.

# SUPPLEMENTARY II Deliverable D01: introduction

## Information requirements

Intentionally blank.

## Functional requirements

Intentionally blank.

## Non-functional requirements

Intentionally blank.

## Testing requirements

Intentionally blank.

## Managerial requirements

1. Produce an analysis report.

X

1. Produce a planning and progress report.

X

# SUPPLEMENTARY II Deliverable D02: data models

## Information requirements

1. The system is required to provide crew members with information about **visa requirements**. A web service must be used to populate this entity with information about visa requirements. Thus, the exact data to store depends on the chosen service, and it is the students' responsibility to define them accordingly. It is also the students’ responsibility to find the appropriate service; no implicit or explicit liabilities shall be covered by the University of Seville or their individual affiliates if the students hire pay-per-use services! The students are strongly advised to ensure that the service they choose is free of charge.

## Functional requirements

Intentionally blank.

## Non-functional requirements

Intentionally blank.

## Testing requirements

Intentionally blank.

## Managerial requirements

1. Produce an analysis report.

1. Produce a planning and progress report.

# SUPPLEMENTARY II Deliverable D03: implementing features

## Information requirements

Intentionally blank.

## Functional requirements

1. Operations by **flight crew members** on **visa requirements**:

* List visa requirements according to the destination countries of their flight assignments.
* Show the details of the visa requirements they can list.

1. Operations by **administrators** on **visa requirements**:

* Populate the database with visa requirements data.

## Non-functional requirements

Intentionally blank.

## Testing requirements

Intentionally blank.

## Managerial requirements

1. Produce an analysis report.

1. Produce a planning and progress report.

# SUPPLEMENTARY II Deliverable D04: formal testing

## Information requirements

Intentionally blank.

## Functional requirements

Intentionally blank.

## Non-functional requirements

Intentionally blank.

## Testing requirements

1. Produce as a complete test suite as possible for Requirement #29 ensuring that the web service is properly mocked.

## Managerial requirements

1. Produce an analysis report.

1. Produce a planning and progress report.