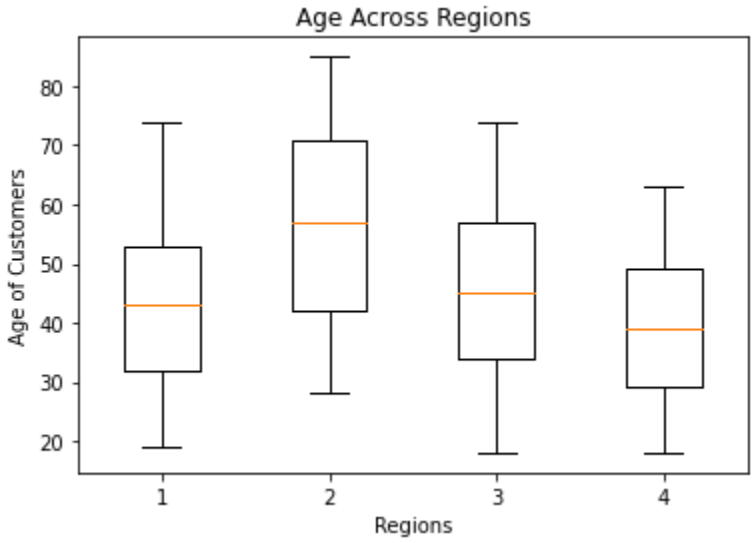
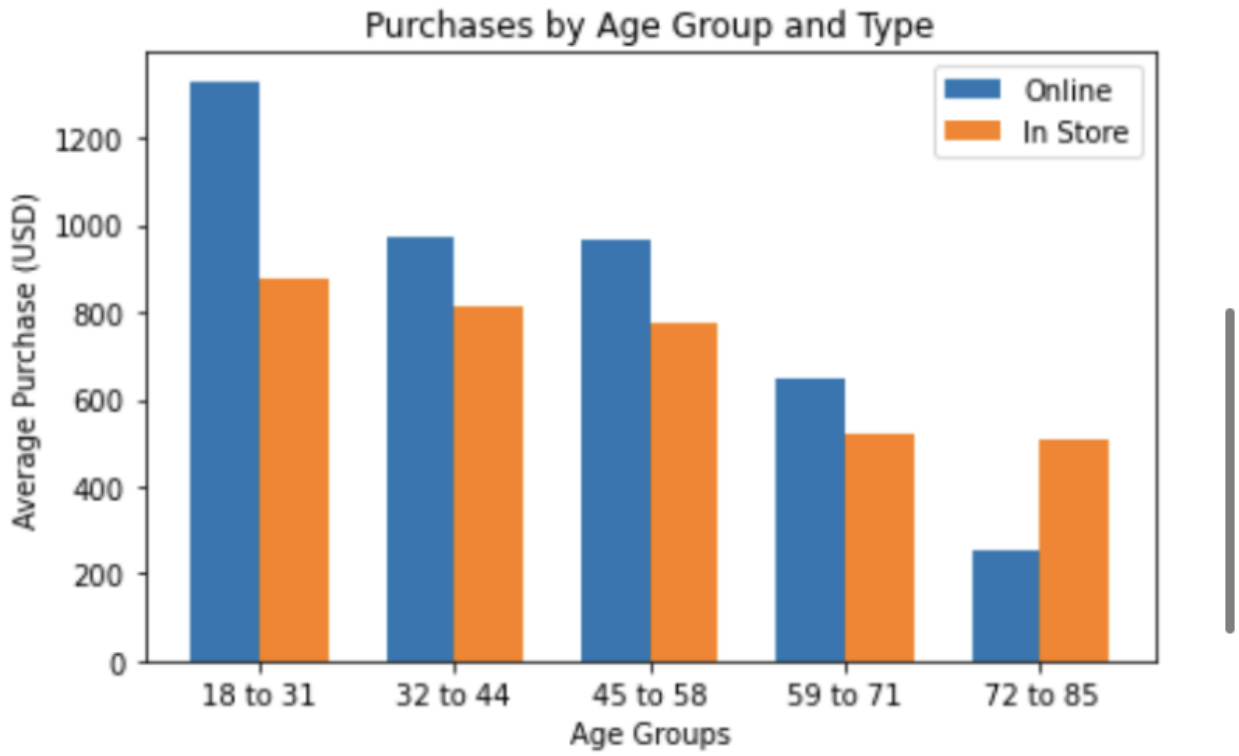
EDA Blackwell Electronics

The first order of business was to find out whether the ages of customers were different between regions. Putting the data through various machine learning algorithms did not produce a very accurate assessment of this question, however, it became evident that there was a definite difference in age between regions. As you can see in the graph below Region 2 is the oldest and Region 4 has the youngest purchasers. In order to determine whether or not you can predict age based upon region and other demographic data, we need to manipulate the data a bit. By splitting the ages into smaller groups of ages, we can start to see that we are able to make predictions using those data specifications, but the models are not very accurate unless you split the ages into 2 groups and still they are only 70% accurate. This should be relatively obvious because the machine learning algorithm only has to choose between 2 groups, which makes it much easier to predict as opposed to choosing between 5 groups.



I was unable to build a model that was able to accurately predict age without breaking the ages down into smaller groups.

There was also a definite relationship between age, whether a purchase was made online, or in-store. The graph below shows very clearly that younger people tend to make more purchases online than in-store. Age was such a good predictor that we were able to build models that were nearly 90 percent accurate using age and the other demographic data. In fact, when only using age and region, we were able to predict online or in-store about 80 percent of the time. Interestingly enough, people tend to spend more when shopping online as opposed to in-store.



To conclude, there were several different insights to be gained by doing this analysis. From what we found, their sales definitely are lagging to the older folks in region 3. The biggest spenders are the young people in region 4. There should definitely be good roi be creating different marketing campaigns for these groups.