Task 2

Aim: Create Tab/Features/Facilities/Functionality in your Page as per application

Tools: Android Studio, Ms Word

Description about Application:

Note-taking applications (also called note-taking apps) allow users to: Store all notes and important information digitally, usually in a cloud-based storage system. Type, write, and draw notes on the device of choice just as one would, using a pen and paper.

When you open the app after registration/logging-in, you will find the landing page with “add notes” icon in the bottom left. Through the landing page, you can easily modify any existing notes or create new ones by pressing on the icon.

While creating a new note, the app provides the following features –

Title: to easily navigate your note

Description: the main body of the note

Date and Time scheduler

Save button

You also get an option to delete a note.

This application aims to be simple and user friendly so that maximum number of people can use this on a regular basis for their daily chores or important meetings, etc.

Result & Discussion

- **Code:**

```
import android.content.Context
import android.view.LayoutInflater
import android.view.View
import android.view.ViewGroup
import android.widget.TextView
import
androidx.recyclerview.widget.RecyclerView
import
com.singhvikrant.mobilecomputingtasks.R
import
com.singhvikrant.mobilecomputingtasks.roo
mDatabase.NoteEntity
class NotesAdapter(private val context:
Context, private val listener:
INotesAdapter):RecyclerView.Adapter<Notes
Adapter.NotesViewHolder>() {
   private val notesArrayList =
ArrayList<NoteEntity>()
```

```
   inner class NotesViewHolder(itemView:
View) : RecyclerView.ViewHolder(itemView) {
      val title:TextView? =
itemView.findViewById(R.id.title)
      val notes:TextView? =
itemView.findViewById(R.id.notes)
      val clickable:TextView =
itemView.findViewById(R.id.clickable)
   }
   override fun onCreateViewHolder(parent:
ViewGroup, viewType: Int): NotesViewHolder
{
      val viewHolder =
NotesViewHolder(LayoutInflater.from(context
).inflate(R.layout.activity_notes_recycler,
parent, false))
      viewHolder.clickable.setOnClickListener{
listener.onItemClick(notesArrayList[viewHold
er.adapterPosition])
      }
      return viewHolder
   }
   override fun onBindViewHolder(holder:
NotesViewHolder, position: Int) {
      val currentNote =
notesArrayList[position]
      holder.title?.text = currentNote.title
      holder.notes?.text = currentNote.note
   }
   override fun getItemCount(): Int {
      return notesArrayList.size
   }
   fun updateList(newList:List<NoteEntity>){
      notesArrayList.clear()
      notesArrayList.addAll(newList)
      notifyDataSetChanged()
   }
}
interface INotesAdapter {
   fun onItemClick(note: NoteEntity)
}
import android.app.DatePickerDialog
import android.app.TimePickerDialog
import android.widget.*
import
com.singhvikrant.mobilecomputingtasks.R
import
com.singhvikrant.mobilecomputingtasks.ui.No
teActivity
import java.text.DecimalFormat
import java.util.*
class DateTime(private val noteView:
NoteActivity):
DatePickerDialog.OnDateSetListener,
TimePickerDialog.OnTimeSetListener {
   private var format = DecimalFormat("00")
   private var day = 0
   private var month = 0
   private var year =  0
   private var hour12 = 0
   private var hour24 = 0
   private var minute = 0
   private var amPm = ""
   private var saveDay = 0
   private var saveMonth = 0
   private var saveYear =  0
   private var saveHour12 = 0
   private var saveHour24 = 0
   private var saveMinute = 0
   private var saveAmPm = ""
   init {
      dateTime()
   }
private fun getDateTimeCalender() {
      val calendar: Calendar =
Calendar.getInstance()
      day =
calendar.get(Calendar.DAY_OF_MONTH)
      month =
calendar.get(Calendar.MONTH)+1
      year = calendar.get(Calendar.YEAR)
      hour24 =
calendar.get(Calendar.HOUR_OF_DAY)
      hour12 =
calendar.get(Calendar.HOUR_OF_DAY)
      amPm = if (hour12 >= 12){
         "PM"
      }else{
         "AM"
      }
      hour12 %= 12
      if (hour12 == 0){
         hour12 = 12
      }
      minute = calendar.get(Calendar.MINUTE)
      val dateTime: TextView =
noteView.findViewById(R.id.date_time)
```

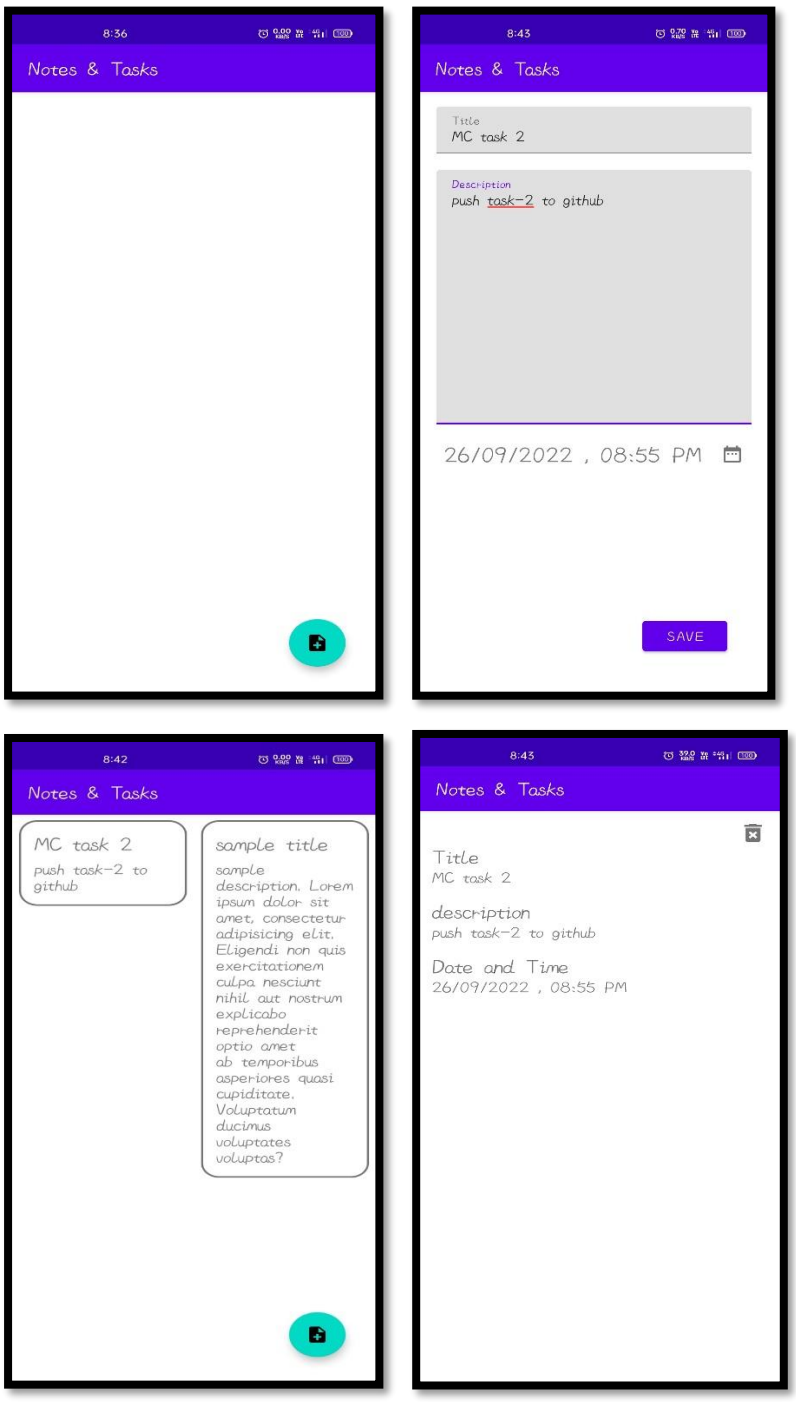
```
        dateTime.text =
"${format.format(day)}/${format.format(mon
th)}/${format.format(year)} ,
${format.format(hour12)}:${format.format(mi
nute)} $amPm"
        println("Curr Date :
${format.format(day)}/${format.format(month
)}/${format.format(year)} ,
${format.format(hour12)}:${format.format(mi
nute)} $amPm")
        month -= 1
    }
    private fun dateTime() {
        getDateTimeCalender()
        val dateTime:TextView =
noteView.findViewById(R.id.date_time)
        dateTime.setOnClickListener {
            val dp = DatePickerDialog(noteView,
this, year, month, day)
            dp.datePicker.minDate =
System.currentTimeMillis()
            dp.show()
        }
        val date: ImageView =
noteView.findViewById(R.id.select_date_time
)
        date.setOnClickListener {
            val dp = DatePickerDialog(noteView,
this, year, month, day)
            dp.datePicker.minDate =
System.currentTimeMillis()
            dp.show()
        }
    }
    override fun onDateSet(view: DatePicker?,
year: Int, month: Int, day: Int) {
        saveDay = day
        saveMonth = month+1
        saveYear = year
        getDateTimeCalender()
        TimePickerDialog(view?.context, this,
hour24, minute, false).show()
    }
    override fun onTimeSet(view: TimePicker?,
hour: Int, minute: Int) {
        saveAmPm = if (hour >= 12){
            "PM"
        }else{
            "AM"
        }
        saveHour24 = hour
        saveHour12 = hour%12
        if (saveHour12 == 0){
            saveHour12 = 12
        }
        saveMinute = minute
        val dateTime: TextView =
noteView.findViewById(R.id.date_time)
        dateTime.text =
"${format.format(saveDay)}/${format.format(
saveMonth)}/${format.format(saveYear)} ,
${format.format(saveHour12)}:${format.form
at(saveMinute)} $saveAmPm"
        println("Saved Date :
${format.format(saveDay)}/${format.format(s
aveMonth)}/${format.format(saveYear)} ,
${format.format(saveHour12)}:${format.form
at(saveMinute)} $saveAmPm")
        updateDateTime()
    }
    private fun updateDateTime(){
        day = saveDay
        month = saveMonth -1
        year = saveYear
        hour12 = saveHour12
        hour24 = saveHour24
        minute = saveMinute
        amPm = saveAmPm
    }
    fun getDateTime(): String {
        return
"${format.format(day)}/${format.format(mon
th+1)}/${format.format(year)} ,
${format.format(hour24)}:${format.format(mi
nute)}"
    }
}
import android.app.PendingIntent
import android.content.BroadcastReceiver
import android.content.Context
import android.content.Intent
import androidx.core.app.NotificationCompat
import
androidx.core.app.NotificationManagerComp
at
import
com.singhvikrant.mobilecomputingtasks.R
```

```
import
com.singhvikrant.mobilecomputingtasks.roomDatabase.NoteEntity
import
com.singhvikrant.mobilecomputingtasks.ui.MainActivity
class NoteNotification: BroadcastReceiver(){
   private val channelId = "remindMe"
   private val notificationId = 256
   override fun onReceive(context: Context,
intent: Intent) {
      val bundle =
intent.getBundleExtra("bundle")
      val title =
intent.getStringExtra("title").toString()
      var note =
intent.getStringExtra("note").toString()
      var dateTime =
intent.getStringExtra("dateTime").toString()
      println("title @ $title")
      println("note @ $note")
      if (note.isEmpty()){
         note = "No description"
      }
      val noteEntity: NoteEntity =
bundle?.getSerializable("noteEntity") as
NoteEntity
      println("noteEntity $noteEntity")
      val newIntent = Intent(context,
MainActivity::class.java)
      newIntent.putExtra("title", title)
      newIntent.putExtra("note", note)
      newIntent.putExtra("dateTime",
dateTime)
      newIntent.putExtra("noteEntity",
bundle.getSerializable("noteEntity") as
NoteEntity)
      val pendingIntent =
PendingIntent.getActivity(context, 0,
newIntent,
PendingIntent.FLAG_CANCEL_CURRENT)
println("@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@ Working
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@")
      val builder =
NotificationCompat.Builder(context,
channelId)
.setSmallIcon(R.mipmap.ic_launcher_round)
         .setContentTitle(title)
         .setContentText(note)
         .setAutoCancel(true)
         .setContentIntent(pendingIntent)
.setPriority(NotificationCompat.PRIORITY_DEFAULT)
      val
notificationManager:NotificationManagerCompat =
NotificationManagerCompat.from(context)
      notificationManager.notify(notificationId,
builder.build())
   }}
import android.app.*
import android.content.Intent
import android.os.Build
import android.os.Bundle
import android.view.Gravity
import android.widget.*
import
androidx.appcompat.app.AppCompatActivity
import androidx.lifecycle.ViewModelProvider
import
com.google.android.material.textfield.TextInputEditText
import
com.google.android.material.textfield.TextInputLayout
import
com.singhvikrant.mobilecomputingtasks.R
import
com.singhvikrant.mobilecomputingtasks.dateTime.DateTime
import
com.singhvikrant.mobilecomputingtasks.notification.NoteNotification
import
com.singhvikrant.mobilecomputingtasks.notification.SetAlarm
import
com.singhvikrant.mobilecomputingtasks.roomDatabase.NoteEntity
import
com.singhvikrant.mobilecomputingtasks.roomDatabase.NoteViewModel
import java.text.SimpleDateFormat
import java.util.*
```

```
class NoteActivity : AppCompatActivity() {
   private lateinit var viewModel:
NoteViewModel
   private val channelId = "remindMe"
   private val notificationId = 256
   override fun onCreate(savedInstanceState:
Bundle?) {
      super.onCreate(savedInstanceState)
      setContentView(R.layout.activity_note)
      createNotificationChannel(channelId,
notificationId)
      val inputDescription:TextInputEditText =
findViewById(R.id.input_description)
      inputDescription.gravity = Gravity.TOP
inputDescription.setHorizontallyScrolling(false
)
      inputDescription.maxLines = 17
      val dt = DateTime(this)
      val alarmManager:AlarmManager =
getSystemService(ALARM_SERVICE) as
AlarmManager
      val saveNote: Button =
findViewById(R.id.saveNote)
      saveNote.setOnClickListener {
         if (validateTitle()) {
            val title: TextInputLayout =
findViewById(R.id.text_input_title)
            val titleInput =
title.editText?.text.toString()
            val note: TextInputLayout =
findViewById(R.id.text_input_description)
            val noteInput =
note.editText?.text.toString()
            val dateTimeText: TextView =
findViewById(R.id.date_time)
            val dateTimeTextInput =
dateTimeText.text.toString()
            val dateTime = dt.getDateTime()
            println(dateTime)
            val formatter =
SimpleDateFormat("dd/MM/yyyy , HH:mm",
Locale.ENGLISH)
      }
   }
   fun createNotificationChannel(channelId:
String, notificationId: Int) {
      if (Build.VERSION.SDK_INT >=
Build.VERSION_CODES.O) {
         // Create the NotificationChannel
            val dateTimeToMs :Long=
formatter.parse(dateTime)!!.time
            println(dateTimeToMs)
            val timeOfNoteSaved: Long =
System.currentTimeMillis()
            println(timeOfNoteSaved)
            val delay: Long = 0
            println(delay)
            val noteEntity =
NoteEntity(titleInput, noteInput,
dateTimeTextInput)
            viewModel  =
ViewModelProvider(this,
ViewModelProvider.AndroidViewModelFactor
y.getInstance(application))[NoteViewModel::c
lass.java]
            viewModel.insertNote(noteEntity)
            val intent = Intent(this,
NoteNotification::class.java)
            val bundle = Bundle()
            bundle.putSerializable("noteEntity",
noteEntity)
            intent.putExtra("title", titleInput)
            intent.putExtra("note", noteInput)
            intent.putExtra("dateTime",
dateTimeTextInput)
            intent.putExtra("bundle",bundle)
            println("noteEntity $noteEntity")
            val pendingIntent =
PendingIntent.getBroadcast(this,
dateTimeToMs.toInt(),
intent,PendingIntent.FLAG_CANCEL_CURRENT
)
            SetAlarm(dateTimeToMs,
pendingIntent, alarmManager)
            Toast.makeText(this, "Saved
successfully", Toast.LENGTH_SHORT).show()
            finish()
         }



         val name = channelId
         val descriptionText = "This is a
reminder notification channel"
         val importance =
NotificationManager.IMPORTANCE_DEFAULT
```

```
        val mChannel =
NotificationChannel(channelId, name,
importance)
        mChannel.description =
descriptionText
        // Register the channel with the
system; you can't change the importance
        // or other notification behaviors after
this
        val notificationManager =
getSystemService(NOTIFICATION_SERVICE) as
NotificationManager
//          val notificationManager =
ContextCompat.getSystemService(NOTIFICATI
ON_SERVICE) as NotificationManager

notificationManager.createNotificationChann
el(mChannel)
      } }
   private fun validateTitle(): Boolean {
      val title:TextInputLayout =
findViewById(R.id.text_input_title)
      val titleInput =
title.editText?.text.toString()
      return if (titleInput.isEmpty()) {
         title.error = "Field can't be empty"
         false
      } else {
         title.error = null
         true
      }}}
import
androidx.appcompat.app.AppCompatActivity
import android.os.Bundle
import android.widget.ImageView
import android.widget.TextView
import androidx.lifecycle.ViewModelProvider
import
com.singhvikrant.mobilecomputingtasks.R
import
com.singhvikrant.mobilecomputingtasks.roo
mDatabase.NoteEntity
import
com.singhvikrant.mobilecomputingtasks.roo
mDatabase.NoteViewModel
class NoteDescriptionActivity :
AppCompatActivity() {
   private lateinit var viewModel:
NoteViewModel
   override fun onCreate(savedInstanceState:
Bundle?) {
      super.onCreate(savedInstanceState)
setContentView(R.layout.activity_note_descri
ption)
      val title =
intent.getStringExtra("title").toString()
      var note =
intent.getStringExtra("note").toString()
      var dateTime =
intent.getStringExtra("dateTime").toString()
      val noteEntity: NoteEntity =
intent.getSerializableExtra("noteEntity") as
NoteEntity
      if (note.isEmpty()){
         note = "No description"
      }
      val deleteNote:ImageView =
findViewById(R.id.deleteNote)
      val titleText:TextView =
findViewById(R.id.title)
      titleText.text = title
      val noteText:TextView =
findViewById(R.id.note)
      noteText.text = note
      val dateTimeText:TextView =
findViewById(R.id.dateTime)
      dateTimeText.text = dateTime
      deleteNote.setOnClickListener {
         viewModel  = ViewModelProvider(this,
ViewModelProvider.AndroidViewModelFactor
y.getInstance(application))[NoteViewModel::c
lass.java]
         viewModel.deleteNote(noteEntity)
         finish()
      }}}
import androidx.room.ColumnInfo
import androidx.room.Entity
```

- **Output:**



Conclusion:

Hence we successfully created Tab/Features/Facilities/Functionality in our Page as per application and described their working in Laymen's terms.