Telkom University
PURWOKERTO

PEMROGRAMAN PERANGKAT BERGERAK S1SE-06-1 [YIS]

Pertemuan 1: Pengenalan Mata Kuliah

Institut Teknologi Telkom Purwokerto

Bridging Technology for Humanity

Pengalaman Kerja dan Organisasi

Menuju Tel-U Purwokerto

Ketua
HIMPASIKOM UGM (2023-2024)

Ketua Bidang Pendidikan dan Pelatihan
BEM FIKOM UMI (2021-2022)

Anggoa
IKPMTU Makassar (2019-2021)

Anggota
Encrypt Study Club (2018-2020)

Anggota
Linux Study Club (2019-2020)

Pendiri
Lentera Lipuku (2018-Sekarang)

Lecturer
Institut Teknologi Telkom Purwokerto (2024-Now)

Mobile Team Lead
Universitas Gadjah Mada (2023-Now)

Academic Instructor
Alterra Indonesia (2023-2024)

Technology Team Lead
PT Tilikan Indonesia (2023)

Assistant Laboratory and Developer
Universitas Muslim Indonesia (2019-2022)

Mobile Developer
Inievent.com (2021)

Assistant Instructor
Kementerian Perindustrian Republik Indonesia (2021)

Yudha Islami Sulistya, S.Kom., M.Cs.
Faculty member of Department of Informatics
Telkom University
yudhaislami@telkomuniversity.ac.id

Research Focus

He specializes in machine learning, particularly ensemble learning, and software engineering. His research focuses on developing and optimizing ensemble learning algorithms and software systems to enhance performance and efficiency in various applications.

Research Interests

Ensemble Learning: Development and optimization of ensemble learning algorithms to improve predictive accuracy and robustness in machine learning models.

Transfer Learning: Exploration and implementation of transfer learning techniques to enhance the performance of models across different tasks and domains with limited data.

Software Engineering: Design and development of efficient and scalable software systems, focusing on the integration of advanced machine learning algorithms for practical applications.

Selected Publications

- FT Admojo, YI Sulistya: Analysis of the performance of the Stochastic Gradient Descent (SGD) algorithm in classifying formalin tofu, Indonesian Journal of Data and Science, 3 (1), 1-8, 2022.
- YI Sulistya, C Danuputri: Comparative analysis of reduction techniques using dimensional reduction and cross-validation methods on the breast cancer dataset, Indonesian Journal of Data and Science, 3 (2), 82-88, 2022.
- YI Sulistya, ETB Bangun, DA Tyas: CNN Ensemble Learning Method for Transfer Learning: A Review, ILKOM Jurnal Ilmiah, 15 (1), 45-63, 2023.
- AR Manga, AN Handayani, HW Herwanto, RA Asmara, YI Sulistya: Analysis of the Ensemble Method Classifier's Performance on Handwritten Arabic Characters Dataset, ILKOM Jurnal Ilmiah, 15 (1), 186-192, 2023.
- PLL Belluano, P Purnawansyah, YI Sulistya, L Saiman, K Kasmira: Technical guidance on the use of xSIA for academic reporting of students at SDN No. 133 Kabupaten Takalar, Ilmu Komputer untuk Masyarakat, 2 (1), 49-54, 2023.
- YI Sulistya, A Musdholifah, C Sapuletea, ETB Bangun, H Hamda, S Anjani, Prediction and Analysis of Rice Production and Yields in the World Using Ensemble Learning Techniques, ILKOM Jurnal Ilmiah 16 (2), 115-124

Future Research

- Ensemble Machine Learning for Enhanced Tourism Prediction An Error-Modified Adaboost Algorithm for Indonesian City Visitors
- Enhancing Formalin Detection in Tofu Using Ensemble Learning on Aroma Data
- A Deep Learning Approach to Noni Fruit Ripeness Classification Using Transfer Learning
- Classification of Mango Leaf Disease Using MobileNetV2 Transfer Learning Model
- Machine Learning Based Application Development for Research Interest Mapping Using Scholar Crawling Data

Social Media

https://github.com/yudhaislamisulistya

https://www.linkedin.com/in/yudhaislamisulistya/

https://instagram.com/yudhaislamisulistya/

https://yudhaislamisulistya.my.id/

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Aplikasi Perangkat Bergerak

Course Profile

Outline

- Learning scheme
- Course rules
- Scoring
- Syllabus
- References
- Mid-term & Final Project Description

Learning scheme

- Self-directed & Problem-based Learning evaluation :
  - Quiz / Assignment
  - Practice
  - COTS
  - Mid-term Project
  - Final Project

Course rules

- Just listen what the lecturer tells you
- Cheating and plagiarism, max score is E
- Attendance is less than 75%, max score is C

Scoring (may change)

- Quiz & Assignment (15%)
- Practice (30%)
- Mid-term Project (20%)
- COTS (10%)
- Final Project (25%)

Syllabus

- Mobile Technology
- Intro Flutter & Dart
- Layout part 1
- Layout part 2
- User Interaction
- Navigation & Notification
- Review
- Mid-term Project Presentation
- API Perangkat Keras
- Data Storage 1
- Data Storage 2
- Maps & Firebase Notification
- Networking
- Data Storage 3
- Review
- Final Project Presentation

Any question?

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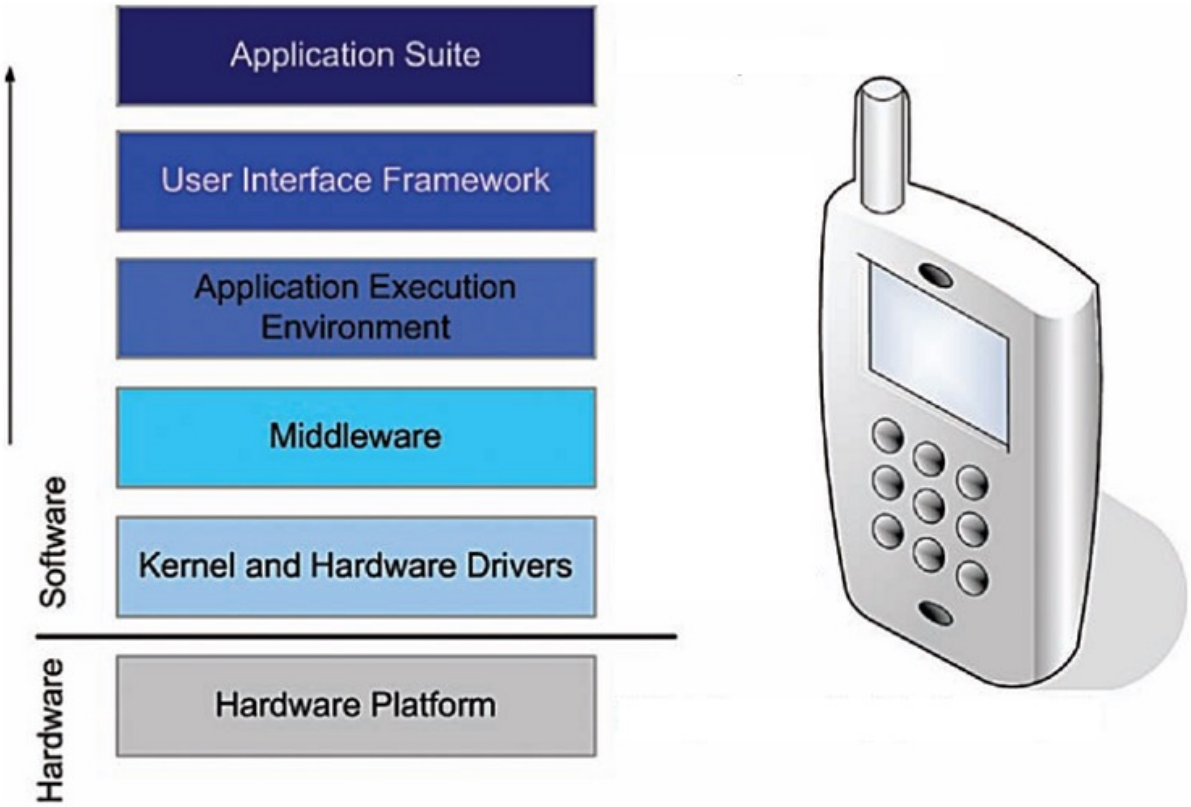
Mobile Technology

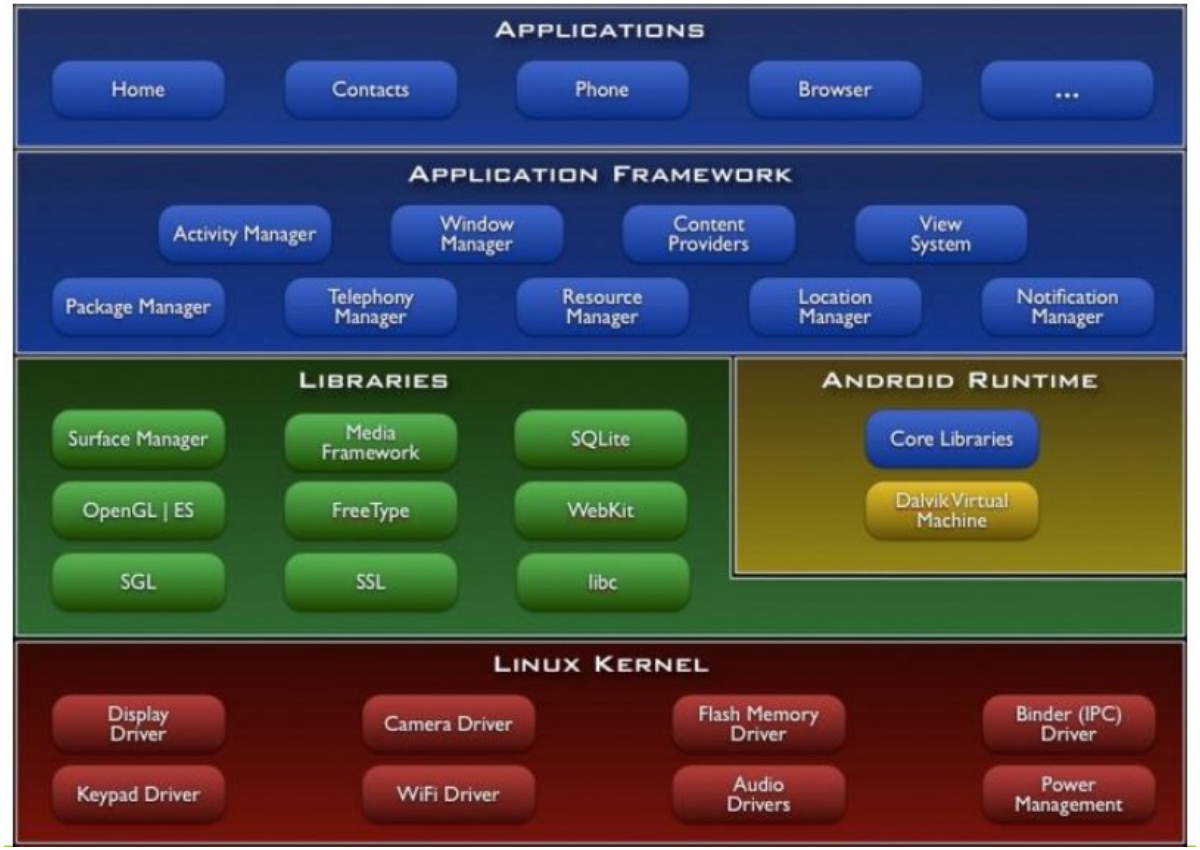
Outline

- Mobile Application Architecture
- Mobile Technologies & SDKs
- Tools

Mobile Application Architecture



Android Application Architecture



Mobile Technologies Now

- Location-based Service
  - Maps, Routes
- Motion sensor
  - Accelerometer, Gyroscope, Camera
- Near Field Communication
- AI Camera
  - Image beautifying, Video stabilizer
- Payment & Banking Apps

Mobile App SDKs

- Native
  - Android SDK (Google)
  - iOS SDK (Apple)
  - Xamarin (Microsoft)
  - Windows Phone SDK (Microsoft, discontinued)
  - BlackBerry SDK (BlackBerry Ltd.)
- Hybrid
  - Cordova (Apache)
  - React Native (Facebook)
  - Flutter (Google)
  - Ionic
  - WebWorks (BlackBerry Ltd.)

Mobile App Development Challenges

- Small screen
- Various mobile device screen resolution and width
- Depend on internet connection
- Data Storage (full offline / full online / hybrid)

Programming Language for Mobile

- Java
- Kotlin
- C# / C++
- Objective-C
- Swift
- Javascript
- Dart

In this course, we will use:

- Dart
  - One of the most popular language
  - JS-like, Simple
- Flutter SDK
  - One of the mobile hybrid platforms
  - Lots of docs & tutorials

Mobile App with Database

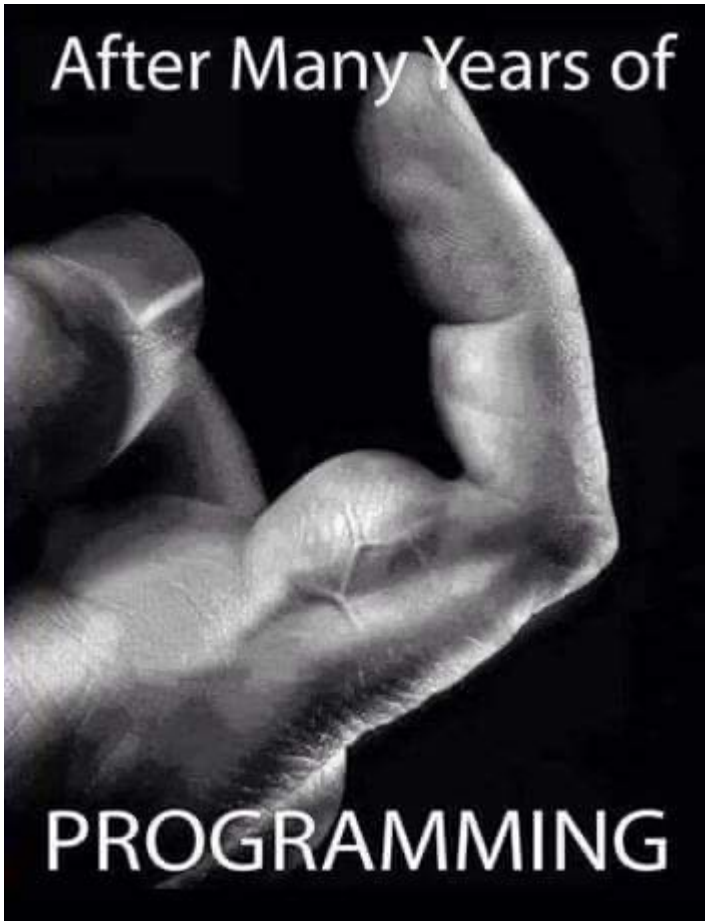
- Offline (SQLite)
- Online
  - Realtime (Firebase)
  - Web service (REST)

Mobile Developers Type

- UI/UX Designer
  - Balsamic Wireframe
  - Marvel App
  - Figma
  - Miro

Mobile Developers Type

- Full-stack Developer
  - Translate from design into layouts
  - Create the controller to bridge the frontend and backend



Tools Makes You Better

- IDE
  - Visual Studio Code
  - Android Studio
- Emulator
  - Use if you don’t have Android phone
  - Warning: Uses lots of RAM, some hardwares / APIs don’t work properly

Any question?

References

- https://docs.flutter.dev/

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THANK YOU