# LAPORAN PRAKTIKUM
# PEMROGRAMAN MOBILE
# MODUL 5


**Connect to the Internet**

**Oleh:**

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**PROGRAM STUDI TEKNOLOGI INFORMASI**
**FAKULTAS TEKNIK**
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**JUNI 2025**

# LEMBAR PENGESAHAN
# LAPORAN PRAKTIKUM PEMROGRAMAN I
# MODUL 5

Laporan Praktikum Pemrograman Mobile Modul 5:
Connect to the internet ini disusun sebagai syarat lulus mata kuliah Praktikum Pemrograman Mobile. Laporan Prakitkum ini dikerjakan oleh:

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| | |
|---|---|
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# DAFTAR ISI

# DAFTAR GAMBAR

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# SOAL 1

Lanjutkan aplikasi Android yang sudah dibuat pada Modul 4 dengan menambahkan modifikasi sesuai ketentuan berikut:

a. Gunakan networking library seperti Retrofit atau Ktor agar aplikasi dapat mengambil data dari remote API. Dalam penggunaan networking library, sertakan generic response untuk status dan error handling pada API dan Flow untuk data stream.

b. Gunakan KotlinX Serialization sebagai library JSON.

c. Gunakan library seperti Coil atau Glide untuk image loading.

d. API yang digunakan pada modul ini bebas, contoh API gratis The Movie Database (TMDB) API yang menampilkan data film. Berikut link dokumentasi API: https://developer.themoviedb.org/docs/getting-started

e. Implementasikan konsep data persistence (misalnya offline-first app, pengaturan dark/light mode, fitur favorite, dll)

f. Gunakan caching strategy pada Room..

g. Untuk Modul 5, bebas memilih UI yang ingin digunakan, antara berbasis XML atau Jetpack Compose. Aplikasi harus mempertahankan fitur-fitur yang dibuat pada modul sebelumnya.

## A. Source Code

*Tabel 1. ManhwaDao.kt Modul 5*

```
01  package com.example.gracemanhwa_picks.data.local.dao
2
3   import androidx.room.Dao
4   import androidx.room.Insert
5   import androidx.room.OnConflictStrategy
6   import androidx.room.Query
7   import androidx.room.Update
8   import
9   com.example.gracemanhwa_picks.data.local.entity.ManhwaE
10  ntity
    import kotlinx.coroutines.flow.Flow
11
12  @Dao
13  interface ManhwaDao {
14      @Query("SELECT * FROM manhwas ORDER BY title ASC")
15      fun getAllManhwas(): Flow<List<ManhwaEntity>>

16      @Query("SELECT * FROM manhwas WHERE id = :id")
17      fun getManhwaById(id: Int): Flow<ManhwaEntity?>
```

```
18
19      @Insert(onConflict = OnConflictStrategy.REPLACE)
        suspend fun insertAll(manhwas: List<ManhwaEntity>)
20
        @Update
21      suspend fun updateManhwa(manhwa: ManhwaEntity)

22      @Query("DELETE FROM manhwas")
23      suspend fun deleteAll()
24  }
25
26
27
28
```

*Tabel 2. ManhwaEntity.kt Modul 5*

```
01          package
    com.example.gracemanhwa_picks.data.local.entity
2
3   import androidx.room.Entity
4   import androidx.room.PrimaryKey
5
6   @Entity(tableName = "manhwas")
7   data class ManhwaEntity(
8       @PrimaryKey
9       val id: Int,
10      val title: String,
11      val author: String,
12      val description: String,
13      val imageUrl: String,
14      val url: String,
15      val isFavorite: Boolean = false
16  )
```

*Tabel 3. ManhwaDatabase.kt Modul 5*

```
01  package
    com.example.gracemanhwa_picks.data.local.entity
2
3   import androidx.room.Entity
4   import androidx.room.PrimaryKey
5
6   @Entity(tableName = "manhwas")
7   data class ManhwaEntity(
```

```
8       @PrimaryKey
9       val id: Int,
10      val title: String,
11      val author: String,
12      val description: String,
13      val imageUrl: String,
14      val url: String,
15      val isFavorite: Boolean = false
16  )
```

*Tabel 4. ManhwaDto.kt Modul 5*

```
01  package com.example.gracemanhwa_picks.data.model

2   import kotlinx.serialization.SerialName
3   import kotlinx.serialization.Serializable
4
5   @Serializable
6   data class ManhwaDto(
7       @SerialName("id")
8       val id: Int,
9
10      @SerialName("title")
11      val title: String,
12
13      @SerialName("author")
14      val author: String,
15
16      @SerialName("description")
17      val description: String,
18
19      @SerialName("imageUrl")
20      val imageUrl: String,
21
22      @SerialName("url")
23      val url: String
24  )
```

*Tabel 5. ManhwaApiService.kt Modul 5*

```
01  package com.example.gracemanhwa_picks.data.model
2
3   import kotlinx.serialization.SerialName
4   import kotlinx.serialization.Serializable
5
```

```
@Serializable
data class ManhwaDto(
    @SerialName("id")
    val id: Int,

    @SerialName("title")
    val title: String,

    @SerialName("author")
    val author: String,

    @SerialName("description")
    val description: String,

    @SerialName("imageUrl")
    val imageUrl: String,

    @SerialName("url")
    val url: String
)
```

*Tabel 6.RetrofitInstance.kt Modul 5*

```
package com.example.gracemanhwa_picks.data.remote

import com.example.gracemanhwa_picks.data.remote.api.ManhwaApiService
import com.jakewharton.retrofit2.converter.kotlinx.serialization.asConverterFactory
import kotlinx.serialization.json.Json
import okhttp3.MediaType.Companion.toMediaType
import okhttp3.OkHttpClient
import okhttp3.logging.HttpLoggingInterceptor
import retrofit2.Retrofit

object RetrofitInstance {

    private const val BASE_URL = "https://manhwagrzzz.free.beeceptor.com"

    private val json = Json {
        ignoreUnknownKeys = true
    }

    private val logging = HttpLoggingInterceptor().apply {
        level = HttpLoggingInterceptor.Level.BODY
```

```
22      }
23
24      private val client = OkHttpClient.Builder()
25          .addInterceptor(logging)
26          .build()
27
28      val api: ManhwaApiService by lazy {
29          Retrofit.Builder()
30              .baseUrl(BASE_URL)
31              .client(client)
32
33  .addConverterFactory(json.asConverterFactory("application/js
34  on".toMediaType()))
                .build()
35              .create(ManhwaApiService::class.java)
36      }
37  }
38
39
```

*Tabel 7.ManhwaRepository.kt*

```
01  package com.example.gracemanhwa_picks.data.repository
2
3   import
4   com.example.gracemanhwa_picks.data.local.dao.ManhwaDao
    import
    com.example.gracemanhwa_picks.data.local.entity.ManhwaE
5   ntity
    import
    com.example.gracemanhwa_picks.data.remote.api.ManhwaApi
6   Service
    import kotlinx.coroutines.flow.Flow
    import kotlinx.coroutines.flow.firstOrNull
7   import java.io.IOException
8   import android.util.Log
9
10  class ManhwaRepository(
11      private val apiService: ManhwaApiService,
12      private val manhwaDao: ManhwaDao
13  ) {
14
15      fun getAllManhwas(): Flow<List<ManhwaEntity>> =
16  manhwaDao.getAllManhwas()
17
        fun getManhwaById(id: Int): Flow<ManhwaEntity?> =
```

```
18  manhwaDao.getManhwaById(id)
19
        suspend fun refreshManhwas() {
20          try {
21              val remoteManhwas =
22  apiService.getAllManhwas()
23              val favoriteManhwas =
    manhwaDao.getAllManhwas().firstOrNull()?.filter {
24  it.isFavorite }?.map { it.id }
                        ?: emptyList()

25              val manhwaEntities = remoteManhwas.map {
26  dto ->
27                  ManhwaEntity(
28                      id = dto.id,
29                      title = dto.title,
30                      author = dto.author,
31                      description = dto.description,
32                      imageUrl = dto.imageUrl,
33                      url = dto.url,
34                  )
35              }
36
37              manhwaDao.insertAll(manhwaEntities)
38
39          } catch (e: IOException) {
40              Log.e("ManhwaRepository", "Gagal refresh
41  manhwas (IO): ", e)
42              e.printStackTrace()
            } catch (e: Exception) {
43              Log.e("ManhwaRepository", "Gagal refresh
44  manhwas (Exception): ", e)
45              e.printStackTrace()
            }
46      }
47      suspend fun updateFavoriteStatus(manhwa:
48  ManhwaEntity, isFavorite: Boolean) {
49          manhwaDao.updateManhwa(manhwa.copy(isFavorite =
    isFavorite))
50      }
51  }

52
53
```

*Tabel 8. Injection.kt Modul 5*

```
01  package com.example.gracemanhwa_picks.di
2
3   import android.content.Context
4   import
    com.example.gracemanhwa_picks.data.local.ManhwaDatabase
    import
5   com.example.gracemanhwa_picks.data.remote.RetrofitInsta
    nce
    import
6   com.example.gracemanhwa_picks.data.repository.ManhwaRep
    ository

7   object Injection {
8       fun provideRepository(context: Context):
9   ManhwaRepository {
10          val database =
11  ManhwaDatabase.getDatabase(context)
            val apiService = RetrofitInstance.api
12          return ManhwaRepository(apiService,
13  database.manhwaDao())
        }
14  }
15
```

*Tabel 9. ManhwaCard.kt Modul 5*

```
001 package
-   com.example.gracemanhwa_picks.presentation.components

2   import android.content.Intent
3   import android.net.Uri
4   import androidx.compose.foundation.clickable
5   import androidx.compose.foundation.layout.*
6   import
7   androidx.compose.foundation.shape.RoundedCornerShape
    import androidx.compose.material.icons.Icons
    import androidx.compose.material.icons.filled.Favorite
8   import
9   androidx.compose.material.icons.outlined.FavoriteBorde
    r
10  import androidx.compose.material3.*
    import androidx.compose.runtime.Composable
    import androidx.compose.ui.Alignment
11  import androidx.compose.ui.Modifier
12  import androidx.compose.ui.graphics.Color
13  import androidx.compose.ui.layout.ContentScale
```

```
14  import androidx.compose.ui.platform.LocalContext
15  import androidx.compose.ui.text.font.FontWeight
16  import androidx.compose.ui.text.style.TextOverflow
17  import androidx.compose.ui.unit.dp
18  import androidx.compose.ui.unit.sp
19  import coil.compose.AsyncImage
20  import
21  com.example.gracemanhwa_picks.data.local.entity.Manhwa
22  Entity
23
    @Composable
    fun ManhwaCard(
24      manhwa: ManhwaEntity,
25      onFavoriteClick: () -> Unit,
26      onDetailClick: () -> Unit,
27      modifier: Modifier = Modifier
28  ) {
29      val context = LocalContext.current
30
31      Card(
32          modifier = modifier
33              .fillMaxWidth()
34              .clickable { onDetailClick() },
35          shape = RoundedCornerShape(16.dp),
36          elevation =
37  CardDefaults.cardElevation(defaultElevation = 4.dp)
38      ) {
39          Box(modifier =
    Modifier.height(IntrinsicSize.Min)) {
40              Row(
41                  verticalAlignment =
    Alignment.CenterVertically
42              ) {
43                  AsyncImage(
                        model = manhwa.imageUrl,
44                      contentDescription = manhwa.title,
45                      contentScale = ContentScale.Crop,
46                      modifier =
47  Modifier.width(120.dp).fillMaxHeight()
                    )
48                  Column(
                        modifier = Modifier.padding(16.dp)
49                  ) {
                        Text(
50                          text = manhwa.title,
51                          style =
52  MaterialTheme.typography.titleMedium,
```

```
                            fontWeight = FontWeight.Bold,
53                          maxLines = 2,
54                          overflow =
55  TextOverflow.Ellipsis
56                      )
                        Spacer(modifier =
57  Modifier.height(4.dp))
                        Text(
58                          text = "By ${manhwa.author}",
59                          style =
    MaterialTheme.typography.bodySmall,
60                          color = Color.Gray
61                      )
                        Spacer(modifier =
62  Modifier.height(8.dp))
63                      Row(
                            modifier =
64  Modifier.fillMaxWidth(),
                            horizontalArrangement =
65  Arrangement.spacedBy(8.dp)
66                      ) {
67                          OutlinedButton(
                                onClick = onDetailClick,
68                              modifier =
69  Modifier.weight(1f)
                            ) { Text("Detail", fontSize =
70  12.sp) }

71                          Button(
72                              onClick = {
73                                  val intent =
    Intent(Intent.ACTION_VIEW, Uri.parse(manhwa.url))
74  context.startActivity(intent)
                                },
75                              modifier =
    Modifier.weight(1f)
76                          ) { Text("Baca", fontSize =
77  12.sp) }
78                      }
79                  }
                }
80              IconButton(
81                  onClick = onFavoriteClick,
82                  modifier = Modifier
83                      .align(Alignment.TopEnd)
                        .padding(8.dp)
84              ) {
```

```
85                  Icon(
86                      imageVector = if
87  (manhwa.isFavorite) Icons.Filled.Favorite else
88  Icons.Outlined.FavoriteBorder,
89                      contentDescription = "Toggle
90  Favorite",
91                      tint = if (manhwa.isFavorite)
92  Color.Red else Color.White
93                  )
94              }
95          }
        }
    }
96
97
98
99
100
101
```

*Tabel 10. Navigation.kt Modul 5*

```
01  package
-   com.example.gracemanhwa_picks.presentation.navigation

2   import androidx.compose.runtime.Composable
3   import androidx.lifecycle.viewmodel.compose.viewModel
4   import androidx.navigation.NavHostController
    import androidx.navigation.NavType
5   import androidx.navigation.compose.NavHost
6   import androidx.navigation.compose.composable
7   import androidx.navigation.navArgument
8   import
9   com.example.gracemanhwa_picks.presentation.screen.Manhwa
10  DetailScreen
    import
    com.example.gracemanhwa_picks.presentation.screen.Manhwa
11  ListScreen
    import
    com.example.gracemanhwa_picks.presentation.viewmodel.Man
12  hwaViewModel
    import
```

```
    com.example.gracemanhwa_picks.presentation.viewmodel.Man
13  hwaViewModelFactory

    @Composable
    fun AppNavigation(
14      navController: NavHostController,
15      factory: ManhwaViewModelFactory
16  ) {
17      val viewModel: ManhwaViewModel = viewModel(factory =
18  factory)
19
20      NavHost(navController = navController,
21  startDestination = "list") {
22          composable("list") {
                ManhwaListScreen(
23                  viewModel = viewModel,
24                  onNavigateToDetail = { manhwaId ->
25              navController.navigate("detail/$manhwaId")
26                  }
27              )
28          }
29          composable(
30              route = "detail/{manhwaId}",
31              arguments = listOf(navArgument("manhwaId") {
32  type = NavType.IntType })
33          ) { backStackEntry ->
                val manhwaId =
    backStackEntry.arguments?.getInt("manhwaId") ?: 0
                ManhwaDetailScreen(
34                  manhwaId = manhwaId,
                    viewModel = viewModel,
35                  onNavigateBack = {
36                      navController.popBackStack()
37                  }
38              )
39          }
40      }
41  }
42
43
44
```

*Tabel 11. ManhwaDetailScreen.kt Modul 5*

```
01  package
-   com.example.gracemanhwa_picks.presentation.screen
```

```
2  import androidx.compose.foundation.layout.*
3  import androidx.compose.foundation.rememberScrollState
   import
4  androidx.compose.foundation.shape.RoundedCornerShape
   import androidx.compose.foundation.verticalScroll
5  import androidx.compose.material.icons.Icons
6  import
7  androidx.compose.material.icons.automirrored.filled.ArrowBack
   import androidx.compose.material3.*
8  import androidx.compose.runtime.Composable
9  import androidx.compose.runtime.LaunchedEffect
10 import androidx.compose.runtime.collectAsState
11 import androidx.compose.runtime.getValue
12 import androidx.compose.ui.Alignment
13 import androidx.compose.ui.Modifier
14 import androidx.compose.ui.draw.clip
15 import androidx.compose.ui.layout.ContentScale
16 import androidx.compose.ui.unit.dp
17 import coil.compose.AsyncImage
18 import
19 com.example.gracemanhwa_picks.presentation.viewmodel.ManhwaViewModel

20 @OptIn(ExperimentalMaterial3Api::class)
21 @Composable
22 fun ManhwaDetailScreen(
23     manhwaId: Int,
24     viewModel: ManhwaViewModel,
25     onNavigateBack: () -> Unit
26 ) {
27     LaunchedEffect(manhwaId) {
28         viewModel.getManhwaById(manhwaId)
29     }
30
31     val manhwa by
32 viewModel.selectedManhwa.collectAsState()

33     Scaffold(
34         topBar = {
35             TopAppBar(
36                 title = { Text(manhwa?.title ?: "Detail
37 Manhwa") },
                    navigationIcon = {
38                      IconButton(onClick =
39 onNavigateBack) {
```

```
    Icon(Icons.AutoMirrored.Filled.ArrowBack,
40  contentDescription = "Kembali")
41                      }
42                  }
43              )
44          }
45      ) { innerPadding ->
46          manhwa?.let { item ->
47              Column(
48                  modifier = Modifier
49                      .padding(innerPadding)
50                      .fillMaxSize()
51                .verticalScroll(rememberScrollState())
52                      .padding(16.dp)
53              ) {
54                  AsyncImage(
55                      model = item.imageUrl,
56                      contentDescription = item.title,
57                      contentScale = ContentScale.Crop,
58                      modifier = Modifier
                            .fillMaxWidth()
59                          .height(300.dp)
60
61  .clip(RoundedCornerShape(16.dp))
62                  )
63                  Spacer(modifier =
64  Modifier.height(16.dp))
65                  Text(item.title, style =
66  MaterialTheme.typography.headlineMedium)
67                  Text("By ${item.author}", style =
    MaterialTheme.typography.titleMedium)
68                  Spacer(modifier =
    Modifier.height(8.dp))
69                  Divider()
                    Spacer(modifier =
70  Modifier.height(8.dp))
                    Text(item.description, style =
71  MaterialTheme.typography.bodyLarge)
72              }
            } ?: run {
73              Box(
                    modifier = Modifier
74                      .padding(innerPadding)
75                      .fillMaxSize(),
76                  contentAlignment = Alignment.Center
77              ) {
78                  CircularProgressIndicator()
```

```
79                 }
80             }
81         }
82 }
83
84
```

*Tabel 12. ManhwaViewModel.kt Modul 5*

```
01  package
-   com.example.gracemanhwa_picks.presentation.viewmodel

2   import androidx.lifecycle.ViewModel
3   import androidx.lifecycle.viewModelScope
4   import
5   com.example.gracemanhwa_picks.data.local.entity.ManhwaE
    ntity
    import
6   com.example.gracemanhwa_picks.data.repository.ManhwaRep
    ository
    import kotlinx.coroutines.flow.MutableStateFlow
7   import kotlinx.coroutines.flow.StateFlow
8   import kotlinx.coroutines.flow.asStateFlow
9   import kotlinx.coroutines.launch
10
11  class ManhwaViewModel(private val repository:
12  ManhwaRepository) : ViewModel() {
13
14      private val _manhwas =
15  MutableStateFlow<List<ManhwaEntity>>(emptyList())
        val manhwas: StateFlow<List<ManhwaEntity>> =
16  _manhwas.asStateFlow()

17      private val _selectedManhwa =
18  MutableStateFlow<ManhwaEntity?>(null)
        val selectedManhwa: StateFlow<ManhwaEntity?> =
19  _selectedManhwa.asStateFlow()

20      private val _isLoading = MutableStateFlow(false)
21      val isLoading: StateFlow<Boolean> =
    _isLoading.asStateFlow()
22
        init {
23          loadManhwas(forceRefresh = true)
24      }
25
26      private fun loadManhwas(forceRefresh: Boolean) {
```

```
27          viewModelScope.launch {
28              if (forceRefresh) {
                    _isLoading.value = true
29                  repository.refreshManhwas()
30              }
31              repository.getAllManhwas().collect {
32  manhwaList ->
33                  _manhwas.value = manhwaList
34                  _isLoading.value = false
                }
35          }
36      }
37
38      fun getManhwaById(id: Int) {
39          viewModelScope.launch {
40              repository.getManhwaById(id).collect {
41                  _selectedManhwa.value = it
42              }
43          }
44      }
45
46      fun toggleFavorite(manhwa: ManhwaEntity) {
47          viewModelScope.launch {
48              repository.updateFavoriteStatus(manhwa,
49  !manhwa.isFavorite)
50          }
51      }
    }
52
53
54
```

*Tabel 13. ManhwaViewModelFactory.kt Modul 5*

```
01  package
-   com.example.gracemanhwa_picks.presentation.viewmodel

2   import android.content.Context
3   import androidx.lifecycle.ViewModel
4   import androidx.lifecycle.ViewModelProvider
5   import com.example.gracemanhwa_picks.di.Injection
6
7   class ManhwaViewModelFactory(private val context:
8   Context) : ViewModelProvider.Factory {
        override fun <T : ViewModel> create(modelClass:
    Class<T>): T {
            if
```

```
9   (modelClass.isAssignableFrom(ManhwaViewModel::class.java)) {
                @Suppress("UNCHECKED_CAST")
10              return
11  ManhwaViewModel(Injection.provideRepository(context)) as T
            }
12          throw IllegalArgumentException("Unknown
13  ViewModel class")
14      }
15  }
16
```

*Tabel 14. Theme.kt Modul 5*

```
01- package com.example.gracemanhwa_picks.ui.theme

2   import android.app.Activity
3   import android.os.Build
4   import
5   androidx.compose.foundation.isSystemInDarkTheme
6   import androidx.compose.material3.MaterialTheme
7   import androidx.compose.material3.darkColorScheme
8   import
    androidx.compose.material3.dynamicDarkColorScheme
9   import
    androidx.compose.material3.dynamicLightColorScheme
10  import androidx.compose.material3.lightColorScheme
11  import androidx.compose.runtime.Composable
12  import androidx.compose.ui.platform.LocalContext
13
14  private val DarkColorScheme = darkColorScheme(
15      primary = Purple80,
16      secondary = PurpleGrey80,
17      tertiary = Pink80
18  )
19
20  private val LightColorScheme = lightColorScheme(
21      primary = Purple40,
22      secondary = PurpleGrey40,
23      tertiary = Pink40
24  )
25
```

```
@Composable
fun GraceManhwa_picksTheme(
    darkTheme: Boolean = isSystemInDarkTheme(),
    dynamicColor: Boolean = true,
    content: @Composable () -> Unit
) {
    val colorScheme = when {
        dynamicColor && Build.VERSION.SDK_INT >=
Build.VERSION_CODES.S -> {
            val context = LocalContext.current
            if (darkTheme)
dynamicDarkColorScheme(context) else
dynamicLightColorScheme(context)
        }

        darkTheme -> DarkColorScheme
        else -> LightColorScheme
    }

    MaterialTheme(
        colorScheme = colorScheme,
        typography = Typography,
        content = content
    )
}
```

*Tabel 15. ConnectivityObserver.kt*

```
package com.example.modul5.util

import kotlinx.coroutines.flow.Flow

interface ConnectivityObserver {
    fun observe(): Flow<Status>

    enum class Status {
        Available, Unavailable, Losing, Lost
    }
}
```

*Tabel 16. MainActivity.kt Modul 5*

```
01 package com.example.gracemanhwa_picks
-
2
```

```
3  import android.os.Bundle
4  import androidx.activity.ComponentActivity
5  import androidx.activity.compose.setContent
6  import androidx.compose.foundation.layout.fillMaxSize
7  import androidx.compose.material3.MaterialTheme
8  import androidx.compose.material3.Surface
9  import androidx.compose.ui.Modifier
10 import androidx.navigation.compose.rememberNavController
11 import
   com.example.gracemanhwa_picks.presentation.navigation.Ap
   pNavigation
12 import
   com.example.gracemanhwa_picks.presentation.viewmodel.Man
   hwaViewModelFactory
13 import
   com.example.gracemanhwa_picks.ui.theme.GraceManhwa_picks
   Theme
14
15 class MainActivity : ComponentActivity() {
16     override fun onCreate(savedInstanceState: Bundle?) {
17         super.onCreate(savedInstanceState)
18         setContent {
19             GraceManhwa_picksTheme {
20                 Surface(
21                     modifier = Modifier.fillMaxSize(),
22                     color =
   MaterialTheme.colorScheme.background
23                 ) {
24                     val navController =
   rememberNavController()
25                     val factory =
   ManhwaViewModelFactory(this)
26
27                     AppNavigation(navController =
   navController, factory = factory)
28                 }
29             }
30         }
31     }
32 }
```

**B. Output Produk**

**C. Pembahasan**

ManhwaDao.kt berisi interface ManhwaDao yang mendefinisikan fungsi-fungsi akses data lokal menggunakan Room. Fungsi-fungsi seperti getAllManhwas(), getManhwaById(), insertAll(), updateManhwa(), dan deleteAll() digunakan untuk mengambil, menyimpan, dan memperbarui data manhwa secara reaktif melalui Flow. ManhwaEntity.kt berisi data class ManhwaEntity sebagai representasi dari entitas dalam database lokal Room. Setiap entitas menyimpan data manhwa seperti id, title, author, description, imageUrl, url, dan isFavorite. Struktur ini memudahkan penyimpanan dan pengelolaan data secara offline.

ManhwaDto.kt berisi data class ManhwaDto yang berfungsi untuk mendeskripsikan struktur data dari API eksternal. Dengan anotasi @Serializable dan @SerialName, KotlinX Serialization digunakan untuk memetakan data JSON ke dalam objek Kotlin. RetrofitInstance.kt berisi konfigurasi singleton Retrofit untuk komunikasi HTTP. Tabel ini menyiapkan JSON parser yang toleran terhadap field tak dikenal (ignoreUnknownKeys = true), logging interceptor, dan pembuatan objek Retrofit dengan ManhwaApiService.

ManhwaRepository.kt berisi layer repository yang menghubungkan data dari API dan database lokal. Repository ini mengimplementasikan caching, sinkronisasi data, dan error handling. Ia juga menyediakan fungsi refreshManhwas() dan updateFavoriteStatus() untuk sinkronisasi data dan pengelolaan status favorit. Injection.kt berisi class Injection sebagai penyedia dependensi ManhwaRepository secara manual. Fungsi provideRepository() mengambil instance database lokal dan Retrofit untuk membentuk repository.

ManhwaCard.kt sebagai komponen UI berbasis Jetpack Compose yang menampilkan kartu informasi manhwa. Tabel ini memuat elemen visual seperti gambar, judul, nama penulis, tombol detail, tombol baca, dan ikon favorit yang dapat diklik. Navigation.kt berisi konfigurasi NavHost menggunakan Jetpack Compose Navigation. Aplikasi memiliki dua layar: daftar manhwa (list) dan detail manhwa (detail/{manhwaId}), dengan pengelolaan argument dan ViewModel menggunakan factory.

ManhwaDetailScreen.kt menampilkan layar detail dari suatu manhwa tertentu. Menggunakan AsyncImage, Text, dan Scaffold, layar ini menampilkan informasi lengkap manhwa dan memungkinkan kembali ke layar sebelumnya dengan ikon kembali. ManhwaViewModel.kt berisi ViewModel yang mengatur aliran data antara repository dan UI. Menyediakan StateFlow untuk semua manhwa dan manhwa yang dipilih, serta fungsi untuk memuat data awal, mengambil manhwa berdasarkan ID, dan mengubah status favorit.

ManhwaViewModelFactory.kt menampilkan factory class yang digunakan untuk menghasilkan instance ManhwaViewModel dengan dependensi yang tepat dari Injection. Hal ini diperlukan untuk integrasi dengan sistem ViewModel Compose. Theme.kt berisi konfigurasi tema aplikasi. Digunakan untuk menerapkan skema warna terang dan gelap secara otomatis atau dinamis, sesuai pengaturan sistem dan API level perangkat.

ConnectivityObserver.kt menampilkan interface yang memungkinkan observasi status konektivitas jaringan secara reaktif. Interface ini berisi fungsi observe() dan enum Status untuk memantau kondisi seperti Available, Lost, dan lainnya. MainActivity.kt

dalamnya dipanggil GraceManhwa_picksTheme, diset Surface, dan digunakan AppNavigation untuk mengelola navigasi antar layar menggunakan NavController.

## Tautan Git

Berikut adalah tautan untuk semua source code yang telah dibuat.

natnutnot/PrakMobile at master + https://github.com/natnutnot/Mobile