



UNIVERSITY
OF MISCO JONES



**MASTER'S DEGREE IN
TYPESETTING ENGINEERING**

Master's Thesis

**“Alcázar: a free and open source template for
academic papers, for nerdy kids who do
boring stuff like theses with endless titles.”**

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KEYWORDS:

Keyword 1, Keyword 2, Keyword 3, Keyword 4, Keyword 4, Keyword 5, Keyword 6, Keyword 7, Keyword 8, Keyword 9, Keyword 10, Keyword N

ABSTRACT:

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EXECUTIVE OVERVIEW

RESUMEN EJECUTIVO

The present Master's Thesis report titled "*Alcázar: a free and open source template for academic papers, for nerdy kids who do boring stuff like theses with endless titles.*" develops in the text the following concepts, which are duly justified and discussed, focusing on the field of Typesetting Engineering:

La presente memoria del Master's Thesis titulado "*Alcázar: a free and open source template for academic papers, for nerdy kids who do boring stuff like theses with endless titles.*" desarrolla en el texto los siguientes conceptos, debidamente justificados y discutidos, centrados en el ámbito de la Typesetting Engineering:

Concept (ABET)	Concepto (traducción)	Complies? (Y/N)	Where? (sections)
1. Identify:	1. Identificar:		
1.1. Problem statement and opportunity	1.1. Planteamiento del problema y oportunidad	Yes	
1.2. Constraints (standards, codes, needs, requirements & specifications)	1.2. Toma en consideración de los condicionantes (normas técnicas y regulación, necesidades, requisitos y especificaciones)	Yes	
1.3. Setting of goals	1.3. Establecimiento de objetivos	Yes	
2. Formulate:	2. Formular:		
2.1. Creative solution generation (analysis)	2.1. Generación de soluciones creativas (análisis)	Yes	
2.2. Evaluation of multiple solutions and decision-making (synthesis)	2.2. Evaluación de múltiples soluciones y toma de decisiones (síntesis)	Yes	
3. Solve:	3. Resolver:		
3.1. Fulfilment of goals	3.1. Evaluación del cumplimiento de objetivos	Yes	
3.2. Overall impact and significance (contributions and practical recommendations)	3.2. Evaluación del impacto global y alcance (contribuciones y recomendaciones prácticas)	Yes	

Publications

The Master's Degree candidate, Name of the author of the thesis, has co-authored the following publications with Prof. Name of the supervisor of the thesis et al. The articles come as a result of the research activities carried out during the Master's Thesis. The candidate is the corresponding author in two of the three publications listed below:

- [1] M. Vega and J. Ramirez, "Neural augmentation and techno-spirituality," *Journal of Cybernetic Studies*, vol. 14, no. 3, pp. 187–212, 2053.
- [2] A. Jensen and A. Navarre, "On transhumanism and global power struggles: A post augmentation incident analysis," *National Augmentation*, vol. 32, no. 2, pp. 75–98, 2052.
- [3] S. Spiegel and J. Black, "The art of bounty hunting to the rhythm of jazz," in *Space Bounty Hunter Conference*, Bounty Hunter Guild, Convention Center, Mars City: Valentine Publications, Jun. 2071, pp. 45–50.

Note: [3] is not yet published.

ACKNOWLEDGEMENTS

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*“Y así, mi señor, es como sabemos que
la Tierra tiene forma de plátano”*

Sir Bedevere el Sabio

Interpretado por TERRY JONES

En *Monty Python y los caballeros
de la mesa cuadrada*, 1975

Contents

About the authors	iii
Abstract	v
Executive overview	ix
Publications	xi
Acknowledgements	xiii
Dedication	xv
Table of contents	xviii
List of figures	xix
List of tables	xxi
Glossary	xxiii
1 Introduction	1
1.1 Alcázar	1
1.2 Scelerisque id lorem in	1
1.2.1 Dolor sit amet	1
1.2.1.1 Nullam quis lacus	2
1.2.1.2 Nulla elementum orci	2
1.2.1.3 Nulla elementum orci	4
1.2.1.3.1 Nullam quis lacus vel ante feugiat efficitur id ut quam	4
1.2.1.3.2 Lorem ipsum dolor sit amet	4
1.3 In vestibulum faucibus	5
2 Specifications	9
2.1 Aljibe	9
2.1.1 Alberca	9
2.1.1.1 Nullam quis lacus	9
2.1.1.2 Nulla elementum orci	9
2.1.1.3 Nullam quis lacus	9
2.1.1.4 Nulla elementum orci	11
2.2 Acequia	11
2.2.1 Nulla elementum orci	11
2.2.1.1 Nullam quis lacus	11
2.2.1.2 Nulla elementum orci	12
Bibliography	13
A Something vaguely related to the body of the text.	15
A.1 Praesent vulputate tellus vel metus rutrum	15
A.1.1 Faucibus interdum nisi	15
A.1.2 Praesent vulputate tellus vel metus rutrum	15
A.1.2.1 Lorem ipsum dolor sit amet, consectetur adipiscing elit	17

A.1.2.2	Fusce faucibus ex at massa ultrices elementum	17
A.2	Nulla elementum orci in dolor dapibus	17
A.2.1	Non luctus mi sollicitudin	17
B	A long table of things	19
C	Sustainable Development Goals	21

List of Figures

1.1	Fachada del Palacio del rey don Pedro, en el Real Alcázar de Sevilla.	2
1.2	Alcázar de Jerez de la Frontera.	6
1.3	Plano. Sección A-A y Planta Baja del Patio de las Doncellas.	7
A.1	Alcázar de los reyes cristianos, Córdoba.	16

List of Tables

2.1	Strapping pin configuration during boot on the ESP32.	10
B.1	Example of a long landscape table.	20
C.1	Relationship of this project with the SDGs of the 2030 Agenda.	22

Glossary

[A](#) | [B](#) | [C](#) | [D](#) | [E](#) | [F](#) | [G](#) | [M](#) | [N](#) | [P](#) | [R](#) | [S](#)

A

Antenna A metallic structure that acts as an interface between radiated waves propagating through space and electronic circuits. Antennas can receive and/or transmit radio-frequency electromagnetic waves.

B

Bypass capacitor A synonym for “Decoupling capacitor”.

C

Choke An inductor specifically used to block high-frequency AC while passing low-frequency signals and DC.

Conflict resource Natural resources whose systematic exploitation and trade in a context of conflict contribute to, benefit from or result in violations of human rights and international law.

CubeSat A type of Micro-Satellite or Nano-Satellite, composed of one or more standard cubic units of 10 cm side.

D

Decoupling capacitor Usually located on the power input pins of an active device, it is a capacitor that provides a charge reserve physically near a component, which supplies energy to it in case of pulsed power consumption, thus preventing the supply voltage from decaying. It is also used to remove unwanted AC components (noise and ripple) from a DC signal.

E

EMC Electro-Magnetic Compatibility. The capability of electronic systems to operate in their intended electromagnetic environment within a defined margin of safety without suffering or causing unacceptable degradation as a result of EMI.

EMI Electro-Magnetic Interference. The process by disruptive electromagnetic energy is transmitted from one electronic device to another, via radiated or conducted paths.

ESD Electrostatic discharge.

F

Fiducial marks Pads which act as reference points for Stencil alignment, computer vision automated component placement by Pick and Place

machines and optical inspections systems.

G

GNU GNU's Not Unix!

M

Micro-Satellite A type of small satellite with a mass ranging from 10 to 100 kg.

Microwaves The name given to electromagnetic waves with frequencies between 300 MHz and 300 GHz.

mPCIe Mini-PCI-express.

N

Nano-Satellite A type of small satellite with a mass ranging from 1 to 10 kg.

P

PCB Printed Circuit Board. A rugged boards built on a dielectric substrate used to provide mechanical support and electrical connection between the components of a circuit.

PCI Peripheral Component Interconnect.

PCIe PCI-Express.

Pick and Place machine A machine with a robot arm and computer vision for picking components from a feeder and inserting them into a specific site on the PCB.

R

Re-flow soldering The process consists on joining components to substrates by placing the parts into Solder paste and then warming the paste up to its melting point for a short period of time, in order to achieve re-flow and the interconnection between a component terminal and a PCB pad.

S

SDG Sustainable Development Goals.

SFD Start Frame Delimiter.

Solder mask The insulating polymer coating used to mask or protect the PCB's copper tracks from corrosion and oxidation, dirt, dust, and fingerprints. It also prevents masked areas of being poured by solder during Re-flow soldering and other processes such as etching or plating. This way, no shorts are created between tracks. Solder mask give PCBs a distinct colour, usually green.

Solder paste A sticky mixture of powdered solder (the fusible metal alloy which bonds pads and

components) and flux (a viscous chemical cleaning agent).

Stencil A sheet of material (usually plastic or stainless steel) with openings according to the Solder mask. The apertures are the same shape and

size as the SMD component pads, and are placed in their corresponding position. With the stencil it is easy to deposit the right amount of Solder paste accurately and repeatably.

CHAPTER 1

Introduction

1.1 Alcázar

This is an example of how this template may be used. As we can see in [Figure 1.1](#) [1], [2], the Antenna is lorem ipsum dolor sit amet [3]–[6], consectetur adipiscing elit. Integer tempus quis elit id sagittis. Cras tincidunt nisi at tellus luctus, et congue dolor posuere. Aliquam suscipit felis sit amet lacus ultrices aliquet.

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$$a_1^2 + b_1^2 = c_1^2 \tag{1.1}$$

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Figure 1.1 – Fachada del Palacio del rey don Pedro, en el Real Alcázar de Sevilla. [Alberto Bravo](#).
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- Cras aliquet elementum tellus ullamcorper malesuada. Integer purus est, pharetra eu ullamcorper quis, imperdiet non turpis.
- In vestibulum faucibus ligula eget blandit.

Donec eget cursus risus, Listing 1.1 quis suscipit justo. Curabitur efficitur, dolor nec pulvinar pellentesque, lectus eros hendrerit nisi, in aliquet erat nunc non ipsum. Curabitur felis nunc, viverra nec quam ultrices, suscipit condimentum nibh. Nam faucibus felis hendrerit imperdiet maximus. Curabitur tincidunt porttitor lectus quis feugiat. Sed imperdiet bibendum mi.

Listing 1.1 – Some example code

```

1 %
2 %
3 % ,'
4 % MM
5 % ,6"Yb. MM ,p6"bo ,6"Yb. M""MMV ,6"Yb. ~7Mb,od8
6 % 8) MM MM 6M' 00 8) MM ' AMV 8) MM MM ''
7 % ,pm9MM MM 8M ,pm9MM AMV ,pm9MM MM
8 % 8M MM MM YM. , 8M MM AMV , 8M MM MM
9 % `Moo9^Yo..JMLL.YBmd` `Moo9^Yo.AMMmmM `Moo9^Yo..JMLL.
10 %
11 %
12 % Free, Open-Source Thesis template for LaTeX
13 % https://github.com/dpmj/alcazar
14 %
15 %
16 %-----%
17 % PREAMBLE
18 %
19 \documentclass[twoside, openright, 12pt, final]{report}
20 %
21 %
22 % -----
23 % Variables
24 %
25 % Title for the title page
26 \newcommand{\thesisTitle}{Alcázar: a free and open source template for academic papers, for nerdy
27 % kids who do boring stuff like theses with endless titles.}
28 % Title for the pages' heading
29 \newcommand{\thesisTitleShort}{Alcázar: a free and open source template for academic works.}
30 %
31 \newcommand{\thesisType}{Master's Thesis} % Bachelor's Thesis, Master's Thesis, PhD Thesis...
32 \newcommand{\thesisDegree}{Master's Degree} % Bachelor's Degree, Master's Degree, PhD...
33 \newcommand{\thesisArea}{Typesetting Engineering} % Area of knowledge
34 %
35 \newcommand{\thesisAuthor}{Name of the author of the thesis}
\newcommand{\thesisTutor}{Name of the supervisor of the thesis}
```

```

36 \newcommand{\thesisYear}{2077} % Date of the thesis' submission or defense
37 \newcommand{\thesisMonth}{June}
38 \newcommand{\thesisDate}{\thesisMonth \thesisYear}
39 \newcommand{\thesisAcademicCourse}{2076/2077} % During which academic year(s) was the thesis
40   → developed
41
42 \newcommand{\thesisSchool}{University of Misco}
43 \newcommand{\thesisAddress}{Fake avenue 00, Region, Country}
44 \newcommand{\thesisDepartment}{Based department}
45
46 \newcommand{\thesisKeywords}{Keyword 1, Keyword 2, Keyword 3, Keyword 4, Keyword 4, Keyword 5,
47   → Keyword 6, Keyword 7, Keyword 8, Keyword 9, Keyword 10, Keyword N}
48 % For the abstract and indexing
49
50 % -----
51 % Import document style
52 \usepackage{style/alcazar}
53
54 % END PREAMBLE
55 % %%%%%%%%%%%%%%
56 % BEGIN DOCUMENT
57
58 \begin{document}
59
60 % Titlepage, license, about, abstract, keywords, publications, acknowledgements, dedication and
61   → tables of contents
62 \include{opening/opening.tex}
63
64 % Glossary and acronyms
65 \include{glossary/glossary.tex}
66
67 % Chapters - main text
68 \include{text/chapters/chapters.tex}
69
70 % Bibliography
71 \include{bibliography/bibliography.tex}
72
73 % Addendum - secondary text
74 \include{text/appendix/appendix.tex}
75
76 % It's nice to say thanks.
77 % \include{text/appendix/thanks} % Comment this line if you feel like it.
78
79 \end{document}
80
81 % END DOCUMENT
% %%%%%%%%%%%%%%

```

1.2.1.3 Nulla elementum orci

1.2.1.3.1 Nullam quis lacus vel ante feugiat efficitur id ut quam Nullam quis lacus vel ante feugiat efficitur id ut quam. Pellentesque commodo elit nec urna gravida maximus. Suspendisse ut risus eu ipsum porta porta ac et orci. Donec dictum ligula sodales, euismod est sed, semper libero. In blandit, nulla et elementum pharetra, mi nunc sagittis tellus, sit amet scelerisque magna elit ac sapien. Curabitur ipsum dui, pretium a maximus id, varius gravida nisl. Sed vitae mattis elit, vitae hendrerit lorem. Decoupling capacitor

1.2.1.3.2 Lorem ipsum dolor sit amet Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer tempus quis elit id sagittis. Cras tincidunt nisi at tellus luctus, et congue dolor posuere. Aliquam suscipit felis sit amet lacus ultrices aliquet. Sed sagit-

tis ultrices nisi, vel elementum elit dignissim non. Fusce faucibus ex at massa ultrices elementum. Nullam ullamcorper lorem sit amet facilisis cursus. Suspendisse non erat non justo porta placerat. Morbi porttitor dictum molestie. Sed vitae iaculis libero. Suspendisse in gravida lacus, tempor ultrices nibh. Nam consequat scelerisque porttitor.

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Proin a condimentum nibh. Praesent vulputate tellus vel metus rutrum, non luctus mi sollicitudin. Nam ac tellus ut eros sollicitudin luctus at ac mi. Vestibulum mollis nec nisi a laoreet. Proin neque tortor, placerat nec suscipit sit amet, ullamcorper in sem. Fusce faucibus ultrices cursus. Maecenas scelerisque mauris diam, at volutpat nisi porta vitae. Sed at ipsum et leo cursus varius eu eu lectus. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Ut felis ipsum, imperdiet rhoncus orci ac, consectetur luctus nisl. Cras aliquet elementum tellus ullamcorper malesuada. Integer purus est, pharetra eu ullamcorper quis, imperdiet non turpis.

1.3 In vestibulum faucibus

In vestibulum faucibus ligula eget blandit. Donec eget cursus risus, quis suscipit justo. Curabitur efficitur, dolor nec pulvinar pellentesque, lectus eros hendrerit nisi, in aliquet erat nunc non ipsum. Curabitur felis nunc, viverra nec quam ultrices, suscipit condimentum nibh. Nam faucibus felis hendrerit imperdiet maximus. Curabitur tincidunt porttitor lectus quis feugiat. Sed imperdiet bibendum mi.

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(a) Palacio de Villavicencio, Alcázar, Jerez de la Frontera. [Diego Delso](#).



(b) Mezquita, Alcázar, Jerez de la Frontera, España [Diego Delso](#).

Figure 1.2 – Alcázar de Jerez de la Frontera.

Fusce faucibus ultrices cursus. Maecenas scelerisque mauris diam, at volutpat nisi porta vitae. Sed at ipsum et leo cursus varius eu eu lectus. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Ut felis ipsum, imperdiet rhoncus orci ac, consectetur luctus nisl. Cras aliquet elementum tellus ullamcorper malesuada. Integer purus est, pharetra eu ullamcorper quis, imperdiet non turpis.

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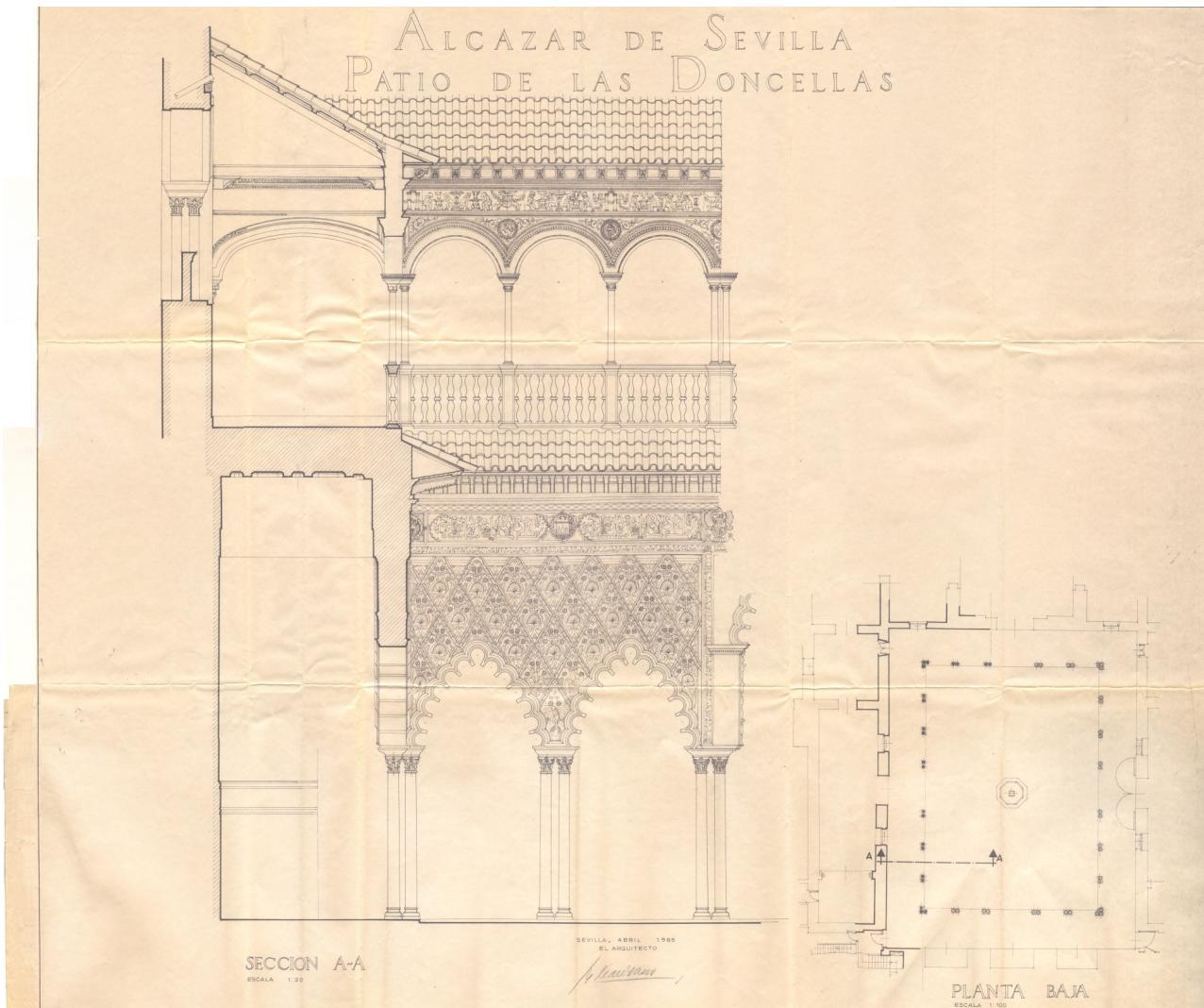


Figure 1.3 – Plano. Sección A-A y Planta Baja del Patio de las Doncellas. [Instituto Andaluz del Patrimonio Histórico](#).

1
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer tempus quis elit id sagittis. Cras tincidunt nisi at tellus luctus, et congue dolor posuere. Aliquam suscipit felis sit amet lacus ultrices aliquet. Sed sagittis ultrices nisi, vel elementum elit dignissim non. Fusce faucibus ex at massa ultrices elementum. Nullam ullamcorper lorem sit amet facilisis cursus. Suspendisse non erat non justo porta placerat. Morbi porttitor dictum molestie. Sed vitae iaculis libero. Suspendisse in gravida lacus, tempor ultrices nibh. Nam consequat scelerisque porttitor.

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lorem.

CHAPTER 2

Specifications

2.1 Aljibe

This is an example of how this template may be used. As we can see in [Figure 1.1](#), the Microwaves is lorem ipsum dolor sit amet [7], consectetur adipiscing elit. Integer tempus quis elit id sagittis. Cras tincidunt nisi at tellus luctus, et congue dolor posuere. Aliquam suscipit felis sit amet lacus ultrices aliquet.

Sed sagittis ultrices nisi, vel elementum elit dignissim non. Fusce faucibus ex at massa ultrices elementum. Nullam ullamcorper lorem sit amet facilisis cursus. Suspendisse non erat non justo porta placerat. Morbi porttitor dictum molestie. PCB sed vitae iaculis libero. Suspendisse in gravida lacus, tempor ultrices nibh. Nam consequat scelerisque porttitor [10], [11].

2.1.1 Alberca

2.1.1.1 Nullam quis lacus

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Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer tempus quis elit id sagittis. Cras tincidunt nisi at tellus luctus, et congue dolor posuere. Aliquam suscipit felis sit amet lacus ultrices aliquet . Sed sagittis ultrices nisi, vel elementum elit dignissim non. Fusce faucibus ex at massa ultrices elementum. Nullam ullamcorper lorem sit amet facilisis cursus. Suspendisse non erat non justo porta placerat. Morbi porttitor dictum molestie. Sed vitae iaculis libero. Suspendisse in gravida lacus, tempor ultrices nibh. Nam consequat scelerisque porttitor [13], [14].

2.1.1.2 Nulla elementum orci

Nulla elementum orci in dolor dapibus, ac facilisis sem ultrices. Nullam eleifend id eros sed luctus. Maecenas arcu ipsum, scelerisque id lorem in, placerat posuere tellus. Etiam gravida velit sed arcu viverra dapibus. Mauris vitae augue dapibus, molestie justo eget, condimentum ipsum. Nulla tristique mi eget semper luctus [15]. Etiam commodo vestibulum vulputate. Etiam quis sapien dolor. Nunc tristique eu lacus quis ullamcorper. Sed volutpat rutrum vehicula. Donec nunc nisl, suscipit in faucibus vitae, tristique eu risus. Nulla facilisis augue eget

2.1.1.3 Nullam quis lacus

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Voltage of internal LDO (VDD_SDIO)					
Pin	Default	VDD_SDIO = 3.3 V	VDD_SDIO = 1.8 V		
GPIO12/MTDI	Pull-down	0	1		
Booting mode					
Pin	Default	SPI boot	Download boot (programming)		
GPIO0	Pull-up	1	0		
GPIO2	Pull-down	Don't care	0		
Enabling/Disabling debugging log print over UOTXD (UART TXD) during boot					
Pin	Default	U0TXD Active	U0TXD Silent		
GPIO15/MTDO	Pull-up	1	0		
Timing of SDIO slave					
Pin	Default	FE Sampling FE Output	FE Sampling RE Output	RE Sampling FE Output	RE Sampling RE Output
GPIO15/MTDO	Pull-up	0	0	1	1
GPIO5	Pull-up	0	1	0	1

Table 2.1 – Strapping pin configuration during boot on the ESP32. Extracted from ESP32's data sheet [16], [17] (Table 5, page 21). FE: Falling Edge, RE: Rising Edge.

Curabitur ipsum dui, pretium a maximus id, varius gravida nisl. Sed vitae mattis elit, vitae hendrerit lorem.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer tempus quis elit id sagittis. Cras tincidunt nisi at tellus luctus, et congue dolor posuere. Aliquam suscipit felis sit amet lacus ultrices aliquet. Sed sagittis ultrices nisi, vel elementum elit dignissim non. Fusce faucibus ex at massa ultrices elementum. Nullam ullamcorper lorem sit amet facilisis cursus. Suspendisse non erat non justo porta placerat. Morbi porttitor dictum molestie. Sed vitae iaculis libero. Suspendisse in gravida lacus, tempor ultrices nibh. Nam consequat scelerisque porttitor.

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2.2 Acequia

2.2.1 Nulla elementum orci

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2.2.1.1 Nullam quis lacus

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APPENDIX A

Something vaguely related to the body of the text.

A.1 Praesent vulputate tellus vel metus rutrum

 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer tempus quis elit id sagittis. Cras tincidunt nisi at tellus luctus, et congue dolor posuere. Aliquam suscipit felis sit amet lacus ultrices aliquet. Sed sagittis ultrices nisi, vel elementum elit dignissim non. Fusce faucibus ex at massa ultrices elementum. Nullam ullamcorper lorem sit amet facilisis cursus. Suspendisse non erat non justo porta placerat. Morbi porttitor dictum molestie. Sed vitae iaculis libero. Suspendisse in gravida lacus, tempor ultrices nibh. Nam consequat scelerisque porttitor [10], [11].

A.1.1 Faucibus interdum nisi

 Nulla elementum orci in dolor dapibus, ac facilisis sem ultrices. Nullam eleifend id eros sed luctus. Maecenas arcu ipsum, scelerisque id lorem in, placerat posuere tellus [17]. Etiam gravida velit sed arcu viverra dapibus. Mauris vitae augue dapibus, molestie justo eget, condimentum ipsum. Nulla tristique mi eget semper luctus. Etiam commodo vestibulum vulputate. Etiam quis sapien dolor. Nunc tristique eu lacus quis ullamcorper. Sed volutpat rutrum vehicula. Donec nunc nisl, suscipit in faucibus vitae, tristique eu risus. GNU nulla facilisis augue eget interdum rutrum. Aliquam sem nunc, fermentum sed urna ac, faucibus interdum nisi.

A.1.2 Praesent vulputate tellus vel metus rutrum

 Proin a condimentum nibh. Praesent vulputate tellus vel metus rutrum, non luctus mi sollicitudin. Nam ac tellus ut eros sollicitudin luctus at ac mi. Vestibulum mollis nec nisi a laoreet. Proin neque tortor, placerat nec suscipit sit amet, ullamcorper in sem. Fusce faucibus ultrices cursus. Maecenas scelerisque mauris diam, at volutpat nisi porta vitae.

 Sed at ipsum et leo cursus varius eu eu lectus. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos.

 Ut felis ipsum, imperdiet rhoncus orci ac, consectetur luctus nisl. Cras aliquet elementum tellus ullamcorper malesuada. Integer purus est, pharetra eu ullamcorper quis, imperdiet non turpis. [15], [19], [20]

 In vestibulum faucibus ligula eget blandit. Donec eget cursus risus, quis suscipit justo. Curabitur efficitur, dolor nec pulvinar pellentesque, lectus eros hendrerit nisi, in aliquet erat nunc non ipsum. Curabitur felis nunc, viverra nec quam ultrices, suscipit condimentum nibh. Nam faucibus felis hendrerit imperdiet maximus. Curabitur tincidunt porttitor lectus quis feugiat. Sed imperdiet bibendum mi.

Nullam quis lacus vel ante feugiat efficitur id ut quam. Pellentesque commodo elit nec urna gravida maximus. Suspendisse ut risus eu ipsum porta porta ac et orci. Donec dictum ligula sodales, euismod est sed, semper libero Fiducial marks.

In blandit , nulla et elementum pharetra, mi nunc sagittis tellus, sit amet scelerisque

A

Figure A.1 – Alcázar de los reyes cristianos, Córdoba. [Ahura klik](#).

magna elit ac sapien. Curabitur ipsum dui, pretium a maximus id, varius gravida nisl. Sed vitae mattis elit, vitae hendrerit lorem [13], [15].

A

A.1.2.1 **Lorem ipsum dolor sit amet, consectetur adipiscing elit**

Integer tempus quis elit id sagittis. Cras tincidunt nisi at tellus luctus, et congue dolor posuere. Aliquam suscipit felis sit amet lacus ultrices aliquet. Sed sagittis ultrices nisi, vel elementum elit dignissim non.

A.1.2.2 **Fusce faucibus ex at massa ultrices elementum**

Nullam ullamcorper lorem sit amet facilisis cursus. Suspendisse non erat non justo porta placerat. Morbi porttitor dictum molestie. Sed vitae iaculis libero. Suspendisse in gravida lacus, tempor ultrices nibh. Nam consequat scelerisque porttitor.

A.2 Nulla elementum orci in dolor dapibus

Nulla elementum orci in dolor dapibus, ac facilisis sem ultrices. Nullam eleifend id eros sed luctus. Maecenas arcu ipsum, scelerisque id lorem in, placerat posuere tellus. Etiam gravida velit sed arcu viverra dapibus. Mauris vitae augue dapibus, molestie justo eget, condimentum ipsum. Nulla tristique mi eget semper luctus. Etiam commodo vestibulum vulputate. Etiam quis sapien dolor. Nunc tristique eu lacus quis ullamcorper. Sed volutpat rutrum vehicula. Donec nunc nisl, suscipit in faucibus vitae, tristique eu risus. Nulla facilisis augue eget interdum rutrum. Aliquam sem nunc, fermentum sed urna ac, faucibus interdum nisi.

A.2.1 Non luctus mi sollicitudin

Nam ac tellus ut eros sollicitudin luctus at ac mi. Vestibulum mollis nec nisi a laoreet. Proin neque tortor, placerat nec suscipit sit amet, ullamcorper in sem. Fusce faucibus ultrices cursus. Maecenas scelerisque mauris diam, at volutpat nisi porta vitae. Sed at ipsum et leo cursus varius eu eu lectus. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Ut felis ipsum, imperdiet rhoncus orci ac, consectetur luctus nisl. Cras aliquet elementum tellus ullamcorper malesuada. Integer purus est, pharetra eu ullamcorper quis, imperdiet non turpis.

In vestibulum faucibus ligula eget blandit. Donec eget cursus risus, quis suscipit justo. Curabitur efficitur Listing A.1, dolor nec pulvinar pellentesque, lectus eros hendrerit nisi, in aliquet erat nunc non ipsum. Curabitur felis nunc, viverra nec quam ultrices, suscipit condimentum nibh. Nam faucibus felis hendrerit imperdiet maximus. Curabitur tincidunt porttitor lectus quis feugiat. Sed imperdiet bibendum mi. Cras aliquet elementum tellus ullamcorper malesuada. Integer purus est, pharetra eu ullamcorper quis, imperdiet non turpis. Sed at ipsum et leo cursus varius eu eu lectus. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Curabitur felis nunc, viverra nec quam ultrices, suscipit condimentum nibh. Nam faucibus felis hendrerit imperdiet maximus. Curabitur tincidunt porttitor lectus quis feugiat.

Listing A.1 – Some example large code

```

1  """
2  Some interesting python code
3  Blah Blah Blah
4  """

```

```

5
6 import numpy as np
7 from matplotlib import pyplot as plt
8 from numpy.polynomial import Polynomial as Poly
9
10 plt.rcParams["font.family"] = "Libertinus Serif"
11 plt.rcParams['font.size'] = 14
12 plt.rcParams['mathtext.fontset'] = 'custom'
13 plt.rcParams['mathtext.rm'] = 'Libertinus Serif'
14 plt.rcParams['mathtext.it'] = 'Libertinus Serif:italic'
15 plt.rcParams['mathtext.bf'] = 'Libertinus Serif:bold'
16
17 R510 = 508.3 # Ohms
18 V5 = 5.018 # Volts
19
20 # Open files
21
22 nmos_vgs, nmos_ids = np.loadtxt('nmos_ids_vgs.csv', delimiter='\t', unpack=True, skiprows=1)
23 nmos_sim_vgs, nmos_sim_ids = np.loadtxt('CIC_P0_NMOS_ids_vgs_5.txt', delimiter='\t', unpack=True,
24   skiprows=1)
25
26 # Do thingies
27
28 nmos_ids = nmos_ids / R510 # Current in resistor
29 p = Poly.fit(nmos_vgs, nmos_ids, 1) # Tendency line
30 print(f"f(x) = {p:unicode}")
31
32 # Plot stuff
33
34 fig0, ax0 = plt.subplots(figsize=[12, 6])
35 x = np.linspace(0, 6, 100)
36
37 plt.plot(nmos_vgs, nmos_ids, linestyle='none', marker=".", label='Experimental')
38 plt.plot(nmos_sim_vgs, nmos_sim_ids, linestyle='dashdot', label='Simulation')
39 plt.plot(x, p(x), linestyle='dashed', label='Tendency')
40
41 ax0.grid(True, which='major', color="#AAAAAA", linestyle='-', linewidth=0.6)
42 ax0.grid(True, which='minor', color="#AAAAAA", linestyle=':', linewidth=0.6)
43 ax0.minorticks_on()
44
45 ax0.legend()
46
47 plt.title(r'NMOS, curve $I_{DS} / V_{GS}$')
48 plt.xlabel(r'$V_{GS}$ (V)')
49 plt.ylabel(r'$I_{DS}$ (A)')
50
51 plt.xlim([0, 6])
52
53 # Dont forget to save
54 plt.savefig("nmos_vgs_ids.pdf")

```

APPENDIX B

A long table of things

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer tempus quis elit id sagittis. Cras tincidunt nisi at tellus luctus, et congue dolor posuere. Aliquam suscipit felis sit amet lacus ultrices aliquet. Sed sagittis ultrices nisi, vel elementum elit dignissim non. Fusce faucibus ex at massa ultrices elementum. Nullam ullamcorper lorem sit amet facilisis cursus. Suspendisse non erat non justo porta placerat. Morbi porttitor dictum molestie. Sed vitae iaculis libero. Suspendisse in gravida lacus, tempor ultrices nibh. Nam consequat scelerisque porttitor¹.

Nulla elementum orci in dolor dapibus, ac facilisis sem ultrices. Nullam eleifend id eros sed luctus. Maecenas arcu ipsum, scelerisque id lorem in, placerat posuere tellus.

Etiam gravida velit sed arcu viverra dapibus. Mauris vitae augue dapibus, molestie justo eget, condimentum ipsum. Nulla tristique mi eget semper luctus [Table B.1](#).

¹And if you can believe it, It's a Friday once again!

Table B.1 – Example of a long landscape table.

Nº	EDT	Nombre de tarea	Trabajo	Duración	Predecesoras	Comienzo	Fin	Recursos
1	1	Dirección del proyecto	4 días	4 días		lun 03/07/23	jue 06/07/23	
2	1.1	Reunión inicial de planificación con el cliente	3 días	3 días		lun 03/07/23	mié 05/07/23	Ana Torres;Carla Aguilar;Diego Ortiz;Lucía Castro;Martina Martínez;Pablo Gómez;Rodrigo García
3	1.2	Reparto de tareas a los trabajadores	1 día	1 día	1.1	jue 06/07/23	jue 06/07/23	Ana Torres
4	2	Estudio de la viabilidad del despliegue	27 días	9,67 días		vie 07/07/23	jue 20/07/23	
5	2.1	Estudio de la orografía	5 días	1,67 días	1.2	vie 07/07/23	lun 10/07/23	Rodrigo García;Paloma Cuesta;Ramón García
6	2.2	Estudio del emplazamiento de las antenas del radioenlace y balance de potencias	4 días	1,33 días	2.1	mié 12/07/23	jue 13/07/23	Rodrigo García;Paloma Cuesta;Ramón García
7	2.3	Estudio del emplazamiento de las estaciones base y radio de cobertura	4 días	1,33 días	2.1	jue 13/07/23	vie 14/07/23	Rodrigo García;Paloma Cuesta;Ramón García
8	2.4	Estudio de la magnitud del tráfico	3 días	1 día	1.2	lun 10/07/23	mar 11/07/23	Rodrigo García;Paloma Cuesta;Ramón García
9	2.5	Revisión de la normativa	2 días	0,67 días	1.2	mar 11/07/23	mié 12/07/23	Rodrigo García;Paloma Cuesta;Ramón García
10	2.6	Establecimiento de los requisitos técnicos	5 días	1,67 días	2.1;2.2;2.3;2.4;2.5	lun 17/07/23	mar 18/07/23	Rodrigo García;Paloma Cuesta;Ramón García
11	2.7	Establecimiento de un presupuesto temprano	4 días	2 días	2.6	mar 18/07/23	jue 20/07/23	Ana Torres;Rodrigo García
12	3	Diseño del despliegue	41 días	14 días		jue 20/07/23	mié 09/08/23	
13	3.1	Diseño de la red	29 días	9,67 días		jue 20/07/23	jue 03/08/23	
14	3.1.1	Diseño de las estaciones base de telefonía	7 días	9,67 días		jue 20/07/23	jue 03/08/23	
15	3.1.1.1	Elección del emplazamiento físico	5 días	1,67 días	2	jue 20/07/23	lun 24/07/23	Rodrigo García;Paloma Cuesta;Ramón García
16	3.1.1.2	Diseño de la sectorización y el apuntado	2 días	0,67 días	3.1.1.1	mié 02/08/23	jue 03/08/23	Rodrigo García;Paloma Cuesta;Ramón García
17	3.1.2	Diseño de las estaciones base del radioenlace	7 días	2,33 días		lun 24/07/23	mié 26/07/23	
18	3.1.2.1	Elección del emplazamiento físico	5 días	1,67 días	2	lun 24/07/23	mar 25/07/23	Rodrigo García;Paloma Cuesta;Ramón García
19	3.1.2.2	Diseño del apuntado	2 días	0,67 días	3.1.2.1	mié 26/07/23	mié 26/07/23	Rodrigo García;Paloma Cuesta;Ramón García
20	3.1.3	Diseño de la topología de red	10 días	3,33 días	2	mié 26/07/23	lun 31/07/23	Rodrigo García;Paloma Cuesta;Ramón García
21	3.1.4	Diseño de la gestión y separación del tráfico	5 días	1,67 días	2	mar 01/08/23	mié 02/08/23	Rodrigo García;Paloma Cuesta;Ramón García
22	3.2	Elección de equipos y componentes	10 días	3,33 días		jue 03/08/23	mar 08/08/23	
23	3.2.1	Elección de los equipos de RF	5 días	1,67 días	3.1	jue 03/08/23	vie 04/08/23	Rodrigo García;Paloma Cuesta;Ramón García
24	3.2.2	Elección de los equipos de red	5 días	1,67 días	3.1	lun 07/08/23	mar 08/08/23	Rodrigo García;Paloma Cuesta;Ramón García
25	3.3	Elaboración del presupuesto base	2 días	1 día	3.1;3.2	mar 08/08/23	mié 09/08/23	Rodrigo García;Ana Torres
26	4	Despliegue físico	38 días	15,83 días		mié 09/08/23	jue 31/08/23	
27	4.1	Reunión de materiales	4 días	2 días	3	mié 09/08/23	vie 11/08/23	Diego Ortiz;Martina Martínez
28	4.2	Construcción	15 días	7,5 días		vie 11/08/23	mié 23/08/23	
29	4.2.1	Estaciones de telefonía	5 días	2,5 días	4.1	vie 11/08/23	mié 16/08/23	Diego Ortiz;Martina Martínez

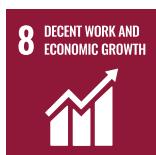
APPENDIX C

Sustainable Development Goals

The Sustainable Development Goals (SDG) are a set of seventeen goals aimed at fostering peace and prosperity for people and the planet [12]. The following list justifies the alignment of this work with the corresponding SDG. [Table C.1](#) summarizes the affinity with each SDG.



4. Quality education. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur.



8. Decent work and economic growth. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.



9. Industry, Innovation and Infrastructure. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu.



10. Reduced inequality. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat.



12. Responsible consumption and production. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate in voluptate velit esse cillum dolore eu.



13. Climate action. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco.



17. Partnership for the goals. Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud.

Sustainable Development Goal		Degree of relation			
SDG No.	Name	High	Medium	Low	N/A
1	No poverty				x
2	Zero hunger				x
3	Good health and wellbeing				x
4	Quality education	x			
5	Gender equality				x
6	Clean water and sanitation				x
7	Affordable and clean energy				x
8	Decent work and economic growth				x
9	Industry, Innovation and Infrastructure	x			
10	Reduced inequality			x	
11	Sustainable cities and communities				x
12	Responsible consumption and production		x		
13	Climate action				x
14	Life below water				x
15	Life on land				x
16	Peace, justice and strong institutions				x
17	Partnership for the goals			x	

Table C.1 – Relationship of this project with the SDGs of the 2030 Agenda.