

## *Hi! Welcome to your second coding assignment.*

- 1.** In the last project, we asked you to choose the language in which you are comfortable. Since you all have done an efficient job timewise, we suggest that you take up a project in a different language this time.
- 2.** In this document we will give to you three projects - one in python, one in Javascript and another one in Java. There is no compulsion but it would be nice if you could pick up a language other than the one you chose in level one. So say - if you worked on a content aggregator in Django in the level one, then why don't you try your hand at Javascript or Java this time?
- 3.** In real life, you might not always get projects which will be in languages you know. You must learn to be B-E-N-D-Y and try to be an all rounder at least when it comes to coding languages. Take the leap :)

### *Options:*

- 1. Unlock-City Project in Java*
- 2. MP3 Player project in Python*
- 3. An Interactive-Javascript Map of KIET*

## *The Unlock-City project* (Java)

It is a web-based software application built to store all the essential details of a city during a pandemic. Cities and urban areas are witnessing an unlockdown currently in the country. In the initial days after the unlocking, people don't know what habits they should practice during a pandemic, how to help the returning migrant labourer and where are the COVID-19 facilities in the city. The unlock-city project seeks to address that by creating an integrated platform to store essential and related information to guide the people in a city.

The application will provide job seeking labour information like labour unions, construction work available, industries offering jobs on pay and transportation services. On the other hand it will inform the city-dwellers on the various emergency helplines, and basically every information that one needs in a coronavirus world. It is like a guide to navigate when infection is spreading. Users can connect to the application via the Internet and browse all the unlock-city web pages to get the details they need.

*The unlock-city application has five modules:*

**-Administration module** – It is the central controller of the application. It uploads all the new information on the site and authenticates user profiles, and supervises the maintenance of the other four modules.

**-COVID-19 module** – As the name suggests, this module handles all the COVID-19-related operations in the city, such as quarantine facilities, hospitals, testing centres, containment zones, and so on. A user authenticated by the administration module becomes the primary user of this module.

**-Jobseekers module** – As you know, right after the lockdown the country witnessed an avalanche of migrant labourers going back to their hometowns and villages. Due to lack of information they went through numerous problems. There will come a time when these labourers, due to a lack of opportunities in the villages, will return to the city. This module contains important information on the job opportunities available in the city for a returning labourer. Users can access all kinds of job-related information across various industries. The main objective of this module is to help the city administration and the pouring labourers to combat unemployment problems in the city.

**-Smart habits module** – This module will cover all the smart habits one must have during a pandemic. Put information about etiquettes of mask wearing, social distancing, washing hands etc.

## MP3-Player project: (python)

Audio is as important as text today if not more important. Since audio files are digital files, you'll need a tool that can play them. Without a player, you'll never be able to listen to the contents of an audio file. This is where the MP3 Player comes in. The MP3 Player is a device for playing MP3s and other digital audio files. This MP3 Player GUI project idea attempts to emulate the physical MP3 Player. You can build software that allows you to play an MP3 file on your desktop or laptop computer. When you are done building the MP3 Player project, users can play their MP3 files and other digital audio files without having to purchase a physical MP3 Player. They'll be able to play the MP3 files using their computers.

Here are some implementations of the MP3 Player idea:

- [MusicBee](#)
- [Foobar2000](#)

### Technical Details

The main objective of this project is to allow users to play MP3 and digital audio files. To be engaging for users, the application has to have a simple but beautiful user interface.

-You can have an interface for listing the available MP3 files. You can also give users the option to list other digital audio files that are not MP3.

-The users will also expect the MP3 Player to have an interface that shows information on the file that is playing. Some of the information you can include are the name of the file, its length, the amount played, and the amount not played, in minutes and seconds.

-Python has libraries that can play audio files, such as [pygame](#), which allows you to work with multimedia files in a few lines of code. You can also check out [pymedia](#) and [simple audio](#). These libraries can handle a lot of digital audio files. They can handle other file types, not just the MP3 files.

-You can also implement a feature that allows users to create a playlist. To do this, you'll need a database to store information on the created playlists. Python's `sqlite3` module allows you to use the SQLite database.

-The SQLite database is a better option in this case, because it is file based and easier to set up than other SQL databases. While SQLite is file based, [it is better for saving data than a regular file](#).

# *Interactive Javascript Map: KIET Group of Institutions*

This one might be a bit tricky at the outset but let us know if you feel so. We can change this project. We want you to build an interactive map of KIET Group of Institutions.

If you've ever used Google Maps to zoom in on a location and change your view mode, you were using features that were built with JavaScript. JavaScript's ability to create dynamic objects makes it a natural fit for creative interactive maps on websites or in a web app. While you don't need to aim for recreating Google Maps on your first time out, experimenting with simple JavaScript projects like [Sara B's interactive Codepen map](#) (built using the JavaScript framework [jQuery](#)—a collection of JavaScript libraries with pre-written, reusable code) is a solid way to familiarize yourself with JavaScript's map-making capabilities.

## Things to Keep in Mind:

1. All of these projects are VERY SIMPLE. Their description is long but they are simple - we have chosen slightly longer projects because we want you to work in teams. And we love creativity, so don't limit yourself till just this project. Pick up extra challenges, add extra features and have fun while you are coding!