**Explain the project's category in a few sentences (i.e., why it is a research/development project):**

The projects category is the research branch in the subject of deep learning model architecture. The subject is a novel way to produce professional floorplans without the need for an expensive professional architect. This is with an appropriate use of GAN – Generative Adversarial Network.

**Keywords (separated by commas):**

GAN, House floorplans, deep learning, image processing, Architecture, CNN, meta-optimization, iterative learning, RPLAN, Convolution

**General Description of the problem:**  
To make a professional floorplan design there is a need of the services of a professional architect with a lot of experience. The problem is as such as those architects are very expensive so that just 10% of the floorplan designed in North America with Professional Architects. The problem is computationally expensive and suggest an appropriate design tool.

**Main Tools that will be used for solving the problem:**

GAN, TENSORFLOW, Architecture design

**Planned working process during the first semester:**

First of all, we are going to study the algorithmic skills applicated in this area

The next step suggests an investigation of the GAN structure intended to deal with the problem and select the most appropriate within them. After, we suggest to construct and design a software system planned to implement the approach.

**Product of the work of the first semester:**

The book will provide in-depth background, including clear explanations of terms related to neural networks. We will give a thorough study of the methods proposed the article.

Our presentation will include a brief summary of the problem and provide solutions.

We will present the needed models and algorithms.