**PROJECT NAME: LUPA**

**GROUP NUMBER and MEMBERS:** Ataberk YAYLA, Can ÖZER, Emirhan KÖKSAL, İrem ÖZKAN, Onur ERGÜDEN, Zuhal Naz CANSU

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| TASK # | PROJECT TASKS WHICH REQUIRE SOFTWARE TOOL SUPPORT |
| 1 | Machine Learning Tools |
| 2 | Project Management Tools |
| 3 | Database Management Tools |
| 4 | Mobile Development Kit Tools |

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| SOFTWARE TOOLS FOR TASK 1: Machine Learning Development Tools |
| Tool Cost/Training/Functionality Data   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Tool | A(Python) | B(R) | C(Matlab) | D(Julia) | | Cost | $0/mo | $0/mo | $200/mo | $0/mo | | Training Days | 10 | 15 | 7 | 20 | | Functionality | 90 | 100 | 80 | 90 |   Normalized Cost/Training/Functionality Data   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Tool | A(Python) | B(R) | C(Matlab) | D(Julia) | | Cost | $0/mo | $0/mo | $100/mo | $0/mo | | Training Days | 50 | 75 | 35 | 100 | | Functionality | 90 | 100 | 80 | 90 |   Normalized Tool Graph  ekran görüntüsü, metin, çizgi, yazılım içeren bir resim  Açıklama otomatik olarak oluşturuldu |
| Which tool has been selected? Why?  Why we choose Python: Python is known for its vast libraries and frameworks about machine learning and deep learning. These libraries provide strong tools for data preprocessing, model development, and evaluation, essential for implementing the deep learning algorithms required by LUPA. Additionally, Python's simplicity and readability make it an accessible language for developers, enabling cooperation and code maintenance throughout the project's lifecycle. Moreover, Python's active community support and vast online resources provide convenient aid, aligning with the evolving needs of the LUPA project. |

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| SOFTWARE TOOLS FOR TASK 2: Project Management Tools |
| Tool Cost/Training/Functionality Data   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Tool | A(Asana) | B(Jira) | C(GitHub Projects) | D(Microsoft Azure DevOps) | | Cost | $134.9 /mo | $81.5 /mo | $36.7 /mo | $50 /mo | | Training Days | 2 | 3 | 2 | 4 | | Functionality | 100 | 90 | 70 | 80 |   Normalized Cost/Training/Functionality Data   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Tool | A(Asana) | B(Jira) | C(GitHub Projects) | D(Microsoft Azure DevOps) | | Cost | $100/mo | $60.8 /mo | $27.3 /mo | $37.3 /mo | | Training Days | 50 | 75 | **50** | 100 | | Functionality | 100 | 90 | 70 | 80 |   Normalized Tool Graph |
| Which tool has been selected? Why?  Why do we choose Asana: Asana was chosen for, providing a comprehensive set of features for organizing and tracking project tasks, and enabling an effective collaboration among team members. It has an intuitive interface and user-friendly design which makes it easy to use and learn for project planning, task management, and team communication. Asana also offers customizable project templates and workflows, allowing for tailored implementation to meet the specific needs of the LUPA project. And because it can be integrated with other tools and platforms further, its utility and versatility are enhanced. |

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| SOFTWARE TOOLS FOR TASK 3: Database Management Tools |
| Tool Cost/Training/Functionality Data   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Tool | MySQL | PostgreSQL | MongoDB | SQLite | | Cost | $179/mo | $0/mo | $60/mo | $0/mo | | Training Days | 30 | 25 | 27 | 7 | | Functionality | 90 | 70 | 100 | 20 |   Normalized Cost/Training/Functionality Data   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Tool | MySQL | PostgreSQL | MongoDB | SQLite | | Cost | $100/mo | $0/mo | $33.5/mo | $0/mo | | Training Days | 100 | 83.3 | 90 | 23.3 | | Functionality | 90 | 70 | 100 | 20 |   Normalized Tool Graph |
| Which tool has been selected? Why?  Why do we choose MongoDB: The LUPA project interests in keeping various types of data, such as student information, course reviews, article weblinks, and personalized recommendations, MongoDB's scalability ensures that the database can grow with the project's requirements. MongoDB is known for its scalability, making it capable of handling large volumes of unstructured data efficiently. Furthermore, it has flexibility, deep learning integration capabilities, and strong community support is making MongoDB a suitable choice for powering the database backend of the LUPA application. |
| SOFTWARE TOOLS FOR TASK 4: Mobile Development Kit Tools |
| Tool Cost/Training/Functionality Data   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Tool | React Native | Flutter | Ionic | FlutterFlow | | Cost | $12500 /mo | $8333/mo | $4199/mo | $42/mo | | Training Days | 65 | 60 | 58 | 7 | | Functionality | 100 | 90 | 50 | 10 |   Normalized Cost/Training/Functionality Data   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Tool | React Native | Flutter | Ionic | FlutterFlow | | Cost | $100/mo | $66.6/mo | $33.6/mo | $0.34/mo | | Training Days | 100 | 92.3 | 89.2 | 10.7 | | Functionality | 100 | 90 | 50 | 10 |   Normalized Tool Graph |
| Which tool has been selected? Why?  Why do we choose Flutter: First React Native was thought but considering the cost and efficiency Flutter was decided to be a better option. Flutter stands out as a good option for developing the mobile application component of the LUPA project due to its cross-platform capabilities and performance. It has a hot reload feature which facilitates rapid development and debugging (which are very important for LUPA), and enhances productivity. With Flutter, developers can access a wide range of customizable UI components and benefit from active community support. The platform's ability to write code once and deploy it across multiple platforms assures general accessibility. Overall, Flutter offers an efficient and effective framework for building a feature-rich and user-friendly mobile application. |