### Question 6

* **Which are the top and bottom states in terms of salary and what changes when we consider adjusted wage.**

Here we will look at the top 5 states median wage and see how much the wages change when taking into consideration the cost of living in these countries.

Top 5 states:

| Top 5 States | Paid Wage | Adjusted Wage |
| --- | --- | --- |
| California | 105000.0 | 73839.66 |
| Washington | 102000.0 | 91397.85 |
| Massachusetts | 85000.0 | 62962.96 |
| New York | 85000.0 | 57354.93 |
| Oregon | 82846.0 | 63678.71 |

Bottom 5 sates

| Bottom 5 States | Paid Wage | Adjusted Wage |
| --- | --- | --- |
| Arkansas | 63001.5 | 69308.58 |
| Oklahoma | 60840.0 | 69215.02 |
| Montana | 60000.0 | 59582.92 |
| Wyoming | 58205.0 | 61723.22 |
| West Virginia | 55000.0 | 60773.48 |

Then we can look at the updated list of top and bottom states which is:  
  
5 top:

| Top 5 States | Adjusted Wage | Bottom 5 States | Adjusted Wage |
| --- | --- | --- | --- |
| Washington | 91397.85 | Rhode Island | 59726.96 |
| Mississippi | 82232.89 | Montana | 59582.92 |
| Utah | 80531.31 | New York | 57354.93 |
| Kansas | 78612.72 | Alaska | 52731.71 |
| Tennessee | 78292.13 | Hawaii | 36646.66 |

* **If we look at job subtitles, how does salary change for top and bottom 5 considering the cost of living?**

When examining job subtitles, we can observe significant changes in salaries based on the cost of living in the top and bottom five states. The top five states, which have the highest median salary, show a considerable decrease in wages after accounting for the cost of living. Conversely, the bottom five states, with the lowest median salary, exhibit a substantial increase in wages after adjusting for the cost of living, except for Montana and for management consultants in Oklahoma.

It’s worth noting that, in the graph depicting the top states, the adjusted wage falls below $50,000 for most business and data analysts, while these job titles in the bottom states remain above $50,000.

The states with the most significant decrease in adjusted wages experience a decrease of approximately $40,000 to $50,000. However, not all job sub-titles exhibit an increase in adjusted wages; only business analysts and software engineers appear in all the states. The adjusted wage for business analysts indicates that low cost-of-living states provide better compensation than high cost-of-living states. Conversely, software engineers’ paid wages show that they receive better compensation in high cost-of-living states, while adjusted wages demonstrate that they are compensated similarly across the board.

## State Job\_Title\_Sub Median\_Adjusted\_Wage Med\_Paid\_Wage  
## 1 California business analyst 49226.44 70000.0  
## 2 California data analyst 52774.96 75046.0  
## 3 California data scientist 84247.54 119800.0  
## 4 California management consultant 68527.43 97446.0  
## 5 California software engineer 74523.56 105972.5  
## 6 Massachusetts business analyst 49629.63 67000.0  
## 7 Massachusetts data analyst 48148.15 65000.0  
## 8 Massachusetts data scientist 75925.93 102500.0  
## 9 Massachusetts management consultant 71851.85 97000.0  
## 10 Massachusetts software engineer 65697.04 88691.0  
## 11 New York business analyst 46556.68 68997.0  
## 12 New York data analyst 43859.65 65000.0  
## 13 New York data scientist 70850.20 105000.0  
## 14 New York management consultant 80968.42 119995.2  
## 15 New York software engineer 63172.06 93621.0  
## 16 Oregon business analyst 52759.42 68640.0  
## 17 Oregon data analyst 49225.98 64043.0  
## 18 Oregon data scientist 80573.79 104826.5  
## 19 Oregon management consultant 41568.02 54080.0  
## 20 Oregon software engineer 63678.71 82846.0  
## 21 Washington business analyst 67204.30 75000.0  
## 22 Washington data analyst 61827.96 69000.0  
## 23 Washington data scientist 103046.59 115000.0  
## 24 Washington management consultant 96774.19 108000.0  
## 25 Washington software engineer 94086.02 105000.0

## State Job\_Title\_Sub Med\_Adjusted\_Wage Med\_Paid\_Wage  
## 1 Arkansas business analyst 66006.60 60000.0  
## 2 Arkansas data analyst 60506.05 55000.0  
## 3 Arkansas data scientist 85258.53 77500.0  
## 4 Arkansas management consultant 56655.67 51500.0  
## 5 Arkansas software engineer 71507.15 65000.0  
## 6 Montana business analyst 84409.14 85000.0  
## 7 Montana software engineer 59582.92 60000.0  
## 8 Oklahoma business analyst 73947.67 65000.0  
## 9 Oklahoma data analyst 64732.65 56900.0  
## 10 Oklahoma management consultant 161373.72 141847.5  
## 11 Oklahoma software engineer 68812.29 60486.0  
## 12 West Virginia business analyst 60356.91 54623.0  
## 13 West Virginia software engineer 63535.91 57500.0  
## 14 Wyoming business analyst 85896.08 81000.0  
## 15 Wyoming software engineer 58324.50 55000.0

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