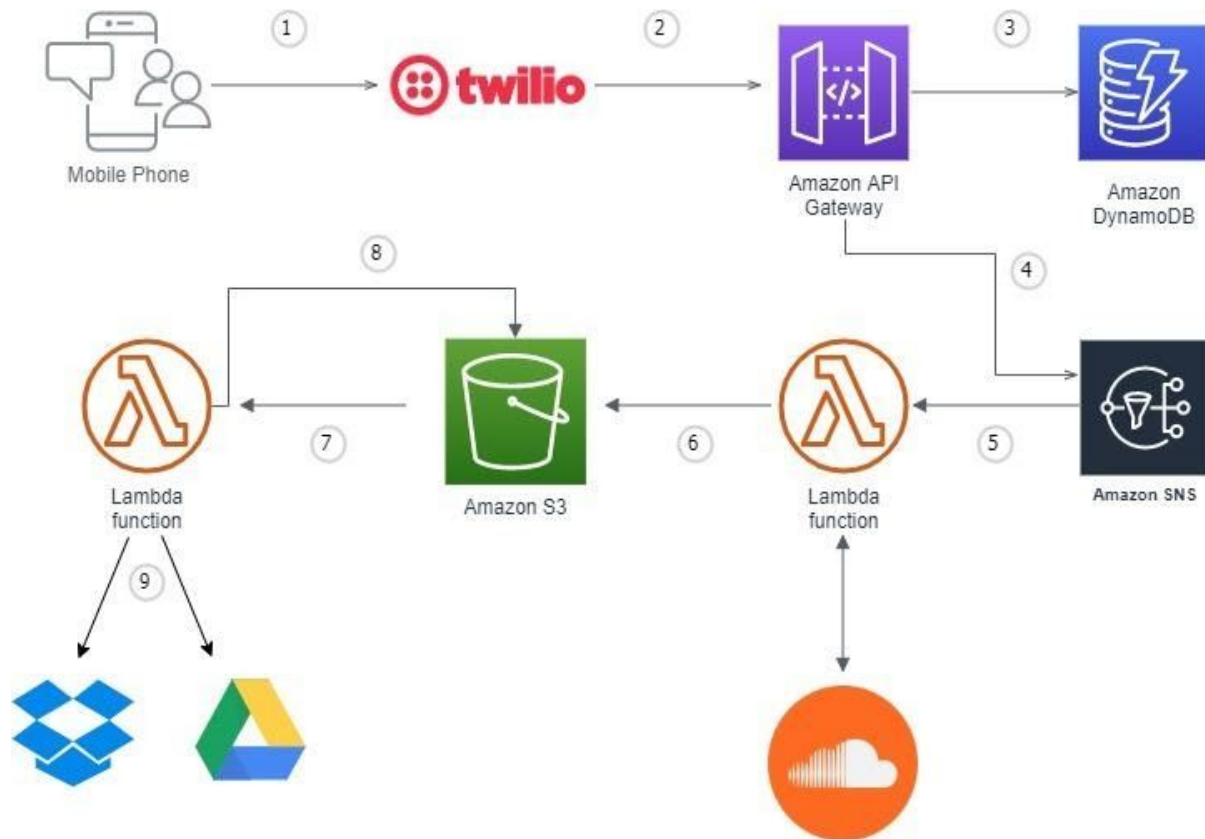## CSCE 678 FINAL PROJECT PROPOSAL

- **Team Members: Anindita Mishra [527002315], Varsha Khanna [228000216]**

- **What is the topic you want to work on?**

Our intention with this project is to study integration of different cloud platform services. We intend to do so by building an application that downloads media from SoundCloud through a request sent via text message containing the URL.

Overview of our application:
- Sign up for our service website using Dropbox/ Google drive credentials.
- Link your phone number with our service
- Text a SoundCloud track link on the registered phone number for our service.
- The song gets downloaded and put in your specified cloud location.

- **Why are you interested in this topic and why is the topic important?**

Have you ever browsed through the SoundCloud app and found a killer track, only to realize you may not be able to find it again? Do you often find yourself on road trips with no internet connection and songs to choose from? Worry not! We want to build an application for music lovers and situations just like these. We let users download these songs into their specified cloud location which will be available whenever and wherever they need it.

- **What solution or strategy are you proposing to tackle this topic?**

1. Users text messages the SoundCloud track link.
2. Using third party Twilio webhook, we send the track link from that phone number to Amazon API gateway
3. The API gateway then checks whether this is a registered user from DynamoDB.
4. It then creates an SNS topic with the SoundCloud track link name.
5. The SNS topic creation triggers a Lambda function that downloads the song from SoundCloud and puts it into S3 bucket.
6. The S3 put triggers another lambda function.
7. The Lambda function first saves the song onto the users account.
8. Then, it deletes the song from S3 as it is no longer required.

Tech Stack

- **Dropbox API:** To login to application and associate account to save the song into this account
- **Twilio Webhook:** To send message request to server
- **Amazon DynamoDB:** Stores all valid users
- **Amazon SNS:** Notification service
- **ytdl:** 3rd party api that downloads the media file passed as an url and saves coming to S3 bucket
- **AWS Lambda:**
    1. One to monitor any SNS topic
    2. Another one that takes song from S3 bucket and puts it into Dropbox (lookup account specifics in DynamoDB)
- **S3 buckets:** Stores media files