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PRAKTISI MENGAJAR

Implementation of Object Oriented Programming as Quick Development Pattern in Software Industry

Applying Java : Model-View-Controller Software Architecture

Dipl.-Ing. I Ketut Kartika Tanjana
PT Dimata Sora Jayate
www.dimata.com

Dimata's Founder

Dipl.-Ing. I Ketut Kartika Tanjana

FOUNDER & CEO

Entrepreneurship

- 2020-now : Founder & Chairman of PT Bali Agro Investama
- 2020-now : Founder & Chairman of CV Hita Widya Utama
- 2019 – now : Founder eSemeton.com marketplace UMKM, Koperasi dan Petani
- **2002 – now : Founder and Director of PT. Dimata® Sora Jayate**
- 2004 – now : Founder and owner of Yashoda Minimarket Chain

- ORGANIZATION
  - 2006 – now : Chairman of ASPILUKI BALI (Software Development Association)
  - 2010-2011 : Chairman of IMA Bali (Indonesian Marketing Association) Bali

Professional Experiences

- 2000 : Software Project Manager at Balicamp
- 1999 : Web & C++ Programmer at Equinta – California USA
- 1997-1999 : Smart Avionics Engineer at Indonesian Aircraft Industry
- 1996-1997 : Designer & Programmer for Digital Processor Test Board at Lucent Technologies Germany
- 1995 : Programmer of Adaptive Digital Filter at Lucent Technologies & AT&T Germany

Education

- 1992-1997 : Telecommunication Engineer - Master Degree **at George S. Ohm Technology University in Germany**
- **Scholarship from Indonesia Government (STAID) initiated by Mr. B.J. Habiebie (Former President of Indonesia)**
- Studien Collage – Munich Germany : 1991 – 1992
- University of Gajah Mada : 1990
- SMAN 4 Denpasar : 1987-1990

Awards & Achievements

- 2017 : Money & I Award as Nominee of Technopreneur
- 2011 & 2010 : Telkom Indigo Fellowship winner for Hotel solutions
- 1997 : The first and fastest student finished his study from the Indonesian student group
- 1994 : Awarded as one of the best student in Telecommunications Engineering Faculty at GSO
- 1989 : 4th best High School Student in Bali
- 1989 : 1st Best High School Student in Denpasar
- 1987 -1990 : Always the 1st Best Student in High School
- 1984-1987: Always on of the big three of Best Student sin Middle school

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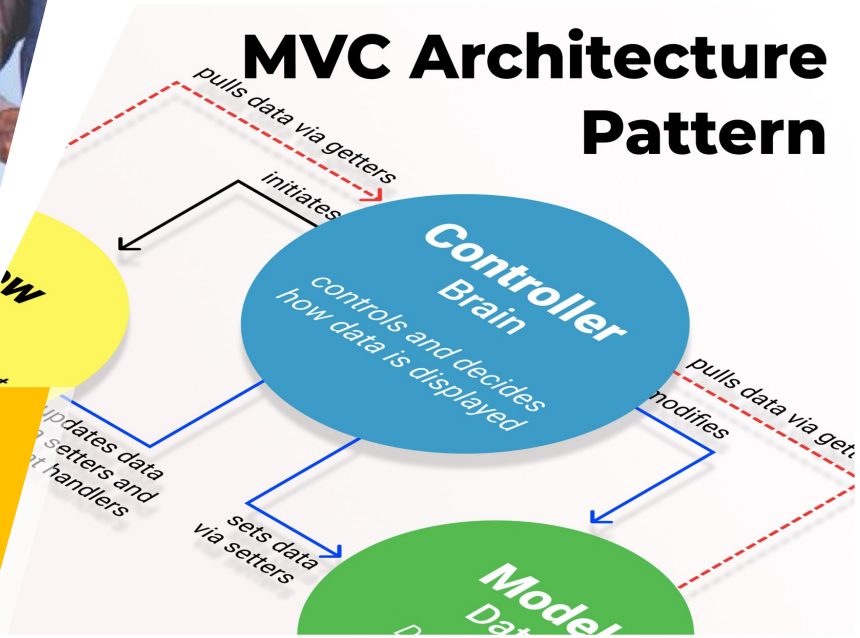

Target and Objectives

- Attendances have industrial knowledge and experiences of implementing Object Oriented Programming based on Java as Quick Development Pattern , applying : Model-View-Controller Software Architecture


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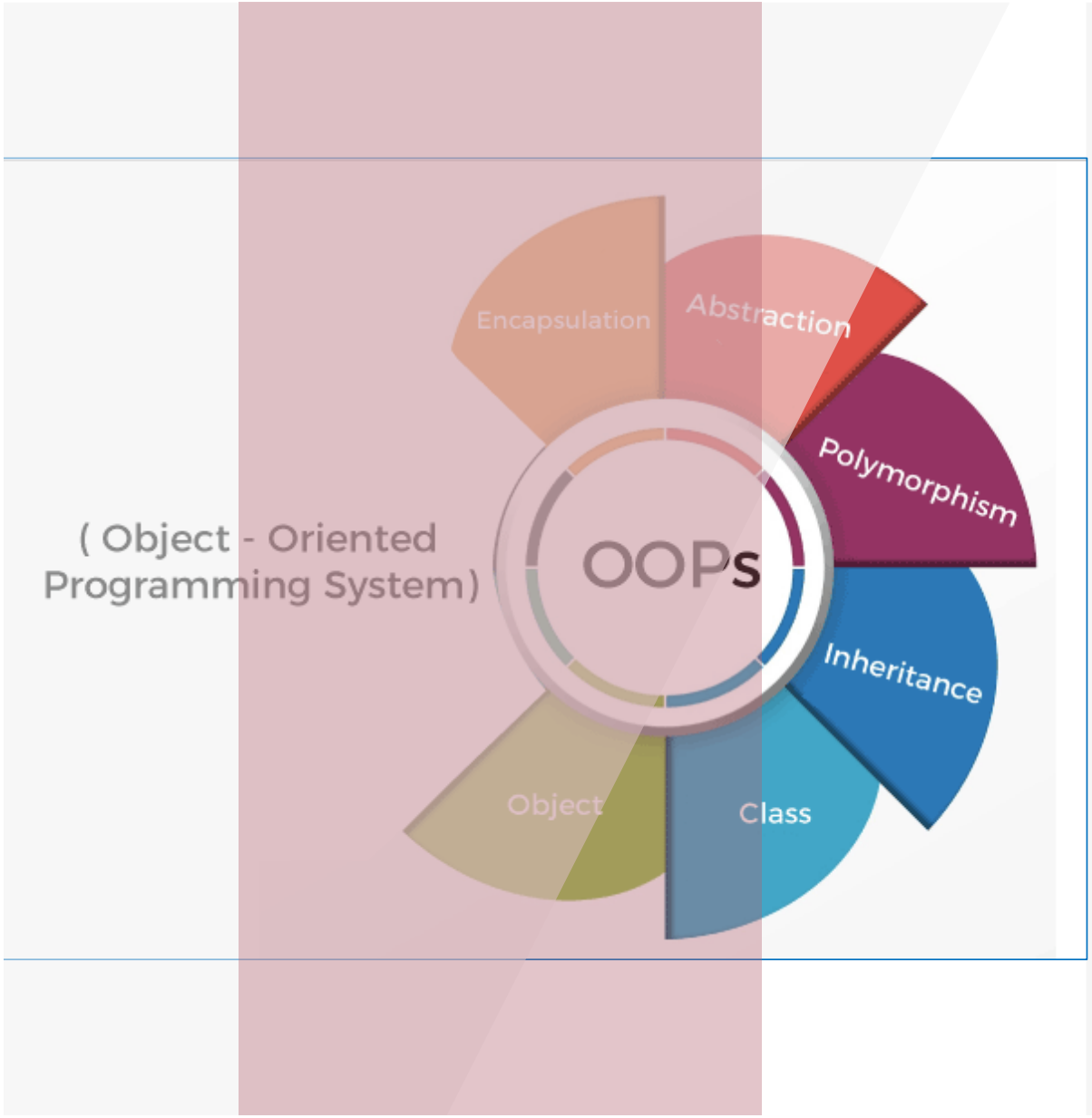
Day to Day Activities in Software Company is Analysis, Design, Construct and Test Software as Solutions of Business or Life
Very important to have software development pattern for continuous software development and sustainable business



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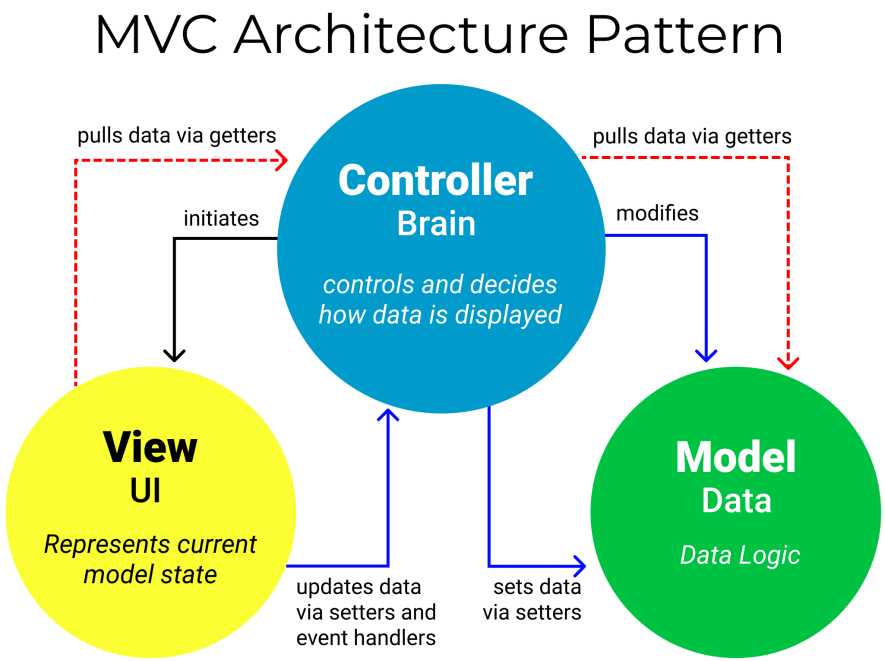
Object Oriented Programming

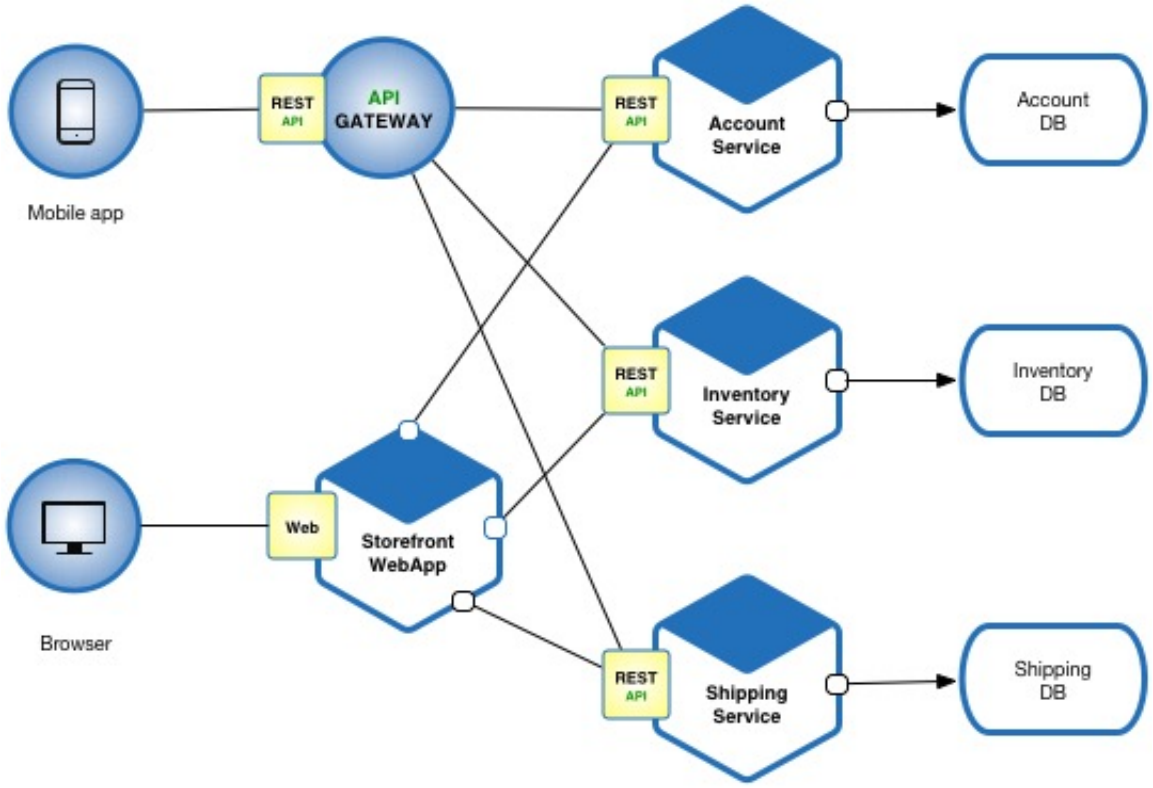
"Natural Implementation of Software Technology"

Software Architecture



Software Architecture

Microservices Architecture

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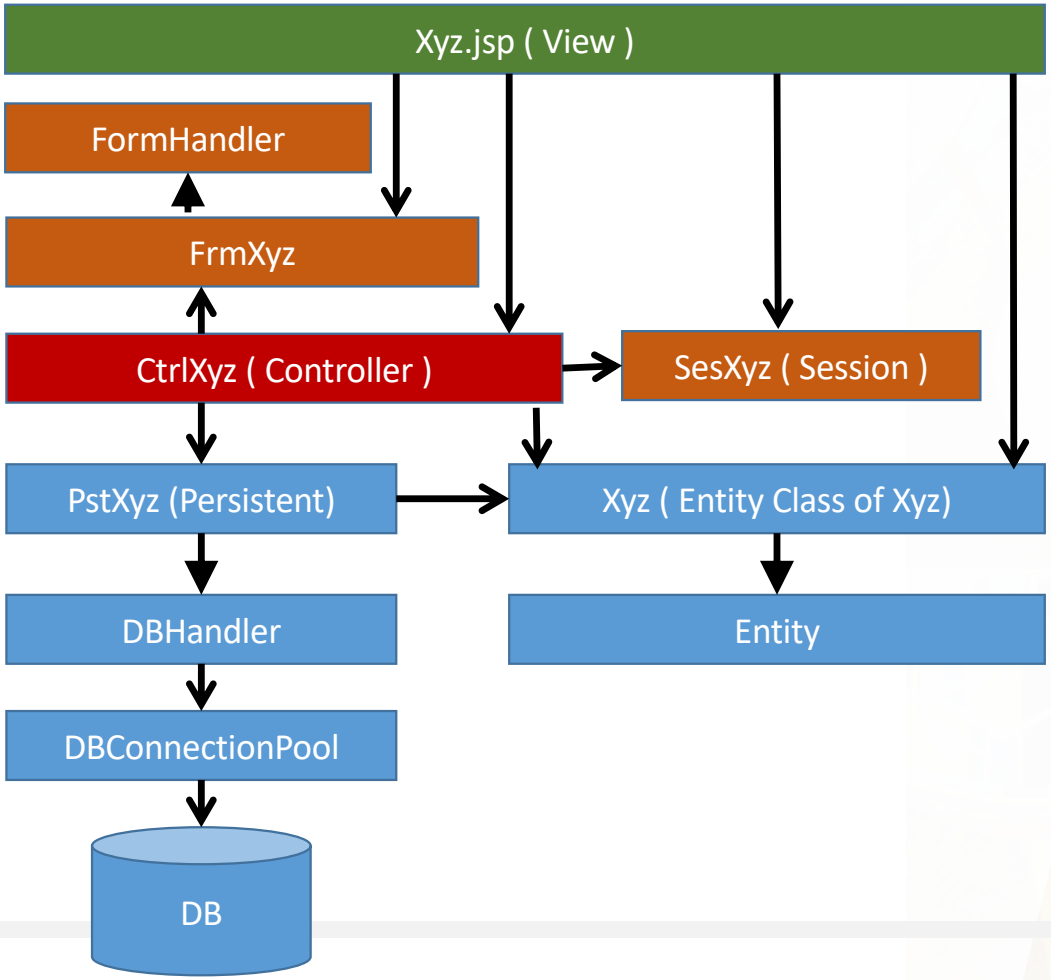
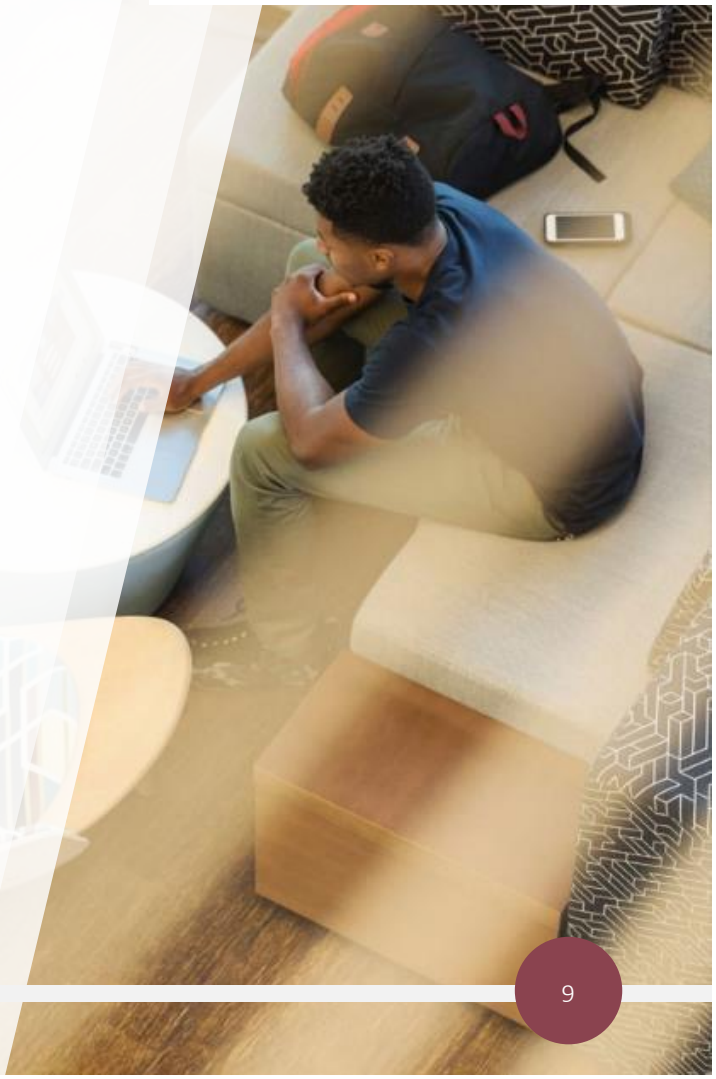
Achieving Programming Skill through Experiencing
Object Oriented Programming is “art” to solve real problem through breaking down it into pieces of digital objects

Dimata Quick Development Pattern (Dimata QDEP)





QDEP - Components

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Entity & Persistent

- Represent objects
- Interface to database

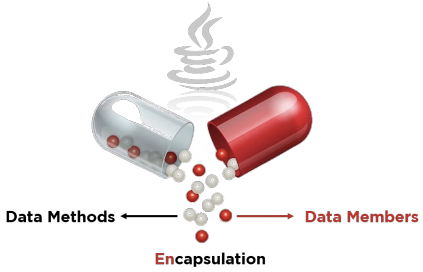
Controller & Session

- Define flows
- “Middle man” between UI & Entity
- Session : Group class for data calculation and report

Form & JSP(Java Server Pages)/Servlet

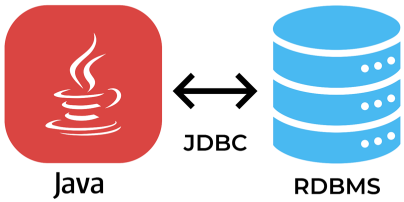
- JSP : generate User Interface (UI)
- Form : map html form to Entity
- Servlet : generate UI for reporting functions

Model : Entity & Persistent



Entity is
POJO (Plain Old Java Object)

- Class represents simple modeling of a real object
- Implement encapsulation of data
- Shared among software components and layers



Persistent is
Database Agent

- Map of Entity to DB-Table
- Extends DBHandler
- Access database through DB connection pool
- Methods : insert, fetch, update, delete, list

Entity

- Class Name shall be started with capital letter, then the rest should flow Camel-Case rule
  Example : BillMain
- Extends “Entity” parent class.
- Import class statement :
  - import com.dimata.qdep.entity.*;
- Attributes / member variable which represent RDBMS table field.
- Accessor methods (setter and getter methods).
- Note: All member variables (attributes) of the Entity have to be initialized, this avoiding NullPointerException

Note : Silakan lihat file materi_Dimata_QDEP_layer_model.pdf

Persistent

- Class Name
  - Format name for persistent class name is *Pst* followed by *Entity Class name*. E.g.: PstBillMain
- Extends DBHandler class.
- Implements I_DBType, I_Language, I_DBInterface and I_PersintentExc interfaces.
- Import classes: java and qdep packages
- Constanta
  - Table Name
    - Table name is *String* datatype with standart format is *TBL_* followed by *Table name*.
    - Example : TBL_BILLMAIN.
  - Table fields Index
    - Table fields index are *int* datatype with format is *FLD_* followed by *Field names*.
    - Example : FLD_BILL_OID
- Table Maps:
  - Table fields name : Fields name is the same name as defined in database.
  - Table fields type : Fields type is the type of each fields name as defined in I_DBType.
- Implementing I_DBInterface & I_PersintentExc interfaces.

Note : Silakan lihat file materi_Dimata_QDEP_layer_model.pdf

Class Controller

- Fungsi : sebagai pengatur alur proses program spt : membuat data, membaca data, mengupdate data, menghapus, list data
- Class name : CtrlNamaClass.java
- extends Control
- implements I_Language
- import com.dimata.qdep.system.*;
- import com.dimata.qdep.form.*;
- import com.dimata.qdep.db.*;
- import com.dimata.myqdep.entity.BillMain;
- import com.dimata.myqdep.entity.PstBillMain;

Note : Silakan lihat file materi_Dimata_QDEP_layer_controller.pdf

Class Form

- Fungsi : meng-extract data di form html yang di submit dari browser menjadi object ”entity”
- Nama class : FrmNamaClass.java
- extends FRMHandler

- implements I_FRMInterface, I_FRMType

- import com.dimata.qdep.form.FRMHandler;
- import com.dimata.qdep.form.I_FRMInterface;
- import com.dimata.qdep.form.I_FRMType;

Note : Silakan lihat file materi_Dimata_QDEP_layer_view.pdf

Java Server Page

- Implementasi java servlet
- Dengan model injeksi code “Java” dalam Html
- Sebagai user interface generator di server side
- Html form digunakan untuk menerima input data dari user
- Di submit ke server dalam bentuk html request
- Diproses di server sebagai servlet post-compiled class
- Formating dan styling menggunakan Css dan javascript

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Conclusion :
Object Oriented Programming is Fundamental Technology

- OOP enables complex system to be broken down into simple pieces
- OOP enables realization of comprehensive systems
- OOP gives fun of software development to programmers
- OOP enables collaboration among programmers

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THANK YOU

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