

# **Estimation and Prediction of Hospitalization and Medical Care Costs**

## **INTRODUCTION**

### **Overview:**

Medical costs are one of the most common recurring expenses in a person's life. Based on different research studies, BMI, ageing, smoking, and other factors are all related to greater personal medical care costs.

The estimates of the expenditures of health care related to obesity are needed to help create cost-effective obesity prevention strategies. Obesity prevention at Young age is a top concern in global health, clinical practice, and public health.

### **Purpose:**

The main objective of cost accounting are ascertainment of cost, fixation of Selling price, proper recording and presentation of cost data to management for measuring Efficiency and for cost control and cost reduction, ascertaining the profit of each activity, Assisting management in decision making process.

## **Literature Survey**

### **Existing Problems in Medical Care:**

1. The High Cost of Health Care.
2. The Concerns of Health Equity.
3. The Promise (and Pitfalls) of Technology.

4. The Move toward Value-Based Care.

5. The Growing Provider Shortage.

## **Proposed Solution For Medical Care Cost:**

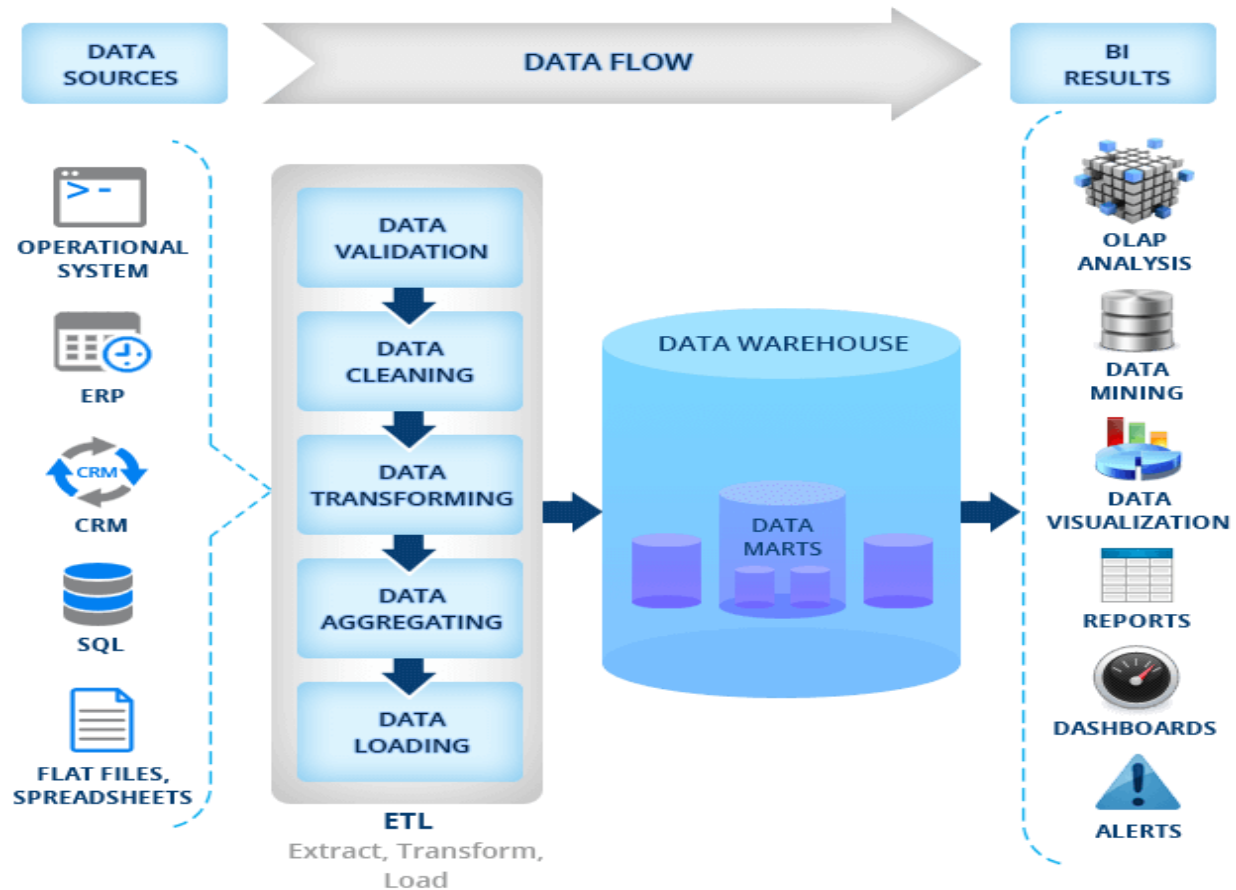
The following are some solutions in medical care costs

1. Expand Insurance to Cover Health Care Costs.
2. Extend TELE health Services.
3. Invest in Mobile Clinics.
4. Educate The Public About Multiple Health Care Sites.
5. Improve Cultural Responsiveness.

## **THEORITICAL ANALYSIS:**

The self-service capabilities of this platform allow users to build their own dashboards, Reports and scorecards in a simple, intuitive and secure way. It also **provides ease of use for Advanced data analysis.**

## **Block Diagram**



## Hardware & Software Designing

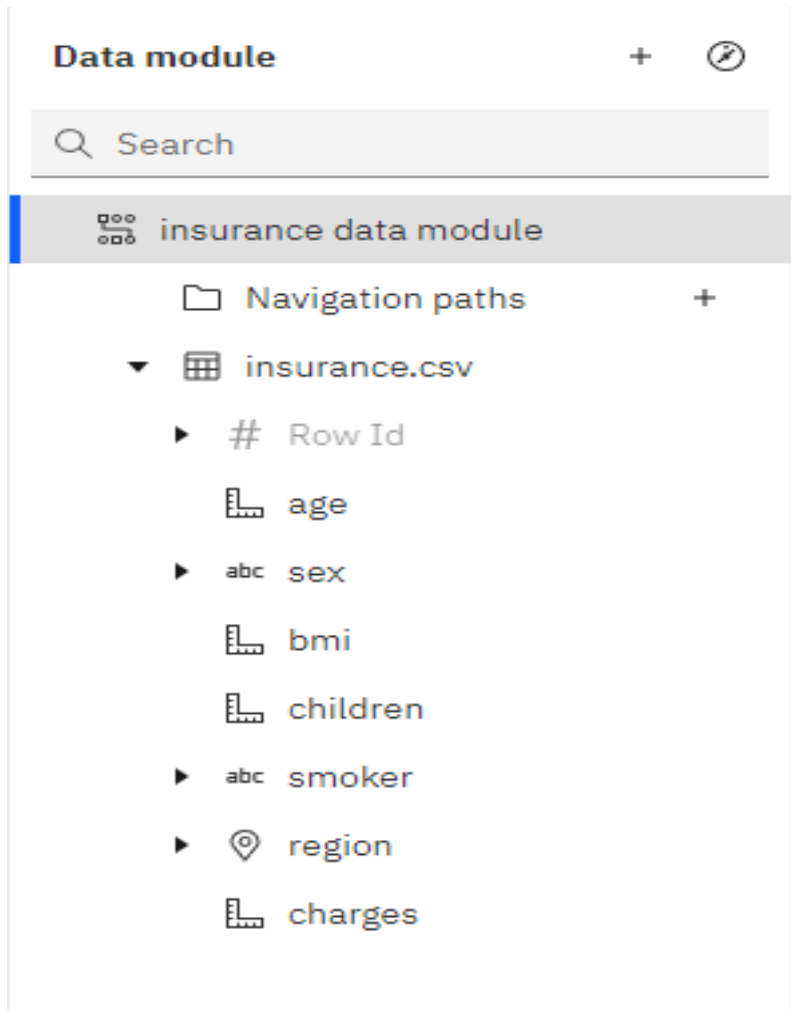
### Hardware Requirements:

- 11th Generation Intel® Core™ i5 processor
- 35.6 cm (14) diagonal Bright view 1920X1080 & ® X<sup>e</sup> Graphics
- 512 GB SSD Hard drive
- 8 GB DDR4-3200 MHz RAM

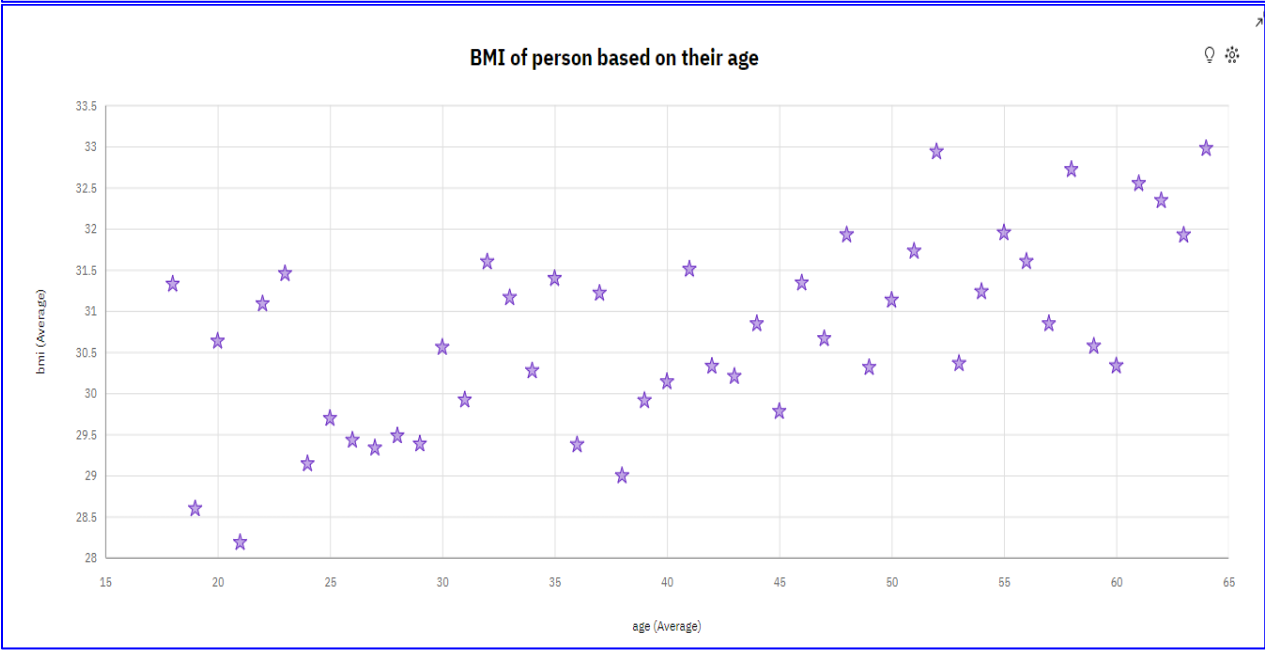
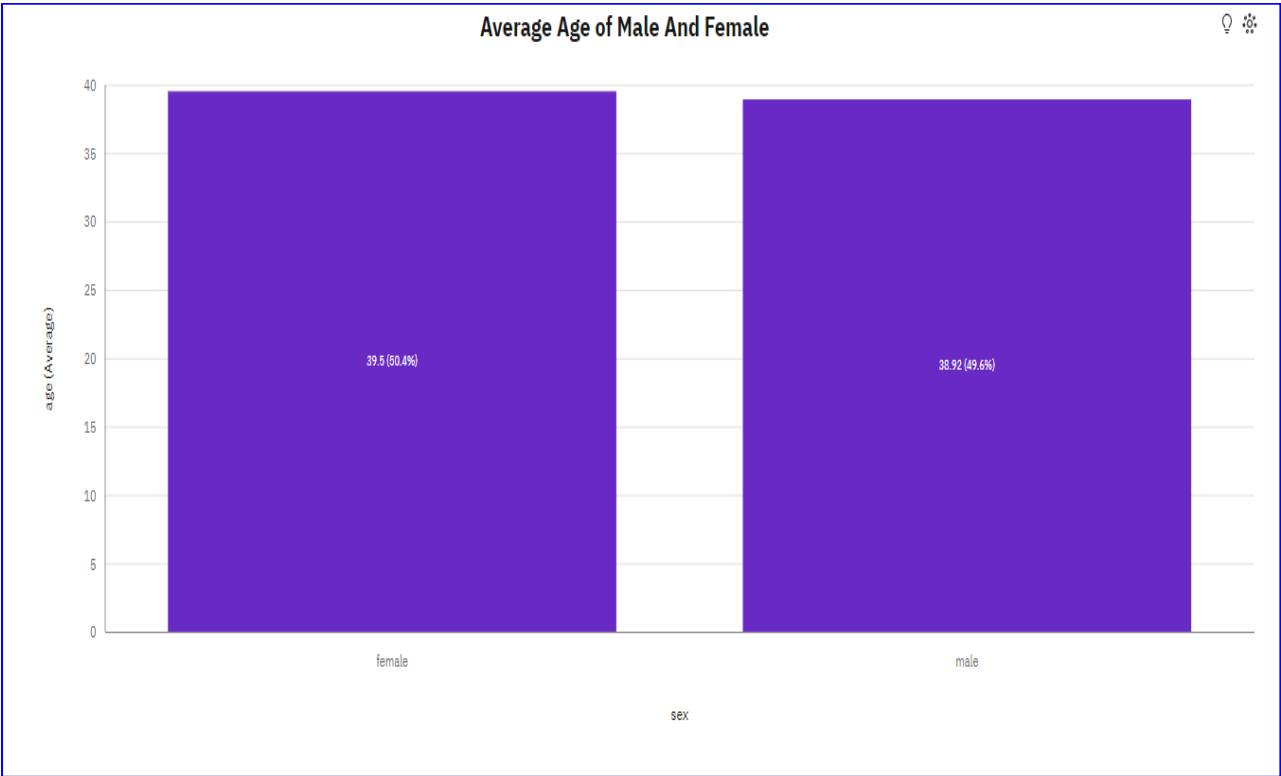
### Software Requirements:

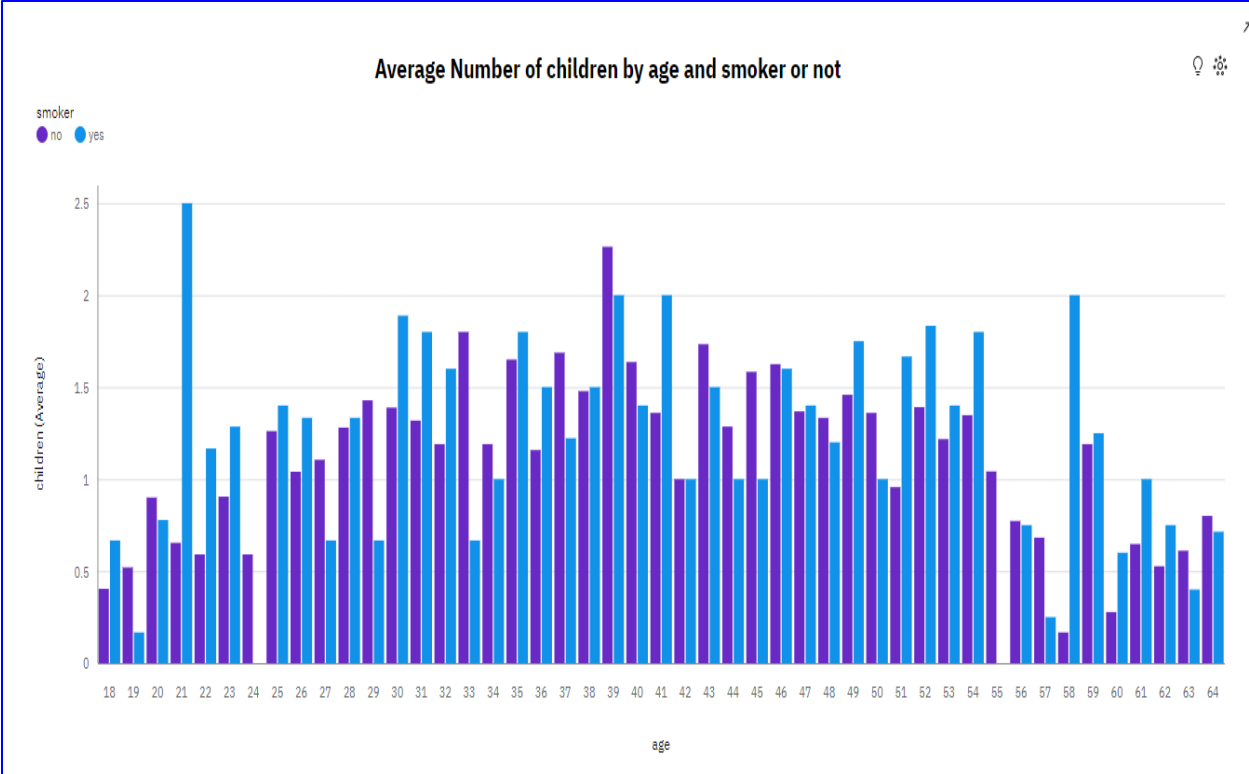
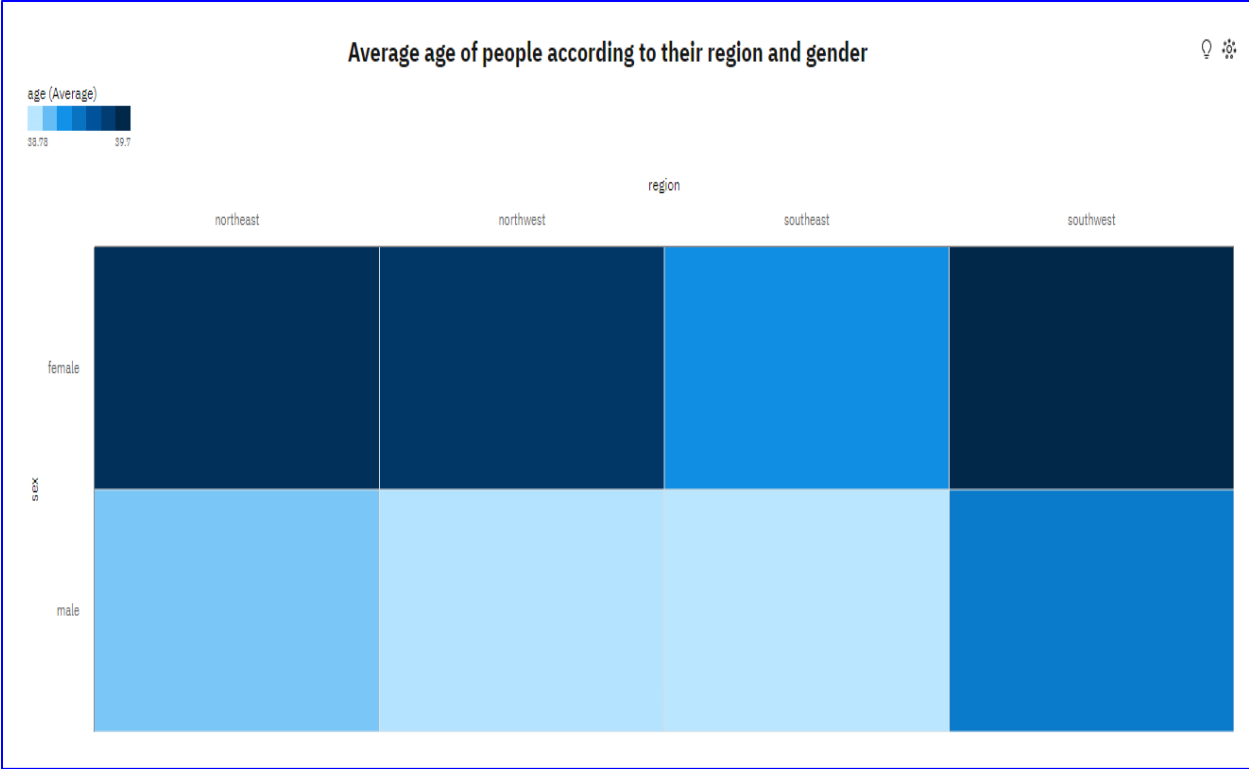
- Anaconda Navigator
- Python, Spider
- IBM COGNOS
- MS Word

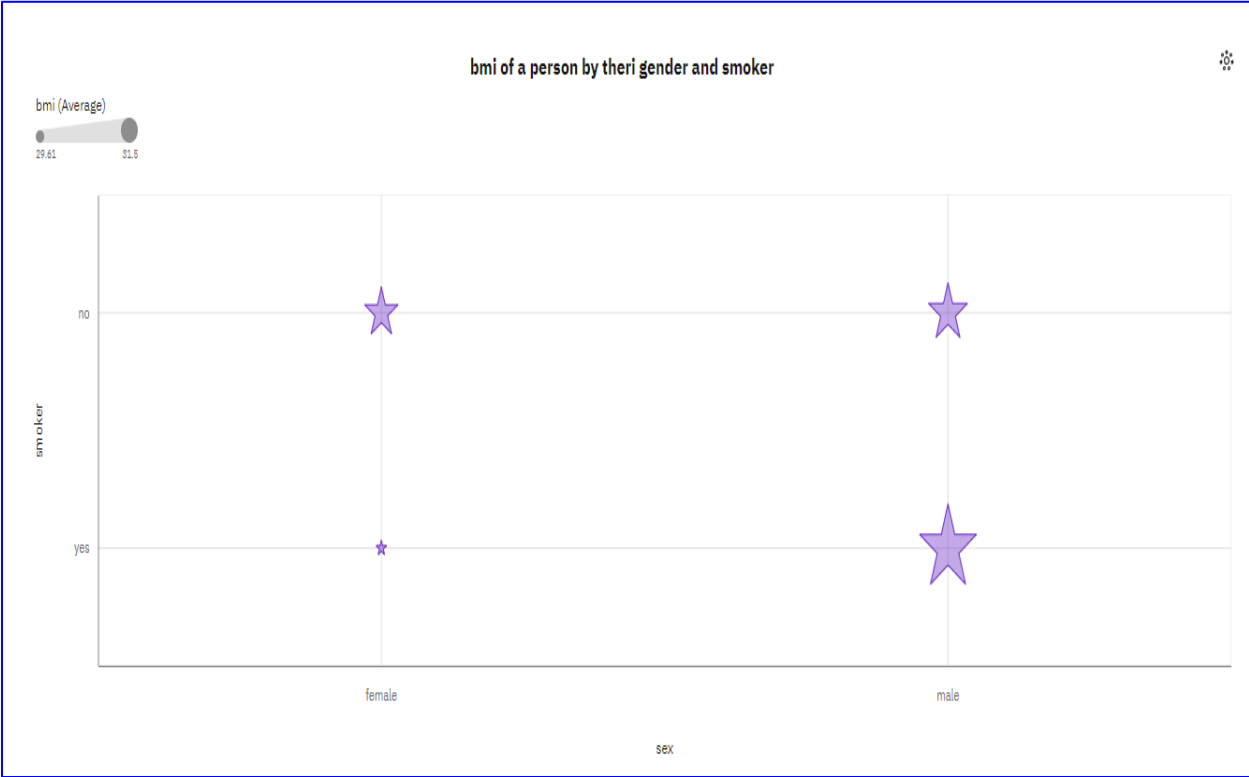
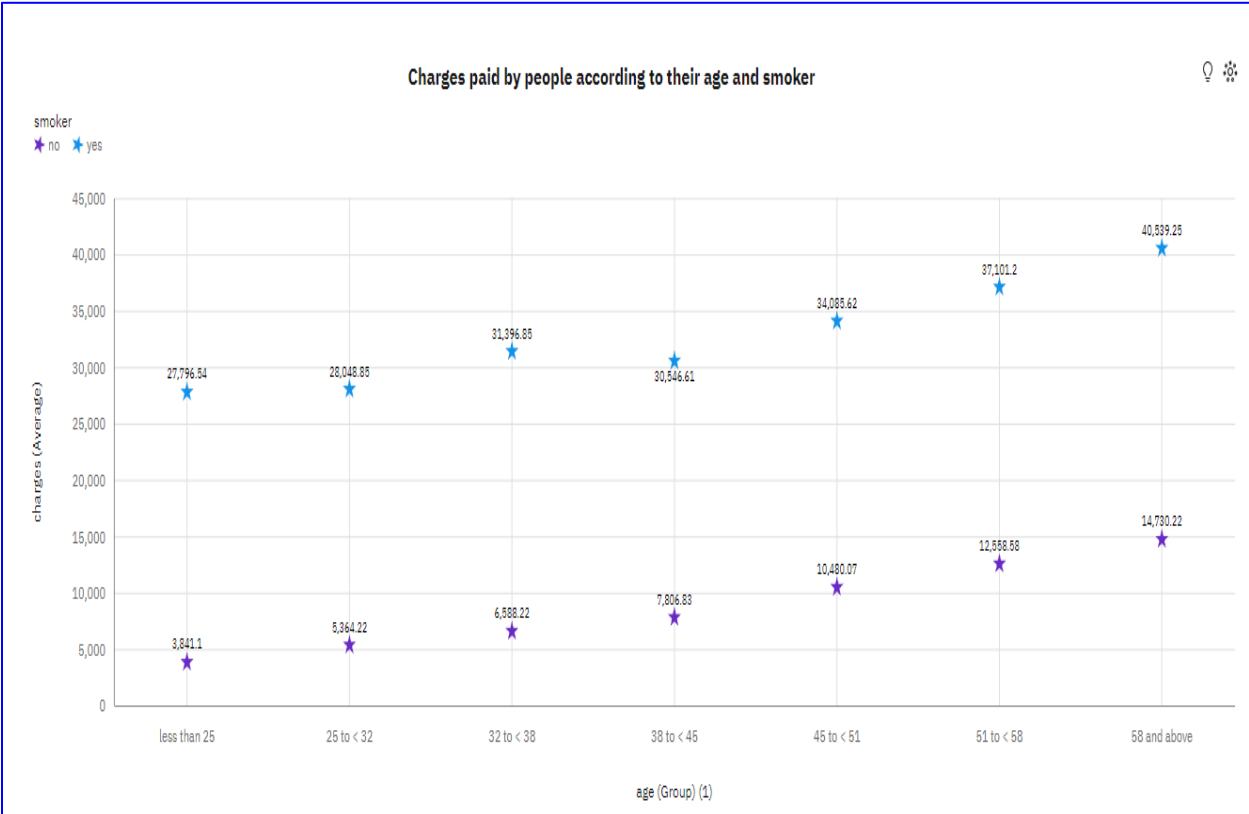
## RESULT:



## Dashboard

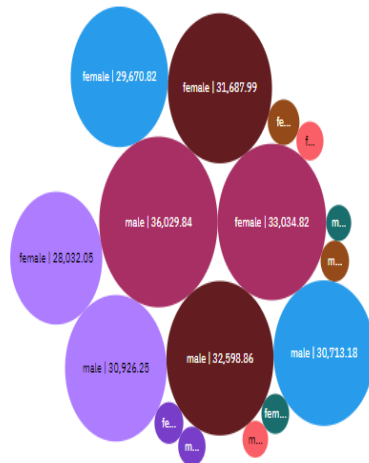






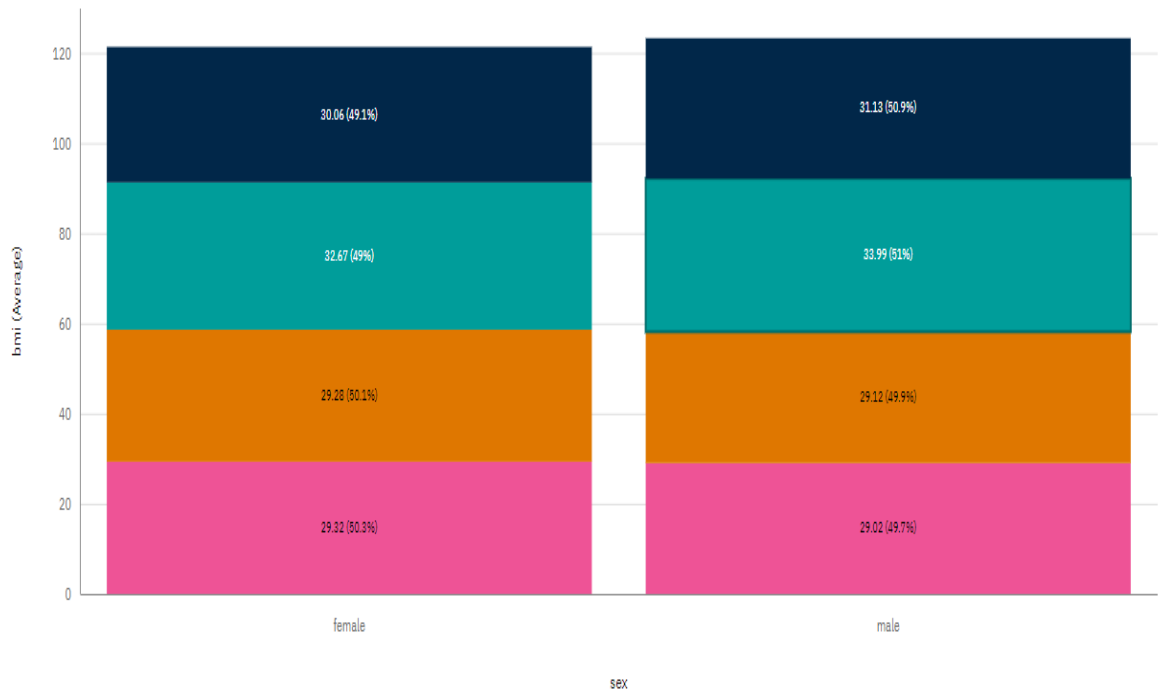
charges paid by people according to their gender ,region and smoker

charges (Average) region - smoker  
7,609 36,029.84  
northeast | no northeast | yes northwest | no northwest | yes southeast | no southeast | yes southwest | no southwest | yes

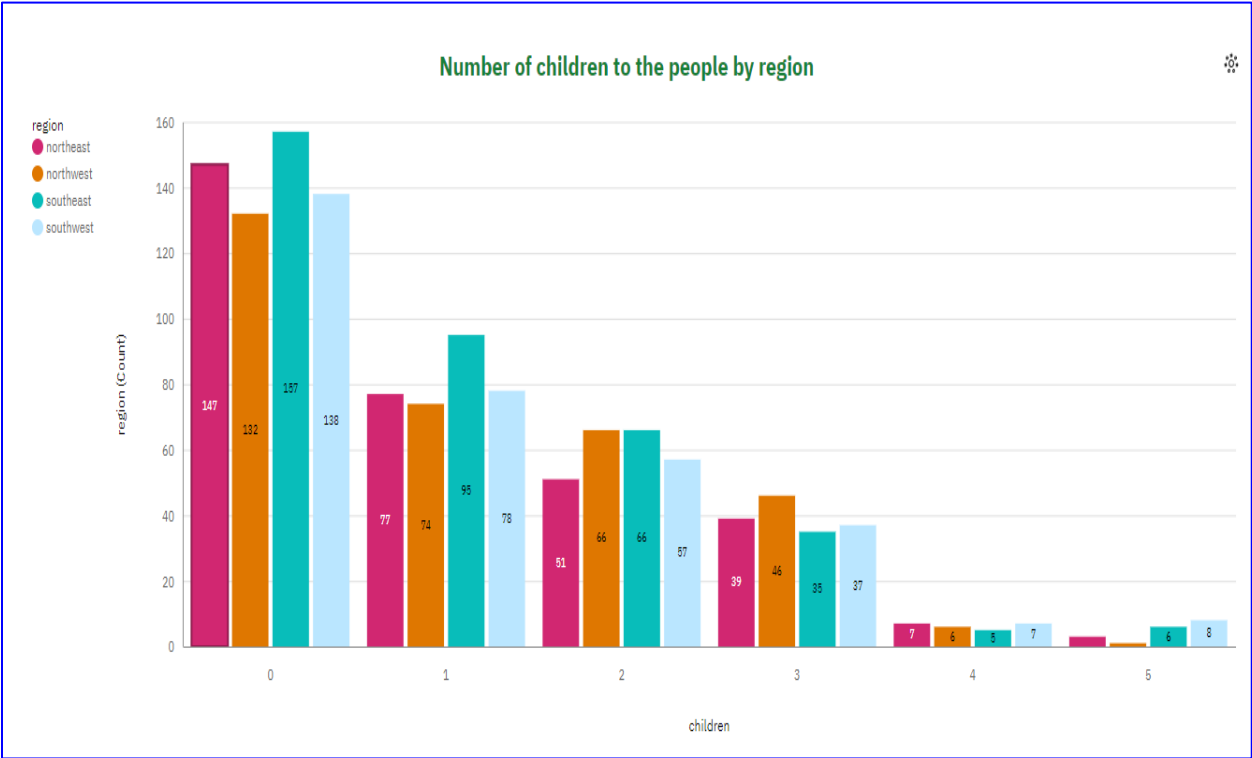
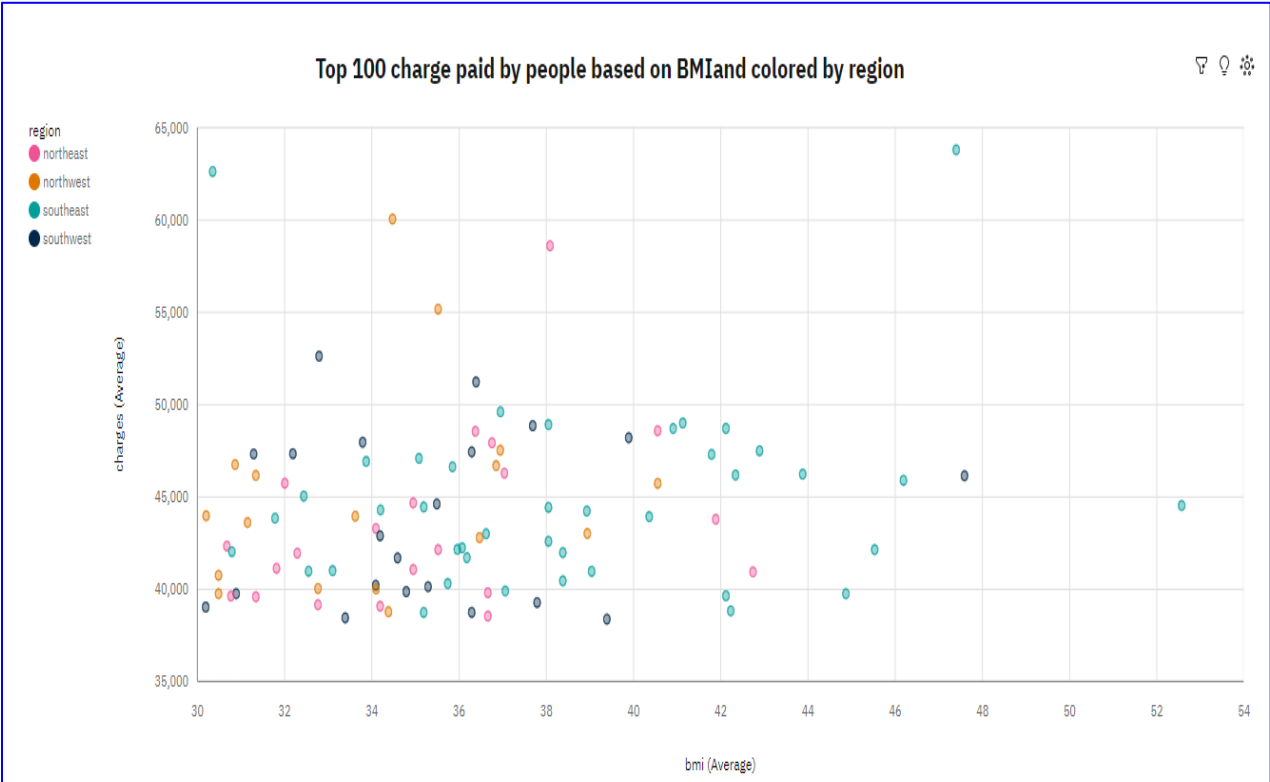


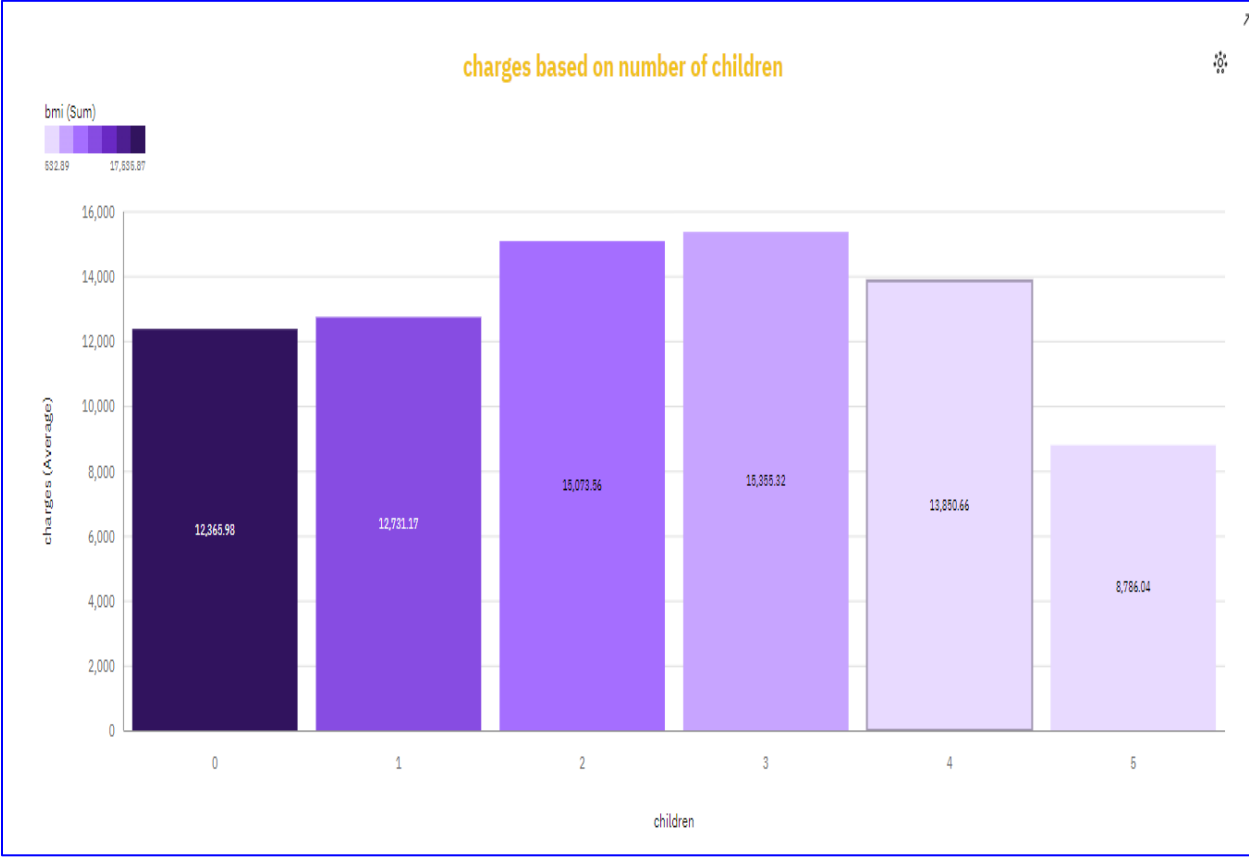
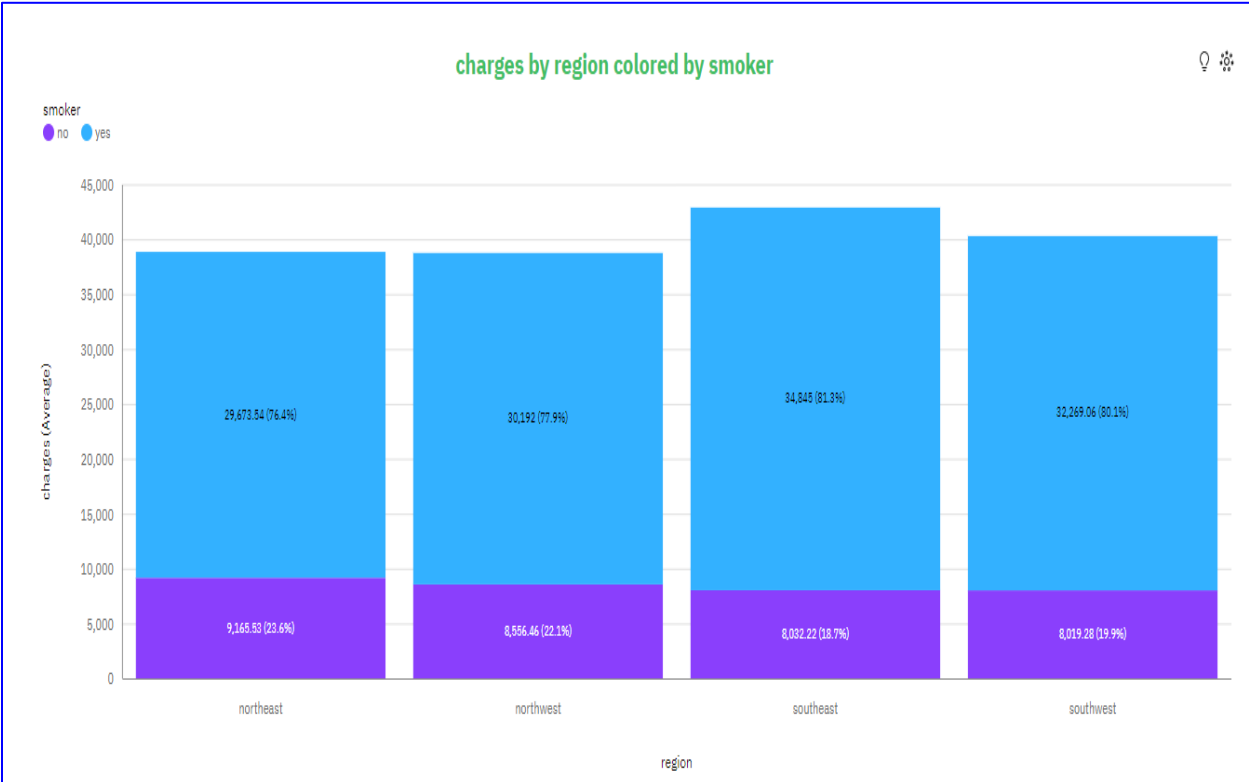
average BMI of people gender and region

region  
northeast  
northwest  
southeast  
southwest



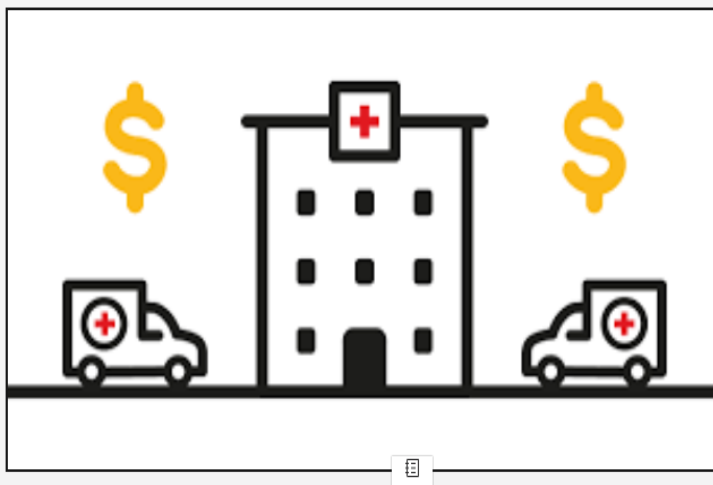






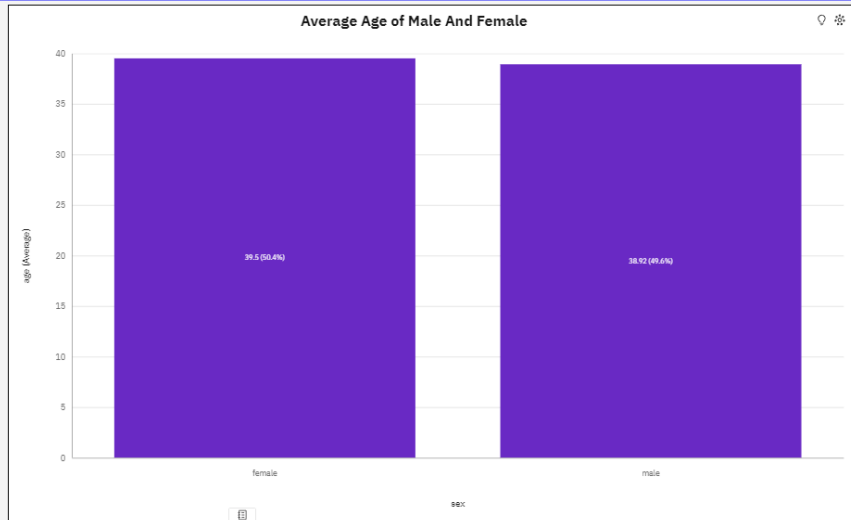
# Story

## Medical Care Costs Story



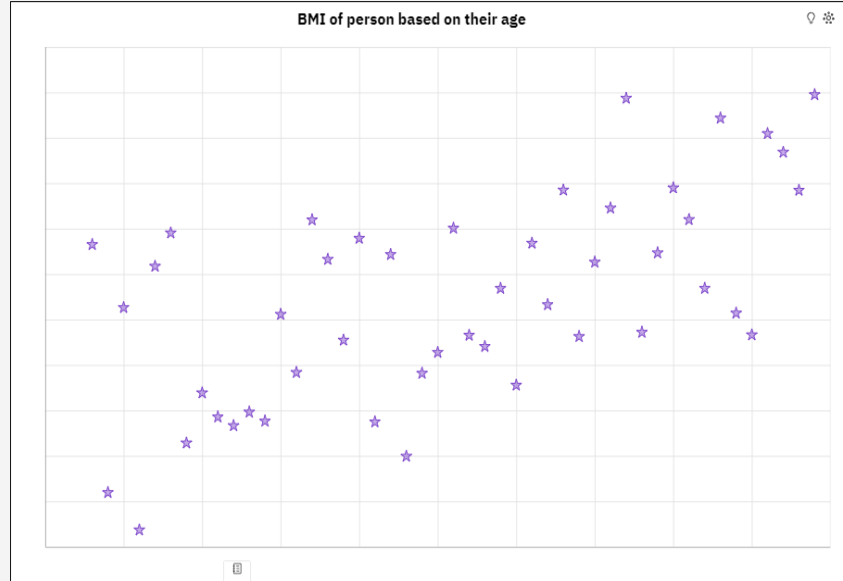
## Medical Care Costs Story

This graph mainly represents the average age of males and females and as we the female average is higher.  
The average age of females is higher despite having a little bit less number of females in the overall dataset



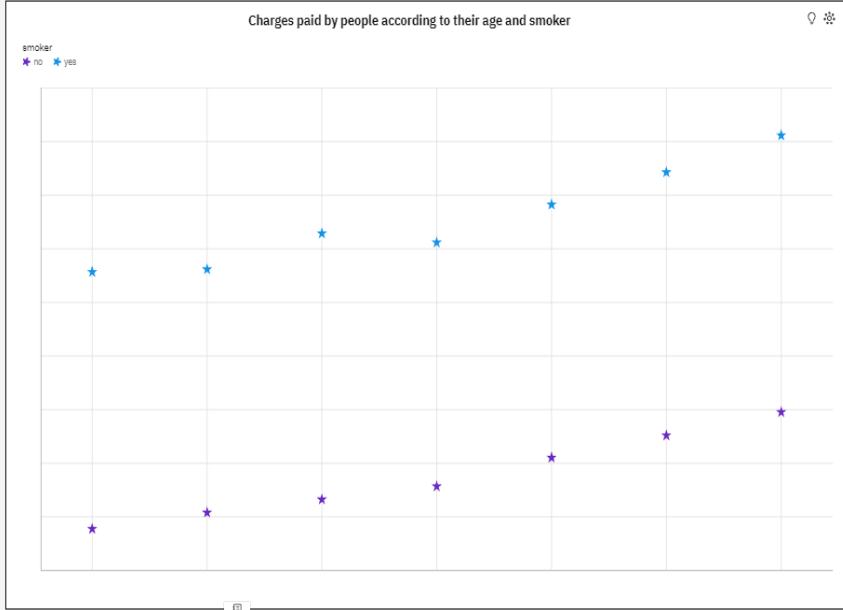
# Medical Care Costs Story

- As age is increasing the average BMI of persons also increases this means BMI and age linearly proportional.
- The maximum value of BMI by is like in middle age group it's little bit higher but as age increases the BMI value is getting decreased.



# Medical Care Costs Story

- Smokers of ed as the any age are paying more than non-smokers, the value is also almost 3 to 5x higher
- Charges are getting increased as the age is also increasing in both scenarios.



# Medical Care Costs Story

- Males and smokers have the highest average BMI value compared to all.
- Females and smokers have the less average BMI values compared to all.
- In case non smokers irrespective of gender their average BMI is almost similar.

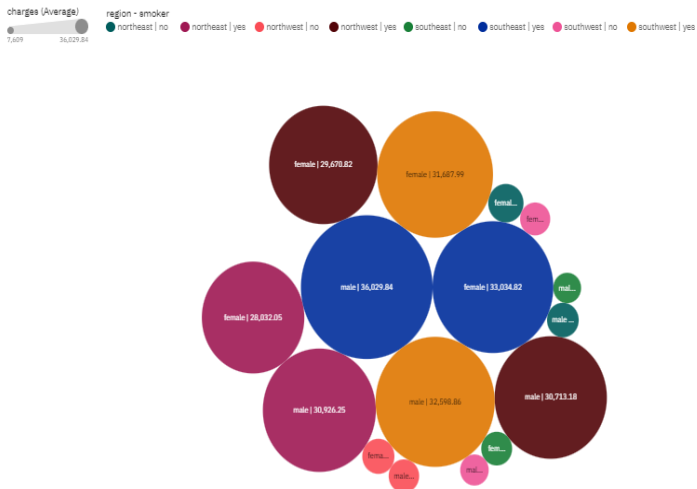
bmi of a person by their gender and smoker



# Medical Care Costs Story

- Southeast region people, both men and women are paying more charges compared to other regions.
- South-east region smokers are the ones who are paying more charges.
- Out of all as we have seen smokers tend to pay more irrespective of region.

charges paid by people according to their gender, region and smoker



# Report

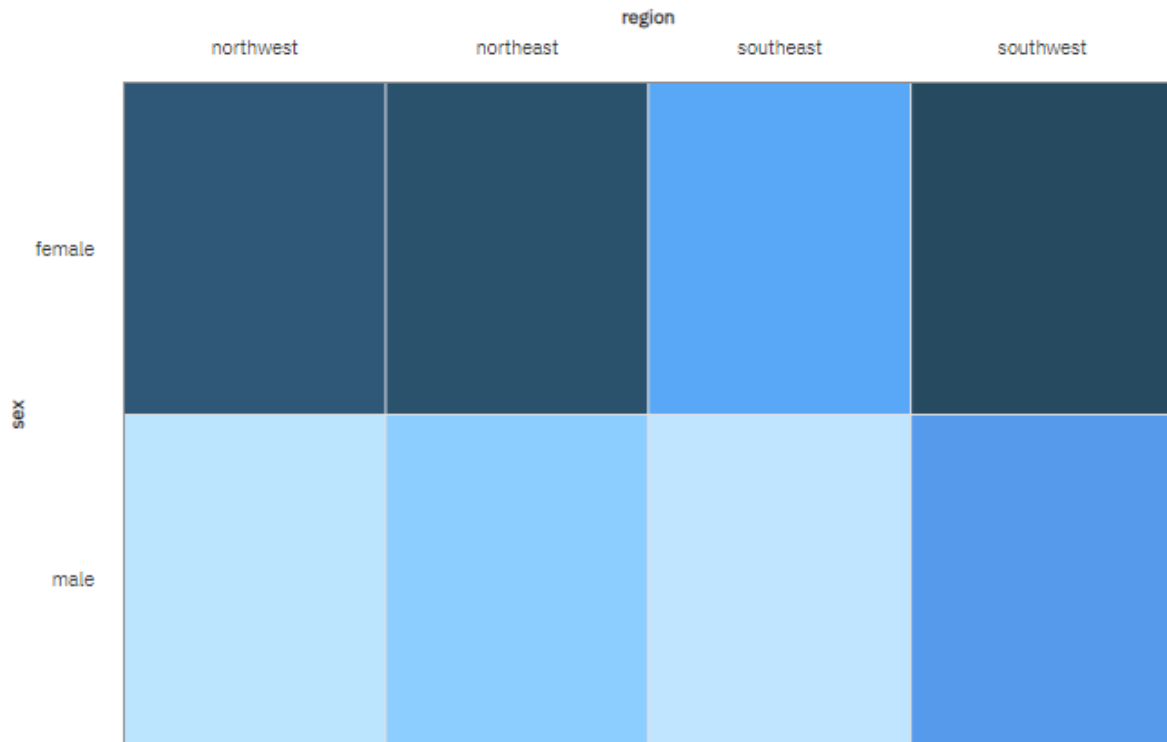
## Medical\_Care\_Costs\_report

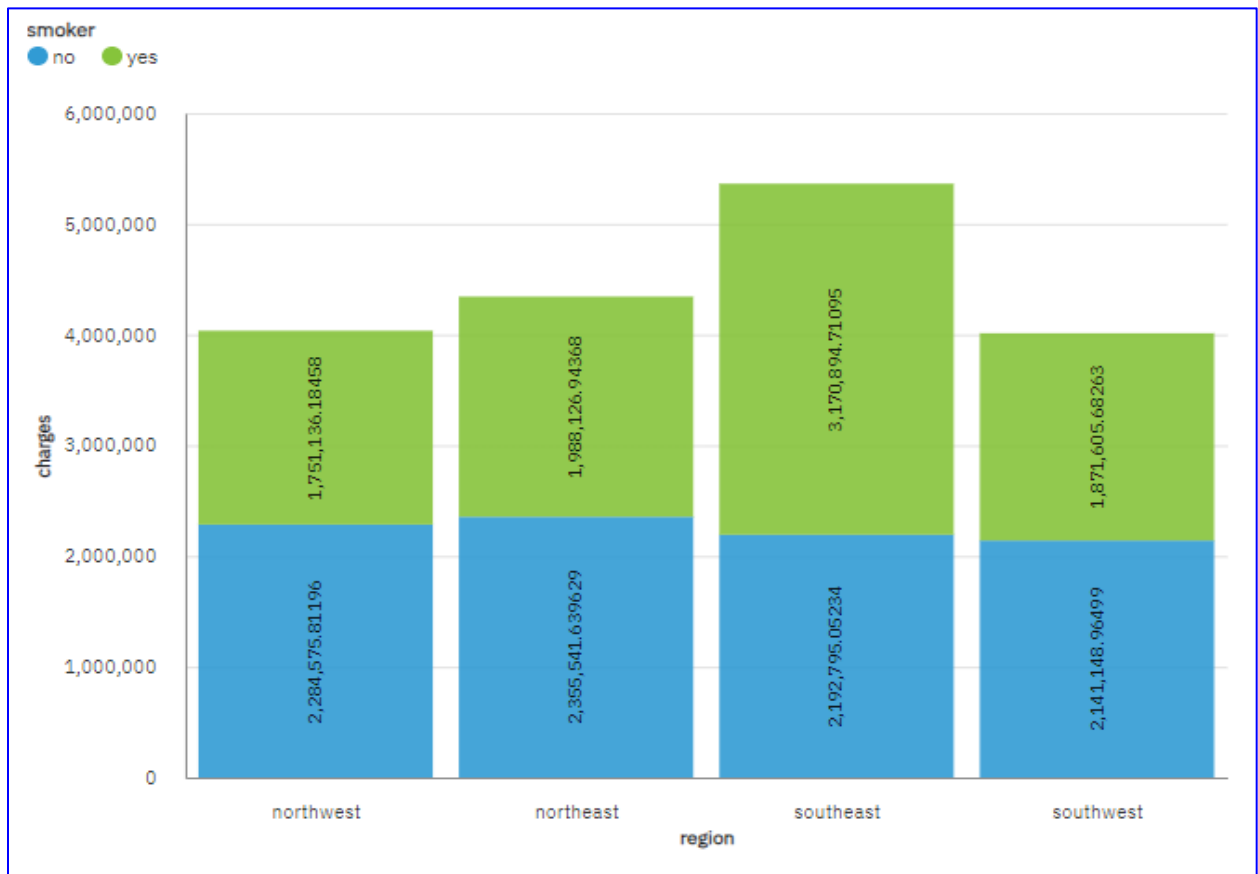
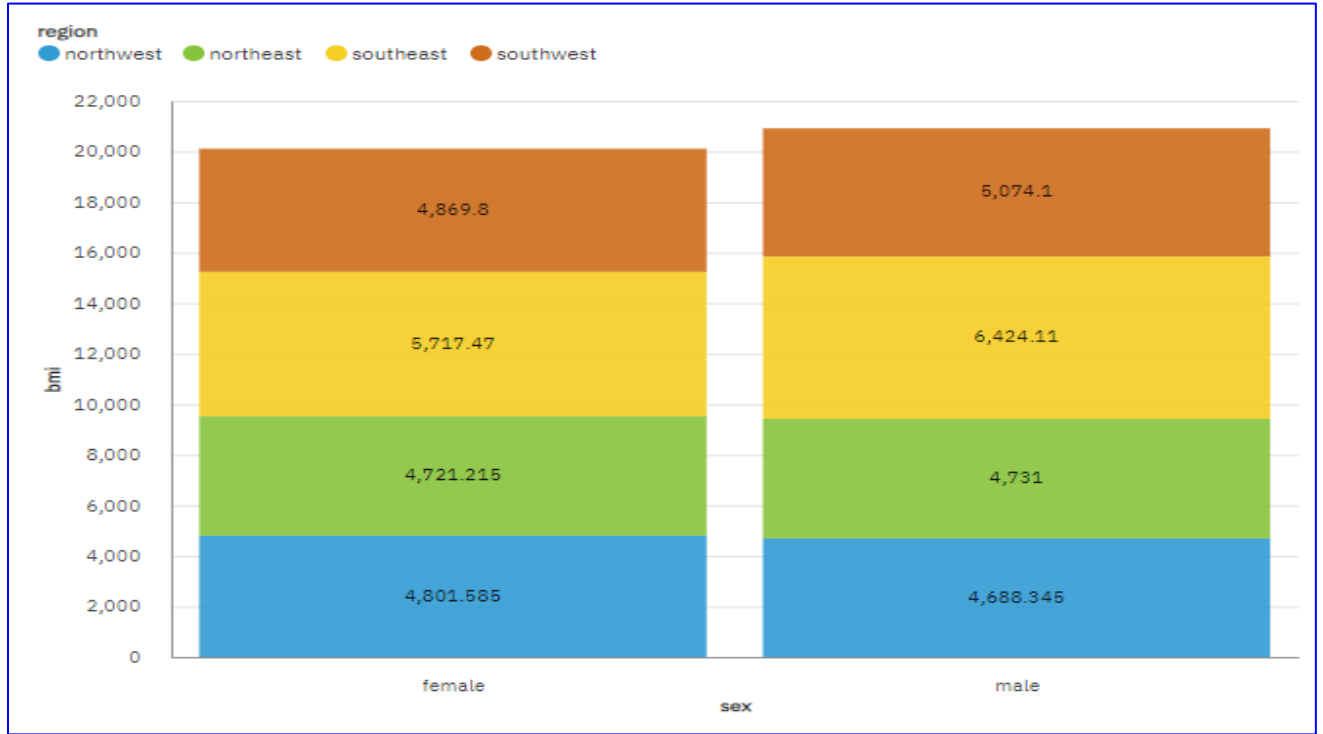
Average age of person based on region and gender

The Number of females in northwest is higher then ever other

age

38.7830687830688  
39.7037037037037



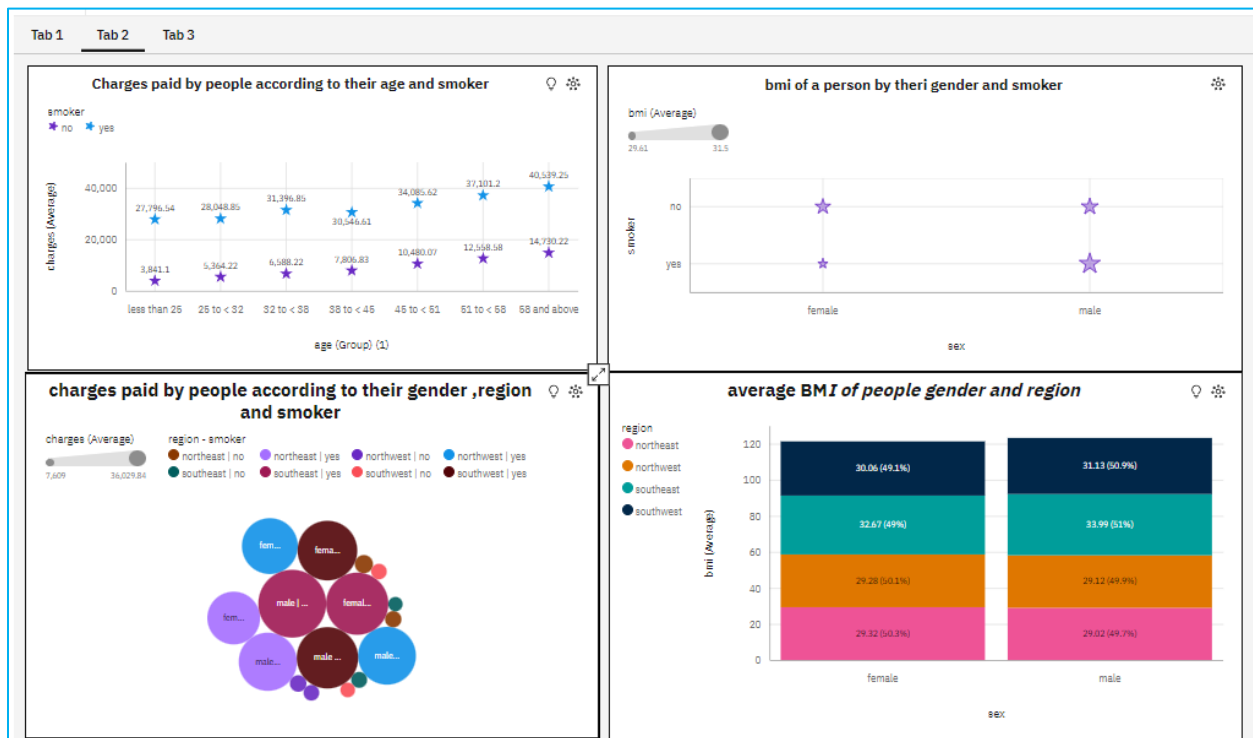
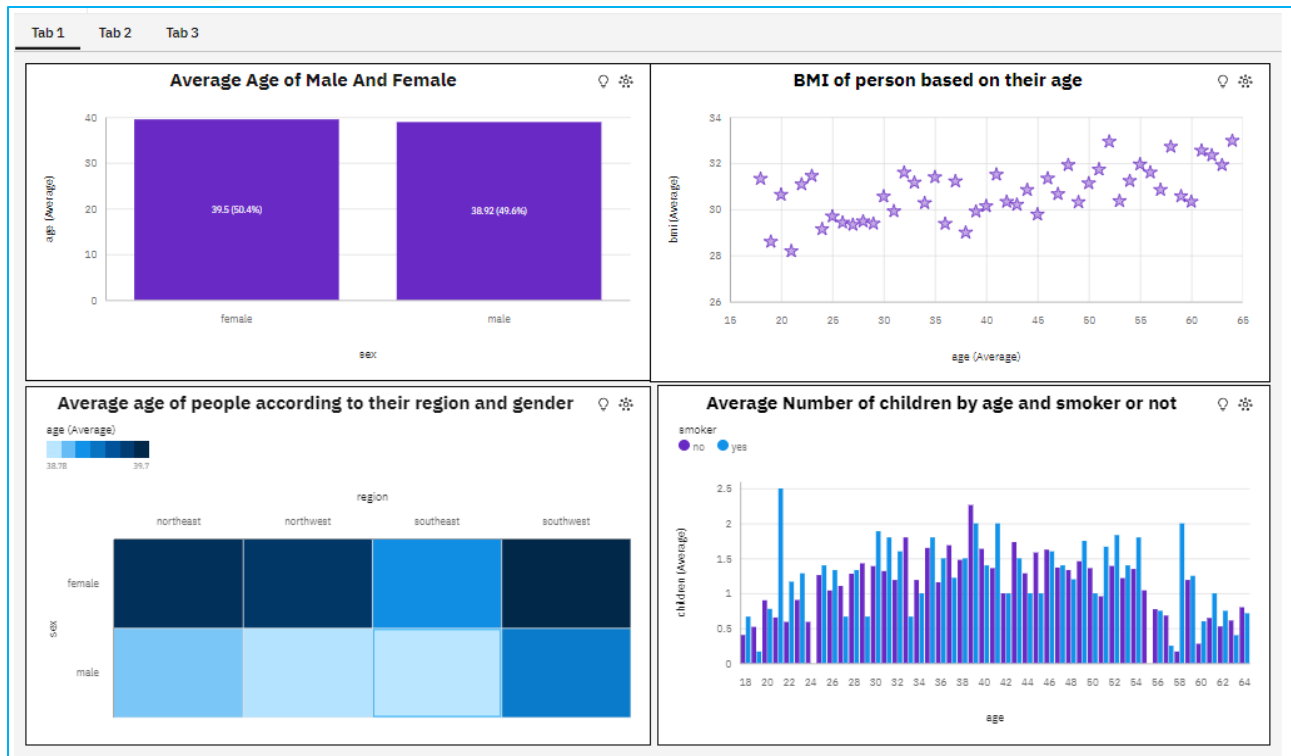


# Web Integration





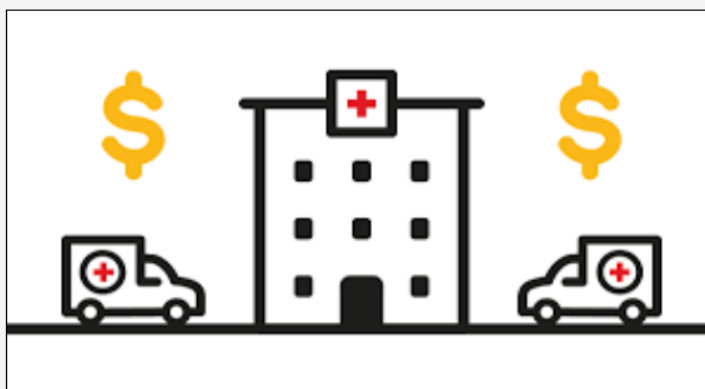
# Dashboard





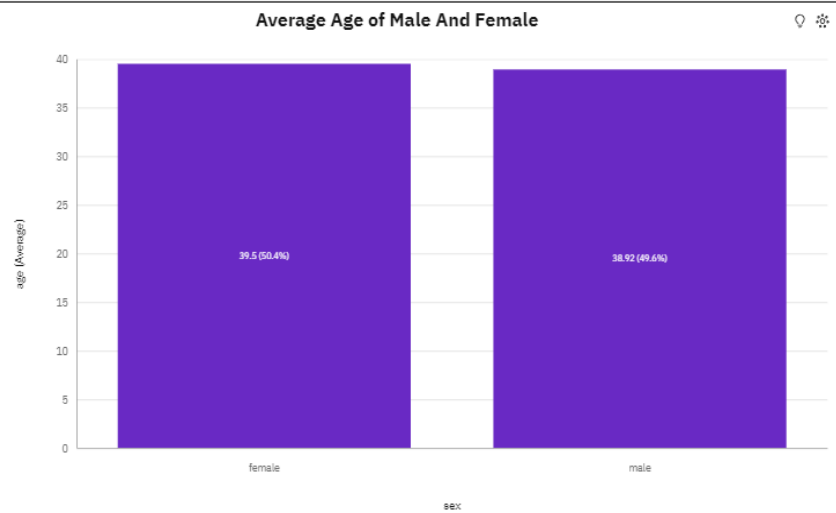
## Story

# Medical Care Costs Story



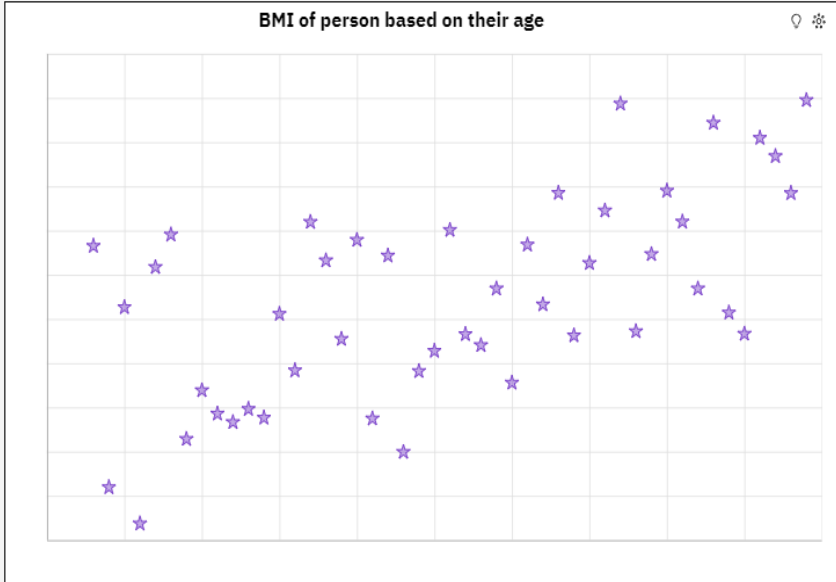
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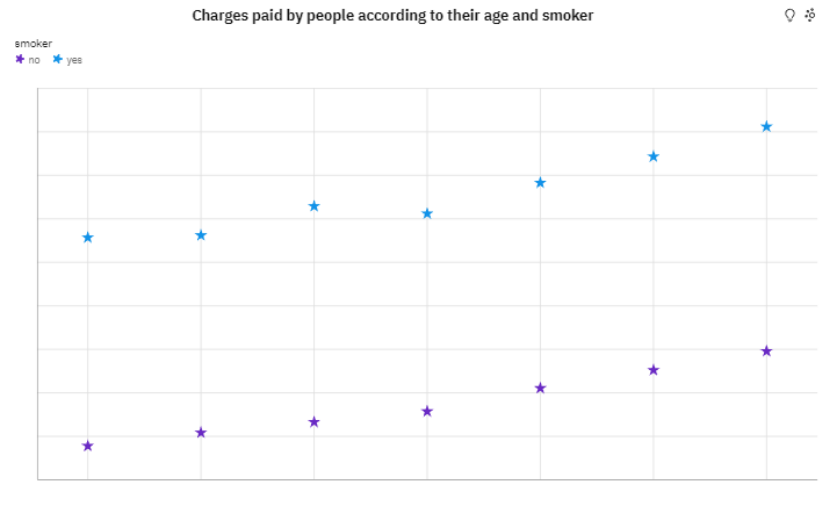
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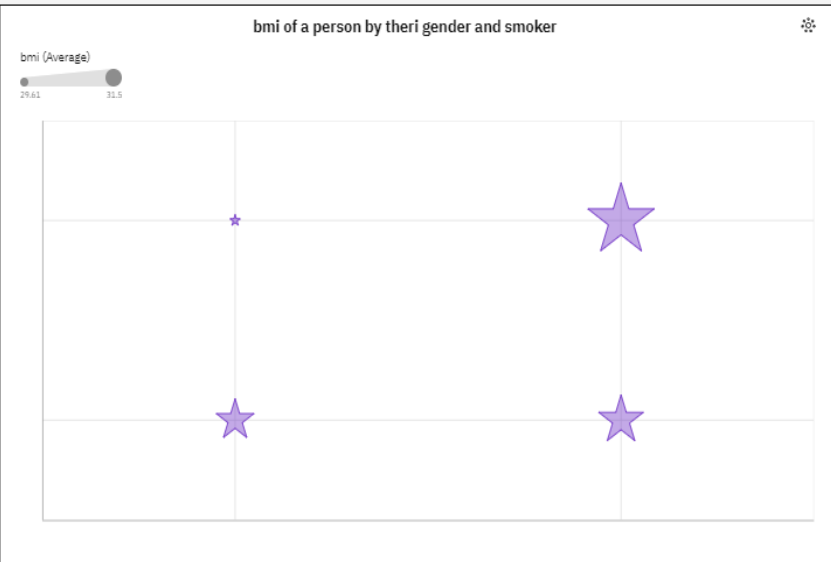
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Smoking Is Not Only  
Injuries To Health  
But Also For Wealth

## Medical\_Care\_Cost\_Report




### Contact

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contact@example.com



**Call Us**

+1 5589 55488 55  
+1 6678 254445 41


Your Name

Your Email

Subject

Message

Send Message



# Advantages & Disadvantages

## Advantages:

IBM provides powerful data visualization, Dash Boarding, and reporting capabilities that help users quickly and easily access relevant insights. This allows businesses to make data-driven decisions more efficiently and effectively.

- Higher ground gave the enemy the/an advantage.
- 
- He has/enjoys an unfair advantage over us because of his wealth.
- 
- His plan has the advantage of being less expensive than other options.
- 
- He lacked the advantages of an advanced education.
- 
- Speed is an advantage in most sports.
- 
- External Failure Costs

## Disadvantages:

IBM COGNOS **are some small features that are missing**. It would be nice if the graphics were better. You can use external sources for charts, but it's quite complex to use and not easy to implement.

- Services are intangible.
- The provider is the product.
- They're perishable.
- Quality can vary from day to day.

## Application:

- IBM Benefits Summary. Health & Well being.
- Family Support. Tax-Advantaged Spending Accounts. Financial Benefits.
- Time Off & Leaves. Enrolling in Benefits. Resources.
- IBM COGNOS Business Intelligence is a web-based integrated business intelligence suite by IBM. It **provides a tool set for reporting and monitoring of events and metrics**. The software consists of several components designed to meet the different information requirements in a company.
- Predictive Analytics in healthcare **predicts future patient outcomes and identifies what treatment to give patients based on their health condition**. Standard techniques used in predictive analysis include machine learning, statistical modeling, and data mining.

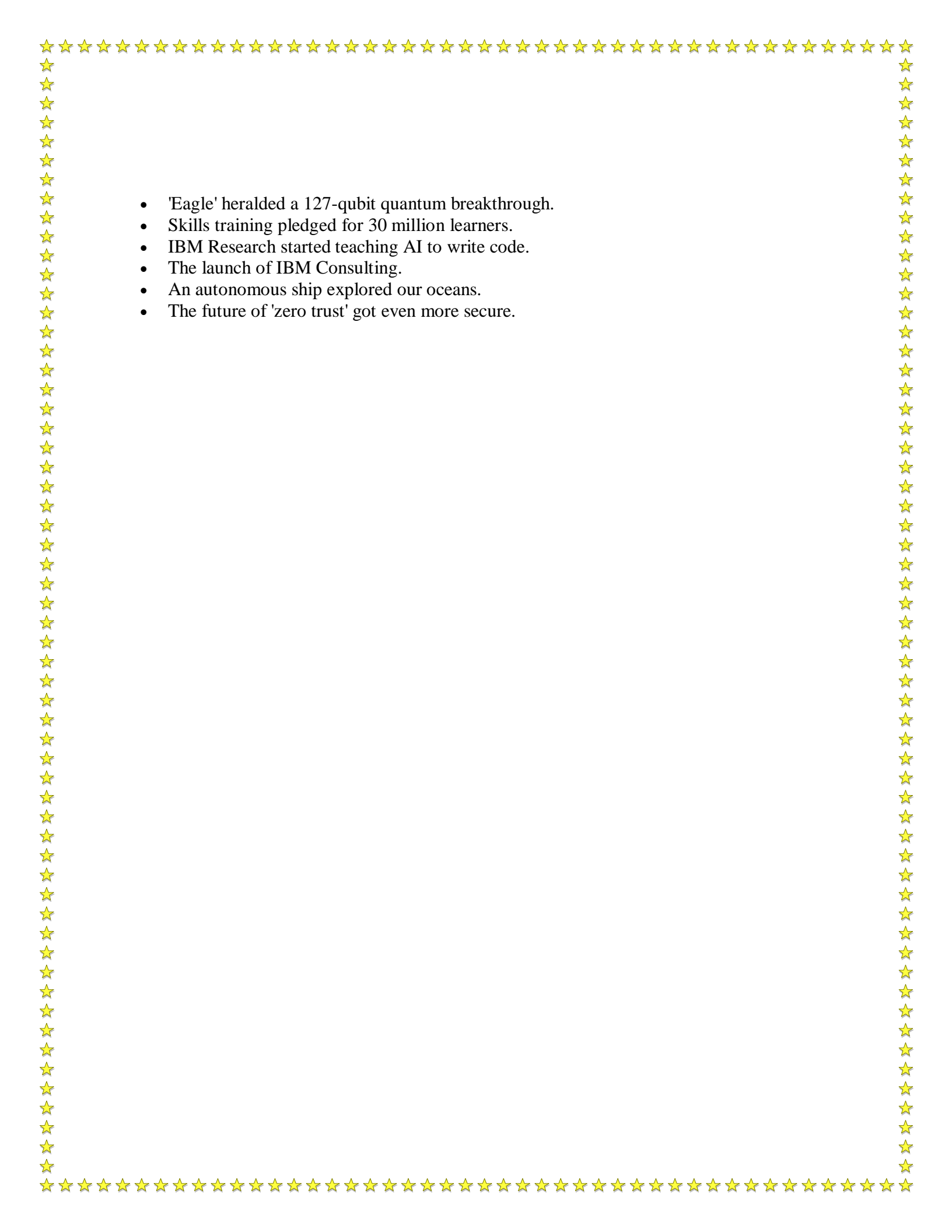
## Conclusion:

IBM's mission statement is “to lead in the creation, development and manufacture of the industry's most advanced information technologies, including computer systems, software, networking systems, storage devices and microelectronics.

## Future Scope:

*IBM* plays a critical role in the *health* industries our solutions, *services* and innovations are enabling the *future* for *healthcare* and life sciences.



- 
- 'Eagle' heralded a 127-qubit quantum breakthrough.
  - Skills training pledged for 30 million learners.
  - IBM Research started teaching AI to write code.
  - The launch of IBM Consulting.
  - An autonomous ship explored our oceans.
  - The future of 'zero trust' got even more secure.