# Assignment

## Total Points: 100

**Description:**

Company Helios is a new company with HQ in Austria operating Wind Farms in many countries in Europe. Helios has been established in 2015 and the management believes that it’s time to transform to a Data Driven company leveraging the knowledge could provide.

This this reason, Helios has established an AI, Analytics & Data Center of Excellence in Athens to support the organization with AI applications which operates with almost 150 employees mainly based in Athens but also remotely in other countries. Moreover, if the demand is high, they have an agreement with off-shore companies in India for ad-hoc manpower.

Your role in Helios is Project Manager and you have been assigned with a new project called “Predictive Maintenance”. The goal of this project is to create an application that utilizes different sources of data and provides an estimation for the probability of a potential failure in a device. In order this project to be approved by the investments committee, you need to prepare a cost estimation along with a high level time and resourcing plan.

In order to prepare your estimation, you have asked technical people in the team to provide you with the required information along with the steps in the process:

1. Data

The Data Lead of Helios informed you that the Data team needs 4-6 weeks to acquire the data from different sources, assess the quality and transform them in a way that another team can work with them. In terms of people, he would assign 2 Junior Data Engineers, 1 Senior Data Engineer half time and 10% of his time to oversee. However, they do not have capacity for Junior Data Engineers at this moment. Finally, they will need Cloud technology to manage the data.

1. AI Lead

The AI Lead of Helios informed you that the AI Team needs 8 weeks to assess the data received from the Data team, test various algorithms, run some prototypes and then operationalize the promoted algorithm. The team that would work on this should be 2 Junior AI Engineers, 1 Senior Data Scientist, 1 AI/MLOps Engineer at 80% across the 8 weeks. However, as they are not 100% sure about the progress, they may need to utilize 2 resources from India for 4 weeks. Definitely, he needs to oversee the development so expects the involvement in 20%-30% capacity. Finally, they will need Cloud technology to manage the data.

1. Systems Lead

Finally, the Systems Lead informed you that in order to create an application that manages the data and runs the algorithm requires 10 weeks of development that requires 2 IT Developers full time.

Below there is a table with the costs/day to be used for the cost analysis.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Data** | **AI** | **Systems** |
| Helios | Junior Data Engineer: 200€  Senior Data Engineer: 320€  Data Lead: 800€ | Junior AI engineer: 240€  Senior AI engineer: 350€  Junior Data Scientist: 250€  Senior Data Scientist: 380€  AI/MLOps: 380€  AI Architect: 330€  AI Lead: 800€ | IT Engineer: 400€  Systems Lead: 900€ |
| India | Junior Data Engineer: $120  Senior Data Engineer: $400 | Junior AI engineer: $200  Senior AI engineer: $300  Junior Data Scientist: $250  Senior Data Scientist: $380  AI/MLOps: $400  AI Architect: $500 | IT Engineer: $200 |

Cloud technology: $400/week

The investment committee has asked also two scenarios. One aggressive where the cost is not priority while the second should be more conservative.