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Zadanie 1

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```
!pip install tensorflow-graphics
!pip install trimesh
```

```
[2] import numpy as np
    import tensorflow as tf
    import trimesh

    import tensorflow_graphics.geometry.transformation as tfg_transformation
    from tensorflow_graphics.notebooks import threejs_visualization
```

```
[14] # Download the mesh.
     # Courtesy of Keenan Crane www.cs.cmu.edu/~kmcrane/Projects/ModelRepository/.
     # !wget -N https://storage.googleapis.com/tensorflow-graphics/notebooks/index/cow.obj
     # Load the mesh.
     mesh = trimesh.load('kubek.obj', force='mesh')
     mesh = {"vertices": mesh.vertices, "faces": mesh.faces}
     # Visualize the original mesh.
     _ = threejs_visualization.triangular_mesh_renderer(mesh, width=400, height=400)
     # Set the axis and angle parameters.
     axis = np.array((0., 1., 0.))  # y axis.
     angle = np.array((np.pi / 6.,))  # 45 degree angle.
     # Rotate the mesh.
     mesh["vertices"] = tfg_transformation.axis_angle.rotate(mesh["vertices"], axis,
                                                             angle).numpy()
     # Visualize the rotated mesh.
     _ = threejs_visualization.triangular_mesh_renderer(mesh, width=400, height=400)
```

```
unable to load materials from: teamug.mtl
specified material (Material.001)  not loaded!
specified material (teamug)  not loaded!
```

Zadanie 2

TensorFlow Quantum jest biblioteką, którą stosuje się do hybrydowego kwantowego klkasycznego uczenia maszynowego. Zapewnia kwantowe prymitywy obliczeniowe kompatybilne z istniejącymi interfejsami API TensorFlow, a także wydajne symulatory obwodów kwantowych.

Przykładowy kod:

```
# A hybrid quantum-classical model.
model = tf.keras.Sequential([
    # Quantum circuit data comes in inside of tensors.
    tf.keras.Input(shape=(), dtype=tf.dtypes.string),

    # Parametrized Quantum Circuit (PQC) provides output
    # data from the input circuits run on a quantum computer.
    tfq.layers.PQC(my_circuit, [cirq.Z(q1), cirq.X(q0)]),

    # Output data from quantum computer passed through model.
    tf.keras.layers.Dense(50)
])
```