# Chapter 12
# A Visualization Dashboard for COVID–19 Tweets Sentiment Analysis

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## ABSTRACT

*The COVID-19 pandemic has compelled the world to come to a standstill. Everyone including governments, researchers, organizations were caught off-guard. Social scientists and psychologists all try to understand the sentiment of the public so that they can help social organizations and governments to avert situations that ought to become worse if a negative sentiment persists among the commonality. With government-issued lockdowns in place during the pandemic, the public was mostly confined to their homes. So, the public started to share their status updates, discussions, photos, and videos over social media. Social media became the go-to place to obtain the public's sentiments and insights on the COVID-19 pandemic. This chapter introduces the utilization of the Twitter API to obtain tweets in real-time based on hashtags relating to the COVID-19 pandemic in order to gain insights on the sentiments of people at specific times. Each tweet received will be analyzed for emotional tone and sentiment. All data is stored in a Cloudant database.*

## INTRODUCTION

COVID-19 pandemic has been a mystery and something the world never saw coming and was unprepared for. COVID-19 is caused by SARS-CoV2 coronavirus. The most common symptoms include fever, cough, tiredness and loss of taste or smell. As COVID-19 was highly infectious and somewhat deadly, governments had to quickly develop policies to contain the spread of the disease. Further, COVID-19 was a new pandemic and governments, healthcare workers and people in general didn't know what to do. An absence of established literature and research about the coronavirus added to the confusion and fear of the people. There can be riots, displeasure towards government policies, or any other kind of chaos when the public is scared. So, researchers felt that there is a need to examine how people are reacting to the pandemic more closely. Internet changed how people connected with each other and how they expressed their views. Social media websites give people the power to instantly share their views with their online friends and family groups. During times of excitement or distress the majority of people share their comments about the pandemic, phots eating in a restaurant or watching their favorite team win online. Social media means a lot to people as it gives them the power to express what they feel without filter.

## SOCIAL MEDIA BIOLOGY MECHANISM

It is important to understand how social media attracts an individual because this explains one revolving the system proposed towards a social media website is valid and is a credible source to rely on when it comes to understanding the reaction of people. The social media addiction is a real thing and not totally a behavioral issue. A big reason for this addiction is two chemicals produced by one's brain: dopamine and oxytocin. Dopamine is produced at the base of the brain by the neurons present in that region. Dopamine is a feel-nice neurotransmitter that is involved in reinforcement. That is why when a person uses social media, he/she tends to come back. This intense feeling of reward produced by dopamine leads to addiction. A research team headed Wilhelm Hofmann of Chicago University's Booth Business School found out that twitter was harder to resist than cigarettes and alcohol. Then comes the other chemical, Oxytocin which is released when you kiss or hug. Neuroscientist Paul Zak discovered that social media triggers the release of generosity-trust chemicals in the person's brains. When one use social media oxytocin levels can rise up to 13% which is almost similar to the levels, one may experience on their wedding day. So, it becomes hard to resist the feeling of wanting the social media more. As a result of this addiction, the researchers can leverage social media as a place to get myriad of data to analyze and understand the emotions of people at a particular instance of time.

## SOCIAL MEDIA ADDICTION

Together with the very rapid digitalization in our age, the use of social media is increasing in our country and in the world (Ersöz & Kahraman, 2020; Singh et al., 2020). Scrolling through tweets, posts, and stories have become one of the most common activities among people over the past decade. Although social media is considered a new area of socialization and that this situation is an advantage (Savcı & Aysan, 2017), it is also reported that social media has a negative effect on interpersonal relationships (Çalışir, 2015), psychological health (Chen et al., 2020) and private life (Acılar & Mersin, 2015), increases the

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