Subproject 1

Data Mining

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SF Salaries

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| BI Insights |
| Are public servants for essential services working more overtime?  Public employees that is essential to the smooth operation of a city occupies a significant portion of the overtime pay. With the transit operator and firefighter to be the top two, followed by police officer.    We can look at the instance (count) of actual overtime pay between these professions.   |  |  | | --- | --- | | JobTitle | TRANSIT OPERATOR | |  |  | | **Count of OvertimePay** |  | | 9424 |  |  |  |  | | --- | --- | | JobTitle | Police Officer | |  |  | | **Count of OvertimePay** |  | | 1476 |  |   Police officer and Transit operator being some of the most common professions to be paid to work overtime. In comparison, a common profession like a junior clerk have far less occurrences of a paid overtime.   |  |  | | --- | --- | | JobTitle | JUNIOR CLERK | |  |  | | **Count of OvertimePay** |  | | 755 |  | |

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| Excel Insights |
| How has pay change over the years? We want to find if the apparent increase of the salary is significant.   |  |  |  |  | | --- | --- | --- | --- | | **Row Labels** | **Average of BasePay** | **Average of OvertimePay** | **Average of OtherPay** | | 2011 | 63595.95652 | 4531.065429 | 3617.081926 | | 2012 | 65436.40686 | 5023.417824 | 3653.437583 | | 2013 | 69630.03022 | 5281.64198 | 3819.969007 | | 2014 | 66564.42192 | 5401.993737 | 3505.421251 |   Using t-Test (unequal variance): Two Sample for Means, we examined total salary from 2011 and 2014 to see if there are any significant difference over 4 years. We found that there is a significant probable difference between the year 2011 and 2014 in terms of salary.   |  |  |  | | --- | --- | --- | | t-Test: Two-Sample Assuming Unequal Variances | |  | |  |  |  | |  | *Variable 1* | *Variable 2* | | Mean | 71678.18572 | 75335.15144 | | Variance | 2249389889 | 2668368509 | | Observations | 33962 | 35712 | | Hypothesized Mean Difference | 0 |  | | df | 69586 |  | | t Stat | -9.740602164 |  | | P(T<=t) one-tail | 1.04569E-22 |  | | t Critical one-tail | 1.644875525 |  | | P(T<=t) two-tail | 2.09139E-22 |  | | t Critical two-tail | 1.959998076 |  | |

Top paying first

BY AVERAGE FROM 2011 & 2014

Overall pay increase

We can see that there is a clear pay increase as well.

Top paying increase

FROM THAT DATA WE CAN SEE THAT top paying jobs from 2011 to 2014 increased by 50k on average.

Top paying information expanded

Snip tool

Jobtitle investment, only guy yearly, if you are highly paid, then you might have the word invrestment in your job title.

SELECT DISTINCT

JOBTITLE,

AVG(TOTALPAYBENEFITS) AS TPB

FROM SALARIES

WHERE

YEAR = 2014

GROUP BY JOBTITLE

ORDER BY TPB DESC

SELECT

EMPLOYEENAME,

JOBTITLE,

YEAR,

AVG(TOTALPAYBENEFITS) AS TPB

FROM SALARIES

WHERE

--YEAR = 2014

JOBTITLE LIKE '%Investment%'

GROUP BY JOBTITLE, EMPLOYEENAME, YEAR

ORDER BY TPB DESC

An hourly rate of $12.25 equates to a weekly pay of $490, monthly pay of $2,123, and an annual salary of $25,480.

RANGE WE CHOSE TO USE 50% UP AND BELOW

12740

38220

Narrow until we got around 10 job titles close to the average.

2011

Accountant Intern 29031

Assistant Recreation Director 29442

Beatician 31301

Clerk 28968

Crafts Instructor 31213

Home Health Aid 28066

Museum Guard 29352

Museum Preparator 25896

Recreation Specialist 31016

Sheriff’s Cadet 29312

Assistant Recreation Director 2014 7801.73

Museum Preparator 2014 29636.6727777778

Accountant Intern 2014 32406.7754545454

Museum Guard 2014 42265.9986666667

Sheriff's Cadet 2014 45913.4805128205

Recreation Specialist 2014 53355.6933333333

Crafts Instructor 2014 53383.15125

Clerk 2014 55279.9151865672

Home Health Aide 2014 57535.9786956522

Beautician 2014 70411.485

Overtime shows who worked the hardest