**Explore and Evaluate Models using Model Garden**

**Overview**

Model Garden on Vertex AI provides a single place to search, discover, and interact with a wide variety of models from Google and Google partners. Model Garden is available on Vertex AI and can be accessed from the Google Cloud console.

This lab provides a use case for you to explore Model Garden and then use Vertex AI Studio to create and experiment with prompts.

Objectives

In this lab, you explore the following:

* Model Garden on Vertex AI to find the appropriate model for your use case.
* Types of Vertex AI Model in the Model Garden.

Use case

You work for a real estate firm as a marketing analyst. Your company is interested in using large language models (LLMs) to return brief text descriptions of homes they are interested in and mortgage information.

You have been tasked with creating prompts that will summarize text from very long home descriptions on your real estate site. The home descriptions are stored in a file in a Google Cloud Storage bucket.

Begin by using Model Garden to explore available pre-built models to save time, and implement a solution as quickly as possible.

**Vertex AI**

Vertex AI is Google Cloud's unified artificial intelligence platform for managing machine learning and generative AI projects.

**Model Garden**

Model Garden on Vertex AI is a collection of pre-trained machine learning models and tools that are designed to simplify the process of building and deploying machine learning models.

These models could be in a wide variety of model types and sizes. Model Garden offers first-party models such as multimodal models from Google across vision, dialog, code generation, and code completion; or a wide variety of enterprise-ready open source models.

Model Garden also provides a variety of tools to help you use these models, including:

* **Model cards**: Model cards provide detailed information about each model, including its accuracy, performance, and training data.
* **Prompt design**: Prompt design allows you to interact with a model via a simple UI and tune the model with your own data.

One of the models available through Model Garden is the Cloud Natural Language API. The Cloud Natural Language API lets you extract entities from text, perform sentiment and syntactic analysis, and classify text into categories.

**Vertex AI Studio**

Vertex AI Studio is a Google Cloud console tool for rapidly prototyping and testing generative AI models. You can test sample prompts, design your own prompts, and customize foundation models to handle tasks that meet your application's needs. You can perform the following:

* Test models using prompt samples.
* Design and save your own prompts.
* Tune a foundation model.
* Convert between speech and text.

The model categories available in Model Garden are:

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| **Category** | **Description** |
| Foundation models | Pre-trained multitask large models that can be tuned or customized for specific tasks using AI Studio, Vertex AI API, and the Vertex AI SDK for Python. |
| Fine-tunable models | Models that you can fine-tune using a custom notebook or pipeline. |
| Task-specific solutions | Most of these pre-built models are ready to use. Many can be customized using your own data. |

Model cards are listed on the **Vertex AI Model Garden** page. Explore a Model card from each category. For example, explore the Task Sentiment analysis model, which inspects the provided text and identifies the prevailing emotional opinion within the text. This would be helpful to analyze the sentiment of Google reviews your real estate firm receives to keep track of your customer's happiness.