Blue Nile is a diamond and engagement ring business focused on making it possible for consumers to shop for high-quality diamonds at great value. Blue Nile specializes in providing consumers with diamond buying tips and education guides, including the 4Cs of Diamonds, which is an educational guide to understanding the unique characteristics of stones as they relate to their Cut, Color, Clarity, and Carat Weight, to help consumers choose the perfect wedding band.

Blue Nile asserts multiple claims on their website and provides an analysis of diamond characteristics (Cut, Clarity, Color, and Carat Weight) in comparison to price to educate its consumers and assist them with selecting the best wedding band. Our goal was to test the accuracy of each of Blue Nile’s claims and provide supporting evidence using Blue Nile’s inventory of diamonds and their recorded characteristics.

In researching the claims for the Cut characteristic of diamonds, Blue Nile asserts that a diamond’s cut is the most important factor to consider compared to Color, Clarity, and Carat. Therefore, consumers should spend most of their money on selecting the best cut grade, the Astor Ideal cut. Our analysis supports Blue Nile’s claim that Ideal cuts, in general, dominate the upper price range of their inventory of diamonds and confirms that cut is a significant factor in price influence, as illustrated in *Figure 1: Cut vs. Price*.

According to the Gemological Institute of America (GIA) color scale, the industry standard for diamond color grades ranges from D (i.e.: the most colorless diamond) to Z (i.e.: a light yellow or brown diamond). While Blue Nile does not offer the L-Z color grades, they assert that diamond prices will decrease in alphabetical order. Our analysis supports Blue Nile’s claim, as colors D, E, F, G, H, I, and J are listed on the website and in the dataset as the most to least expensive in alphabetical order (see *Figure 3: Color versus Price*).

A diamond’s clarity is the assessment of non-visible and visible (i.e.: “eye-clean”) imperfections on the surface and within a diamond. Blue Nile claims that Clarity is the least important characteristic since imperfections are not usually seen with the naked eye. However, Blue Nile acknowledges that fewer and more minor scratches on a diamond will receive the highest clarity grades, such as VS, VVS, IF, and FL, and are more expensive. Blue Nile recommends that a consumer should select a clarity grade that is not too expensive, such as the FL and IF diamond clarities, and should select a diamond with inclusions that cannot be seen with the naked eye, such as the VS (Very Slightly Included) and SI (Slightly Included) diamonds. In our analysis of Clarity versus Price, Blue Nile’s claim that diamond imperfections are the least important is supported in *Figure 5: Frequency of Diamond Clarity Grade* because consumers prefer the VS and SI clarity grades over the more expensive imperfection-free clarity grades IF and FL. Additionally, *Figure 2: Clarity versus Price* supports the idea that the higher clarity grades are generally more expensive.

According to Blue Nile, consumers should buy below half and whole-carat values to save significant money, as other people will never notice a diamond’s slight difference in weight. Our analysis of Blue Nile’s claim is supported because there is a higher frequency of diamond rings sold for the Ideal cut, suggesting its popularity among consumers and that the cut of a diamond versus its weight is more important, as illustrated in *Figure 4: Cut added for more context*.

As shown in Figure 4, we categorized a diamond’s carat weight by creating a low and high variable for weight. Blue Nile claims that the price per carat of diamonds is a better deal if you buy half and below whole carat values; for example, buying 1.9 carats instead of 2 carats is a better value. However, the data does not support their claim. Our analysis concluded that comparing the low diamond weight with price is the same as comparing the high carat weight with price. In other words, low and high-carat weights are highly correlated with the price of a diamond. The supporting evidence of our analysis is determined by the R-squared value, which indicates how well the data fits our model. In simple linear regression, a statistical method for understanding the relationship between two variables, such as price and carat, R-squared denotes the proportion of variance in the response variable, price, explained by the predictor, carat. In other words, R-squared values closer to 1 indicate a strong relationship, while values closer to 0 indicate a poor relationship between price and carat. Our analysis revealed an R-square of 0.9547, suggesting a strong relationship between price and carat.