# **PROJECT CHARTER**

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|  | 1. Informação geral | | | | | | | | | | | | |
|  | Nome do Projeto: | | | Master’s Dissertation | | | | | | | | | |
|  | Sponsor: | | | **Isabel Azevedo** | | | | | | | | | |
|  | Departamento | | | **Software Engeneering** | | | | | | | | | |
|  | 2. Equipa do Projeto | | | | | | | | | | | | |
|  | Cargo | **Nome** | | | **Departamento** | | | **Contact Tel** | | | **E-mail** | | |
|  | Researcher | **Miguel Alves Ferreira** | | | **Software Engeneering** | | | **911053305** | | | [**1230199@isep.ipp.pt**](mailto:1230199@isep.ipp.pt) | | |
|  | Advisor | **Isabel Azevedo** | | | **Software engeneering** | | |  | | | [**Ifp@isep.ipp.pt**](mailto:Ifp@isep.ipp.pt) | | |
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|  | **3. Stakeholders** | | | | | | | | | | | | |
|  | Nome | | | | | | | | | Poder | | Interesse | |
|  | Developers | | | | | | | | | Low | | Medium | |
|  | Software development companies | | | | | | | | | Medium | | High | |
|  | Students | | | | | | | | | Low | | Medium | |
|  | Researchers | | | | | | | | | High | | High | |
|  | Advisor | | | | | | | | | High | | High | |
| 4. Âmbito | | | | | | | | | | | | | |
| **Problema / justificação** | | | | | | | | | | | | | |
| Problema, necessidade, Reseach area e Reseach Topic, etc.  The main problem is see how protocol buffers compare with JSON in the same software architechture, in this case, REST. This Happens because, JSON is already a stablished serialization format and the defacto standard in the industry, Protocol Buffers on the other hand are less used as JSON and they are often used with gPRC and not within REST applications, Protocol Buffers are already a proved solution for modern problems, but they are uncommon to be used within REST applications, maybe because of the lack of research and proof of them being a better option to JSON is what holds back developers to choose JSON over Protocol Buffers or even the energy consumption of the system. | | | | | | | | | | | | | |
| **Objetivos do projeto** | | | | | | | | | | | | | |
| Gerais, específicos, metodologia, Research question (s), hipótese, etc  The main objective is to analyze if Protocol Buffers are indeed a good replacement of JSON in REST applications, or if at least they could have some benefit in this type of architecture.  RQ1:  RQ2: | | | | | | | | | | | | | |
| **Benefícios** | | | | | | | | | | | | | |
| Cost Reduction – if proved that Protobufs have a lower energy consumption this might be one of the implications, none the less its proven that protobufs have smaller payload sizes which could result in less costs  Better application performance – Almost all studies that study protocol buffers, shows they can improve the overall performance of requests, making the system also faster and performant  Less Refactoring – As Protocol Buffers are more prevelant in the gRPC sytems, if this study proves to be conclusive, the need for companies to fully transition to a gRPC + Protobufs is reduced to a certain extent (depending on the necessities and constraints) allowing companys to mantain the REST architecture and switch the serialization format to Protobuffs which might be a safer options compared to migrating the whole system.  Software Improvement – If proven that Protocol buffers work great in REST applications, more people might start using it and incentivise for new and better solutions to the diferent serialization methods, even if that means an improved version of Protobufs | | | | | | | | | | | | | |
| **Entregáveis** | | | | | | | | | | | | | |
| Project Plan  Dissertation Report  Presentation and Discussion  Testing reports  Software code  Data collected | | | | | | | | | | | | | |
| 5. Tempo | | | | | | | | | | | | | |
| **Milestones / Datas** | | | | | | | | | | | | | |
| Datas que eu me comprometo (podem alterar)  Datas obrigatórias (deadlines, que não podem mudar)   * Delivery For the Advisor – 06/12/2024 * Report and Presentation Delivery – 04/01/2024 * Final Delivery – 26/06/2025 | | | | | | | | | | | | | |
| 6. Custo | | | | | | | | | | | | | |
| **Fontes de custo** | | | | | | | | | | | | | |
| No costs | | | | | | | | | | | | | |
| 7. Pressupostos | | | | | | 8. Restrições | | | | | | | |
| Condições que esotu a decidir por falta de informação e que podem dar origem a riscos  The software isn’t capable of reading energy consumption  Not having a good environment for testing | | | | | | Condiçõe que eu não controlo e restrigem o meu planeamento. Podem ser datas e custos.  Using VPN to use digital libraries  Not having enough information about the tooling to be used | | | | | | | |
| 9. Riscos | | | | | | | | | | | | | |
| **Riscos identificados** | | | | | | | | | | | | | |
| Descrição | | | | | | | | | Causa | | | Efeito | |
| Lack of Knowledge | | | | | | | | | Lack of proper research made | | | Not being able to understand the future analysis or how the systems work | |
| Increasing Project Scope | | | | | | | | | Necessity or intention of increasing the depth of the research | | | Not being able to finish the dissertation in time | |
| Lack of available project | | | | | | | | | Not having an available project to use and having an unbiased opinion | | | Ending Up making my own software | |
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| **10. Aprovação** | | | | | | | | | | | | | |
|  | | | Nome | | | | Assinatura | | | | | | Data (DD/MM/YYYY) |
| Sponsor | | |  | | | |  | | | | | |  |
| Cliente | | |  | | | |  | | | | | |  |
| Gestor do Projeto | | | Miguel Alves Ferreira | | | | ***Miguel Alves Ferreira*** | | | | | | 31/10/2024 |
| Notas | | | | | | | | | | | | | |
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