



**UNIVERSIDAD DE LAS FUERZAS  
ARMADAS – “ESPE”**

**CLASS NAME: OBJECT ORIENTED PROGRAMMING**

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**NRC: 14575**

**HOMEWORK #3**

**TOPIC: PROJECT DEFINITION**

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## Group: "NullPointerException"

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### Problem

A system is required that allows tracking electoral packages sent from Ecuador to citizens residing abroad. This system will help us by knowing if the packages have already been sent from "Montgar" to the different constituencies and from the constituencies to the CNE matrix once the process is finished. The division of the packages should be taken into account: "cne", "mixto" and "género". Likewise, it is necessary to identify which packages arrive at the matrix, and if they bring the important information to continue with their storage, or a possible counting.

It is important to understand that Ecuadorians abroad need to exercise their right to vote as well due to the considerable Ecuadorian population abroad.

### Overview

The foreign elections were carried out telematically in the past, which meant that any Ecuadorian who was eligible to vote could do so from any smart device.

However, since the last voting (October 15, second round), they opted for face-to-face mode, due to the failure of the systems that day. That is why the CNE distributed around 586 electoral packages abroad.

These electoral packages consist of ballot boxes, screens and various electoral documents, due to the long distances over which these packages are transported, the Ecuadorian Armed Forces guarantee their transportation to the shipping company DHL, who will be in charge of sending the packages to the different constituencies registered in the CNE.

### Background

The National Electoral Council (CNE) has the Department of Processes Abroad (DPEX) as a means of guaranteeing the right to vote of citizens who for some reason have migrated to different countries.

The external voting process is handled differently from the national voting process.

The DPEX is divided into 3 voting constituencies, starting from the biggest to the smallest:

1. Europe, Asia and Oceania.
2. United States and Canada.
3. Latin America, El Caribe and Africa.

Within each of these districts, countries and cities with Ecuadorian populations are registered, based on the information provided by the Ecuadorian consular offices, there are currently 101 consular offices that register Ecuadorian citizens. Its division is given, for example:

1. Constituency: Europe, Asia and Oceania
2. Country: Spain
3. Consular office: Barcelona

In this way, the Electoral Kits are generated, these are packages which have the following:

- Screen and urn
- Electoral register.
- Voting Certificates
- Ballot papers
- Generic materials.
- Minutes of opening, installation and scrutiny.
- Envelopes “P1”, “P2”, “T1”.

In the same way, a laptop and a scanner are attached, useful for accessing the CNE system and uploading data necessary for the initial count of the votes, these are separated from these packages.

It should be noted that not all places have a large concentration of Ecuadorians, so they are divided as follows:

- "cne": The "cne" collects places that register between 1 to 100 people, these electoral packages are sent to the consular offices which will be the polling place, among these sites we have Canberra, Australia; Tel Aviv, Israel. There is only one electoral package in this one
- "Mixto": The "Mixto" collect between 101 and 889 people, where the consuls determine a place to vote. Among these places we find: Buenos Aires, Argentina; New York—Hudson Valley; United States.
- "Gender": Places that register 890 people or more are collected, in this way the votes are made in places of large concentrations, where they are divided into male and female boards, in this way they receive more packages compared to the other divisions. These sites include Madrid, Spain; Milan, Italy.

The packages are sent two weeks before the day of the elections to be attentive to any news presented, and the company DHL oversees transporting them. At the end of the electoral period, these packages must be returned to the CNE headquarters (Av. 6 de diciembre and Bosmediano), where each of the elements previously sent are received, except for the screen, primarily requiring the T1 envelope.

The T1 envelope is the one that receives the document "Minutes of Scrutiny", where all the votes during the count are evidenced, and the information uploaded to the CNE system is confirmed. If, in any case, we need to do a recount, a series of acts are carried out to be able to count the votes of the package that arrived.

Election packages need to be identified by an ID, necessary to identify whether the package was created or not. In addition to having the district, country, consular office, package division and a number that indicates all the packages sent to that place.

### **System description:**

To address this problem, we propose the development and implementation of a system that will register, track, and safeguard these crucial components of the democratic process.

The proposed system will involve the following components:

#### **1. Registration and Information Management:**

- We will establish a centralized database that stores information about Ecuadorians living abroad, consular offices, and voting constituencies. This database will be regularly updated.
- Each registered Ecuadorian will be assigned a unique identification number linked to their district, country, consular office, and package division.
- 2. **Kits Preparation:**
  - The system will generate Electoral Kits. These kits will be customized based on the specific requirements of each consular office.
- 3. **Package Division:**
  - We will categorize consular offices into three divisions: "CNE," "Mixto," and "Gender," depending on the number of registered Ecuadorians in each location.
- 4. **Shipment and Tracking:**
  - Electoral packages will be dispatched to consular offices two weeks before the election day, with DHL overseeing the transportation.
  - Each package will be assigned a unique ID, which will help to track its movement from the CNE headquarters to the consular office and back.
- 5. **Secure Handling:**
  - At consular offices, strict security measures will be in place to safeguard the electoral packages, such as secure storage and restricted access.
  - Upon completion of the election period, the packages will be returned to the CNE headquarters, with a particular focus on preserving the T1 envelope containing the "Minutes of Scrutiny."
- 6. **Data Verification:**
  - The T1 envelope will be carefully examined and verified upon its return to the CNE headquarters.
  - In case of any disputes or the need for a recount, transparent procedures will be followed.
- 7. **Technology:**
  - The system will have a user-friendly interface to assist consular offices in upload
  - ding essential data.
- 8. **Communication:**
  - Continuous communication will be maintained with consular offices to address any issues or updates related to electoral packages.

Link: [Workshop](#)

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