

Cerberus

*Gestión de esquemas de seguridad en batallones colombianos

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Abstract—This document presents the design and development process of a web application built in Django's framework based in Python's programming language. This application is focus on devise, propose, and build security schemas in Colombian's battalions like National Army and National Navy, allowing to top brass, assign strategic positions and guarantee the protection of the enclosure.

Index Terms—shcemas, battalions, security, strategic, development

I. INTRODUCCIÓN

El proyecto es un sistema de información basado en la esquematización de un batallón en Colombia, teniendo en cuenta puntos críticos del establecimiento donde pueden prestar el servicio correspondiente, haciendo uso del framework Django, lenguaje de programación Python, base de datos, y uso del framework frontend Tailwind, también requiriendo del polimorfismo, herencia encapsulamiento y otras propiedades de la programación orientada a objetos, cada una de las actividades y tareas correspondientes a la seguridad del lugar estarán siendo monitoreadas por los altos mandos del sitio, teniendo un mayor optimización de recursos así como una forma mas extendida de las operaciones de la base militarizada.

II. PLANTEAMIENTO DEL PROBLEMA

A. Descripción del problema

La seguridad es una temática de vital importancia en los múltiples batallones de Ejército y Armada Nacional distribuidos en puntos estratégicos dentro del territorio Colombiano, ya que con el paso del tiempo, los grupos al margen de la ley han realizado múltiples esfuerzos por vulnerar mediante hostigamientos, atentados y enfrentamientos, los esquemas de protección establecidos por parte de los altos mandos de estas instituciones. Lo anterior afecta de manera directa e indirecta a la población aledaña a los batallones que sufren estos ataques, provocando pérdidas económicas a los comerciantes y empresas, balas perdidas, daños a infraestructuras, además de otros inconvenientes.

Por tal motivo, en el presente documento se tiene la intención de mostrar el desarrollo de un sistema de información que sirva como apoyo para la toma de decisiones dentro de los

diferentes batallones comprendidos en las fuerzas militares, el cual, permita el planteamiento de modelos de seguridad sólidos en base a estadísticas tomadas y procesadas por un algoritmo de inteligencia y visión artificial que reciba como entrada, fotografías de los objetivos usados en prácticas de polígono realizadas por parte de los militares, facilitando de esta manera, la elección del personal en relación a sus aptitudes y un respectivo seguimiento individual y grupal del progreso del batallón.

III. JUSTIFICACIÓN

La Importancia de este proyecto está en la correcta utilización del plantel en el que se encuentre para generar una facilidad a la hora de tomar decisiones mediante un modelo que replique las funciones de los servicios que allí se desarrollan semanalmente, también la existencia de las virtudes y habilidades mediante la muestra de las estadísticas que tienen los diferentes uniformados en la prueba de tiro en el polígono, el medio de la información se justifica por que se pueden administrar de una mejor forma gracias a la interfaz que muestra los datos.

IV. DESARROLLO INGENIERIA

A. Requerimientos

1) Requerimientos funcionales:

- Inicio de sesión con niveles de acceso y token de seguridad.
- Encriptación de información y credenciales de los usuarios.
- Recuperación de clave de acceso y token de seguridad.
- Registro de personal militar en función al batallón que pertenezcan.
- Registro de visitantes.
- Lectura, almacenamiento y visualización de planos.
- Planteamiento de esquemas de seguridad con base a los planos ingresados.
- Asignación de posición en el modelo de seguridad a los militares.
- Asignación de armamento a los uniformados que pertenezcan al esquema de protección, identificando el serial de estas.
- Toma del tiempo de guardia individual.

Identify applicable funding agency here. If none, delete this.

- Consultar esquemas previamente planteados.
- Almacenamiento de esquemas de seguridad previamente realizados.
- Identificar disparos atinados a los objetivos del polígono.
- Análisis estadístico individual de la práctica de polígono realizada.
- Análisis estadístico general de la práctica de polígono realizada.
- Visualización de estadísticas en función a los polígonos realizados por el uniformado.

2) Requerimientos no funcionales:

- Almacenamiento de los archivos en la nube.
- Atomicidad al consultar datos.
- Base de datos ORM (Object Relational Mapping)
- Implementación de TailwindCSS (Framework de FrontEnd)
- Implementación de Django (Framework de BackEnd)
- Implementación de OpenCV
- Implementación de SQLite3

3) Requerimientos de facilidad de uso:

- Interfaz sencilla y amigable con el usuario.
- Paleta de colores que posean un excelente contraste.
- Diseño responsive.
- Sugerencias al usuario sobre el uso del sistema.

B. Modelado

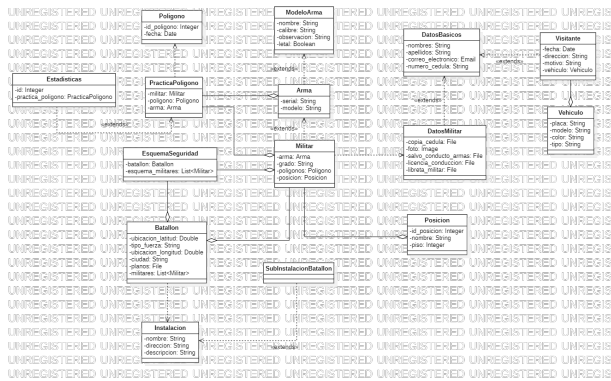


Fig. 1. Diagrama de clases.

1) Diagrama de clases:

V. PREPARE YOUR PAPER BEFORE STYLING

Before you begin to format your paper, first write and save the content as a separate text file. Complete all content and organizational editing before formatting. Please note sections V-A–V-E below for more information on proofreading, spelling and grammar.

Keep your text and graphic files separate until after the text has been formatted and styled. Do not number text heads— \LaTeX will do that for you.

A. Abbreviations and Acronyms

Define abbreviations and acronyms the first time they are used in the text, even after they have been defined in the abstract. Abbreviations such as IEEE, SI, MKS, CGS, ac, dc, and rms do not have to be defined. Do not use abbreviations in the title or heads unless they are unavoidable.

B. Units

- Use either SI (MKS) or CGS as primary units. (SI units are encouraged.) English units may be used as secondary units (in parentheses). An exception would be the use of English units as identifiers in trade, such as “3.5-inch disk drive”.
- Avoid combining SI and CGS units, such as current in amperes and magnetic field in oersteds. This often leads to confusion because equations do not balance dimensionally. If you must use mixed units, clearly state the units for each quantity that you use in an equation.
- Do not mix complete spellings and abbreviations of units: “Wb/m²” or “webers per square meter”, not “webers/m²”. Spell out units when they appear in text: “. . . a few henries”, not “. . . a few H”.
- Use a zero before decimal points: “0.25”, not “.25”. Use “cm³”, not “cc”).

C. Equations

Number equations consecutively. To make your equations more compact, you may use the solidus (/), the exp function, or appropriate exponents. Italicize Roman symbols for quantities and variables, but not Greek symbols. Use a long dash rather than a hyphen for a minus sign. Punctuate equations with commas or periods when they are part of a sentence, as in:

$$a + b = \gamma \quad (1)$$

Be sure that the symbols in your equation have been defined before or immediately following the equation. Use “(1)”, not “Eq. (1)” or “equation (1)”, except at the beginning of a sentence: “Equation (1) is . . .”

D. \LaTeX -Specific Advice

Please use “soft” (e.g., $\text{\textbackslash eqref{Eq}}$) cross references instead of “hard” references (e.g., (1)). That will make it possible to combine sections, add equations, or change the order of figures or citations without having to go through the file line by line.

Please don’t use the $\text{\textbackslash eqnarray}$ equation environment. Use $\text{\textbackslash align}$ or $\text{\textbackslash IEEEeqnarray}$ instead. The $\text{\textbackslash eqnarray}$ environment leaves unsightly spaces around relation symbols.

Please note that the $\text{\textbackslash subequations}$ environment in \LaTeX will increment the main equation counter even when there are no equation numbers displayed. If you forget that, you might write an article in which the equation numbers skip from (17) to (20), causing the copy editors to wonder if you’ve discovered a new method of counting.

BIBTEX does not work by magic. It doesn't get the bibliographic data from thin air but from .bib files. If you use BIBTEX to produce a bibliography you must send the .bib files.

L^AT_EX can't read your mind. If you assign the same label to a subsection and a table, you might find that Table I has been cross referenced as Table IV-B3.

L^AT_EX does not have precognitive abilities. If you put a \label command before the command that updates the counter it's supposed to be using, the label will pick up the last counter to be cross referenced instead. In particular, a \label command should not go before the caption of a figure or a table.

Do not use \nonumber inside the {array} environment. It will not stop equation numbers inside {array} (there won't be any anyway) and it might stop a wanted equation number in the surrounding equation.

E. Some Common Mistakes

- The word "data" is plural, not singular.
- The subscript for the permeability of vacuum μ_0 , and other common scientific constants, is zero with subscript formatting, not a lowercase letter "o".
- In American English, commas, semicolons, periods, question and exclamation marks are located within quotation marks only when a complete thought or name is cited, such as a title or full quotation. When quotation marks are used, instead of a bold or italic typeface, to highlight a word or phrase, punctuation should appear outside of the quotation marks. A parenthetical phrase or statement at the end of a sentence is punctuated outside of the closing parenthesis (like this). (A parenthetical sentence is punctuated within the parentheses.)
- A graph within a graph is an "inset", not an "insert". The word alternatively is preferred to the word "alternately" (unless you really mean something that alternates).
- Do not use the word "essentially" to mean "approximately" or "effectively".
- In your paper title, if the words "that uses" can accurately replace the word "using", capitalize the "u"; if not, keep using lower-cased.
- Be aware of the different meanings of the homophones "affect" and "effect", "complement" and "compliment", "discreet" and "discrete", "principal" and "principle".
- Do not confuse "imply" and "infer".
- The prefix "non" is not a word; it should be joined to the word it modifies, usually without a hyphen.
- There is no period after the "et" in the Latin abbreviation "et al."
- The abbreviation "i.e." means "that is", and the abbreviation "e.g." means "for example".

An excellent style manual for science writers is [7].

F. Authors and Affiliations

The class file is designed for, but not limited to, six authors. A minimum of one author is required for all conference articles. Author names should be listed starting from left

to right and then moving down to the next line. This is the author sequence that will be used in future citations and by indexing services. Names should not be listed in columns nor group by affiliation. Please keep your affiliations as succinct as possible (for example, do not differentiate among departments of the same organization).

G. Identify the Headings

Headings, or heads, are organizational devices that guide the reader through your paper. There are two types: component heads and text heads.

Component heads identify the different components of your paper and are not topically subordinate to each other. Examples include Acknowledgments and References and, for these, the correct style to use is "Heading 5". Use "figure caption" for your Figure captions, and "table head" for your table title. Run-in heads, such as "Abstract", will require you to apply a style (in this case, italic) in addition to the style provided by the drop down menu to differentiate the head from the text.

Text heads organize the topics on a relational, hierarchical basis. For example, the paper title is the primary text head because all subsequent material relates and elaborates on this one topic. If there are two or more sub-topics, the next level head (uppercase Roman numerals) should be used and, conversely, if there are not at least two sub-topics, then no subheads should be introduced.

H. Figures and Tables

a) *Positioning Figures and Tables:* Place figures and tables at the top and bottom of columns. Avoid placing them in the middle of columns. Large figures and tables may span across both columns. Figure captions should be below the figures; table heads should appear above the tables. Insert figures and tables after they are cited in the text. Use the abbreviation "Fig. 2", even at the beginning of a sentence.

TABLE I
TABLE TYPE STYLES

Table Head	Table Column Head		
	Table column subhead	Subhead	Subhead
copy	More table copy ^a		

^aSample of a Table footnote.



Fig. 2. Example of a figure caption.

Figure Labels: Use 8 point Times New Roman for Figure labels. Use words rather than symbols or abbreviations when writing Figure axis labels to avoid confusing the reader. As an

example, write the quantity “Magnetization”, or “Magnetization, M”, not just “M”. If including units in the label, present them within parentheses. Do not label axes only with units. In the example, write “Magnetization (A/m)” or “Magnetization {A[m(1)]}”, not just “A/m”. Do not label axes with a ratio of quantities and units. For example, write “Temperature (K)”, not “Temperature/K”.

ACKNOWLEDGMENT

The preferred spelling of the word “acknowledgment” in America is without an “e” after the “g”. Avoid the stilted expression “one of us (R. B. G.) thanks ...”. Instead, try “R. B. G. thanks...”. Put sponsor acknowledgments in the unnumbered footnote on the first page.

REFERENCES

Please number citations consecutively within brackets [1]. The sentence punctuation follows the bracket [2]. Refer simply to the reference number, as in [3]—do not use “Ref. [3]” or “reference [3]” except at the beginning of a sentence: “Reference [3] was the first ...”

Number footnotes separately in superscripts. Place the actual footnote at the bottom of the column in which it was cited. Do not put footnotes in the abstract or reference list. Use letters for table footnotes.

Unless there are six authors or more give all authors’ names; do not use “et al.”. Papers that have not been published, even if they have been submitted for publication, should be cited as “unpublished” [4]. Papers that have been accepted for publication should be cited as “in press” [5]. Capitalize only the first word in a paper title, except for proper nouns and element symbols.

For papers published in translation journals, please give the English citation first, followed by the original foreign-language citation [6].

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