A.  Create an Android mobile application, compatible for Android 8.0 and higher. The application must include the following functional requirements:

1.  Create a user option to enter term titles (e.g., Term 1, Term 2, Spring Term), start dates, and end dates for each term.

2.  Create features that allow the user to add as many terms as needed.

3.  Implement validation so that a term cannot be deleted if courses are assigned to it.

4.  Create features that allow the user to do the following for each term:

a.  Add as many courses as needed

b.  Display a list of courses associated with each term

c.  Display a detailed view of the term title (e.g., Term 1, Term 2, Spring Term), the start date, and the end date for each term

5.  Include the following details for each course:

•  The course title

•  The start date

•  The end date

•  The status (in progress, completed, dropped, plan to take)

•  The course instructors’ names, phone numbers, and e-mail addresses

6.  Include features that allow the user to do the following for each course:

a.  Add as many assessments as needed.

b.  Add a minimum of one optional note per course.

c.  Enter, edit, and delete course information.

d.  Display optional notes.

e.  Display a detailed view of the course, including the end date.

f.  Set alerts for the start and end date, that will trigger when the application is not running.

g.  Share notes via a sharing feature (either e-mail or SMS) that automatically populates with the notes.

7.  Include features that allow the user to do the following for each assessment:

a.  Add performance and objective assessments for each course, including the titles and end dates of the assessments.

b.  Enter, edit, and delete assessment information.

c.  Set alerts for start and end dates, that will trigger when the application is not running.

B.  Design the following screen layouts, including appropriate GUI (graphical user interface) elements (e.g., navigation, input, and information) for each layout:

•  home screen

•  list of terms

•  list of courses

•  list of assessments

•  detailed course view

•  detailed term view

•  detailed assessment view

C.  Implement a scheduler within your application from Part A and include the following elements:

•  an ArrayList

•  an intent

•  navigation capability between multiple screens using activity

•  **three** activities

•  events (e.g., a click event)

•  the ability to work in portrait and landscape layout

•  interactive capability (e.g., the ability to accept and act upon user input)

•  a database to store and retrieve application data

•  an application title and an icon

•  notifications or alerts

•  the use of both declarative and programmatic methods to create a user interface

1.  Include the following interface requirements in the application from part C:

•  the ability to scroll vertically

•  an action bar

•  **two** layouts

•  input controls

•  buttons

D.  Create a storyboard to demonstrate application flow that includes each of the menus and screens from part B.

E.  Provide screen shots of generating the signed APK to demonstrate that you have created a deployment package.

Note: Verify that all the required functions of your application are working by executing the apk file.

F.  Reflect on the creation of your mobile application by doing the following:

1.  Explain how your application would be different if it were developed for a tablet rather than a phone, including a discussion of fragments and layouts.

2.  Identify the minimum and target operating system your application was developed under and is compatible with.

3.  Describe (suggested length of 1–2 paragraphs) the challenges you faced during the development of the mobile application.

4.  Describe (suggested length of 1–2 paragraphs) how you overcame each challenge discussed in part F3.

5.  Discuss (suggested length of 1–2 paragraphs) what you would do differently if you did the project again.

6.  Describe how emulators are used and the pros and cons of using an emulator versus using a development device.

G.  Acknowledge sources, using APA-formatted in-text citations and references, for content that is quoted, paraphrased, or summarized.

H.  Demonstrate professional communication in the content and presentation of your submission.