Detect and Mitigate Unfairness

Machine learning models can often encapsulate unintentional bias that results in unfairness. For example, a machine learning model that predicts whether or not a patient should be tested for diabetes may predict more accurately for some age groups than others, with the result that a subsection of the patient population is either deprived of appropriate preventative health checks or subjected to unnecessary clinical testing.

Before You start

If you have not already done so, complete the *Create an Azure Machine Learning Workspace* exercise to create an Azure Machine Learning workspace and compute instance, and clone the notebooks required for this exercise.

Open Jupyter

While you can use the **Notebooks** page in Azure Machine Learning studio to run notebooks, it's often more productive to use a more fully-featured notebook development environment like *Jupyter*.

1. In Azure Machine Learning studio, view the **Compute** page for your workspace; and on the **Compute Instances** tab, start your compute instance if it is not already running.
2. When the compute instance is running, click the **Jupyter** link to open the Jupyter home page in a new browser tab.

Use Fairlearn and Azure Machine Learning to detect unfairness

In this exercise, the code to evaluate models for fairness is provided in a notebook.

1. In the Jupyter home page, browse to the **Users/mslearn-dp100** folder where you cloned the notebook repository, and open the **Detect Unfairness** notebook.
2. Then read the notes in the notebook, running each code cell in turn.
3. When you have finished running the code in the notebook, on the **File** menu, click **Close and Halt** to close it and shut down its Python kernel. Then close all Jupyter browser tabs.

Clean-up

If you're finished working with Azure Machine Learning for now, in Azure Machine Learning studio, on the **Compute** page, on the **Compute Instances** tab, select your compute instance and click **Stop** to shut it down. Otherwise, leave it running for the next lab.