

Use Case Diagram

Use Case Diagram?

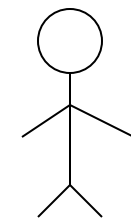
- ▶ Use case diagram menggambarkan fungsionalitas yang diharapkan dari sebuah sistem. Yang ditekankan adalah “apa” yang diperbuat sistem, dan bukan “bagaimana”.
- ▶ Sebuah use case merepresentasikan sebuah interaksi antara aktor dengan sistem.

Fungsi Use Case Diagram

- ▶ Memudahkan komunikasi antara *developer* dengan *end user*
- ▶ Use case diagrams digunakan untuk menggambarkan, menentukan, membangun gagasan, dan mendokumentasikan *behaviour* dari sistem [*yang diharapkan*], selama proses analisa kebutuhan dan perancangan
- ▶ Berisi : Actor, Use Case, relationship

Actor

- ▶ Actor adalah sesuatu yang berinteraksi dengan sistem
- ▶ Actor memberikan atau menerima sesuatu dari sistem
- ▶ Actor berada di luar sistem
- ▶ Actor bisa berupa : manusia, eksternal sistem yang lain (hardware atau software), sensor, timer / waktu



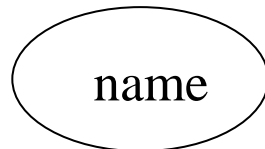
name

Pertanyaan Pembantu menentukan Actor

- ▶ Siapa yang menggunakan sistem?
- ▶ Siapa yang memasang sistem?
- ▶ Siapa yang memulai sistem?
- ▶ Siapa yang memelihara sistem?
- ▶ Siapa yang mematikan sistem?
- ▶ Sistem lain apa yang menggunakan sistem ini?
- ▶ Siapa yang mengambil informasi dari sistem?
- ▶ Siapa yang menyediakan informasi ke sistem?
- ▶ Apakah segala sesuatu terjadi secara otomatis pada waktu saat ini?

Use Case

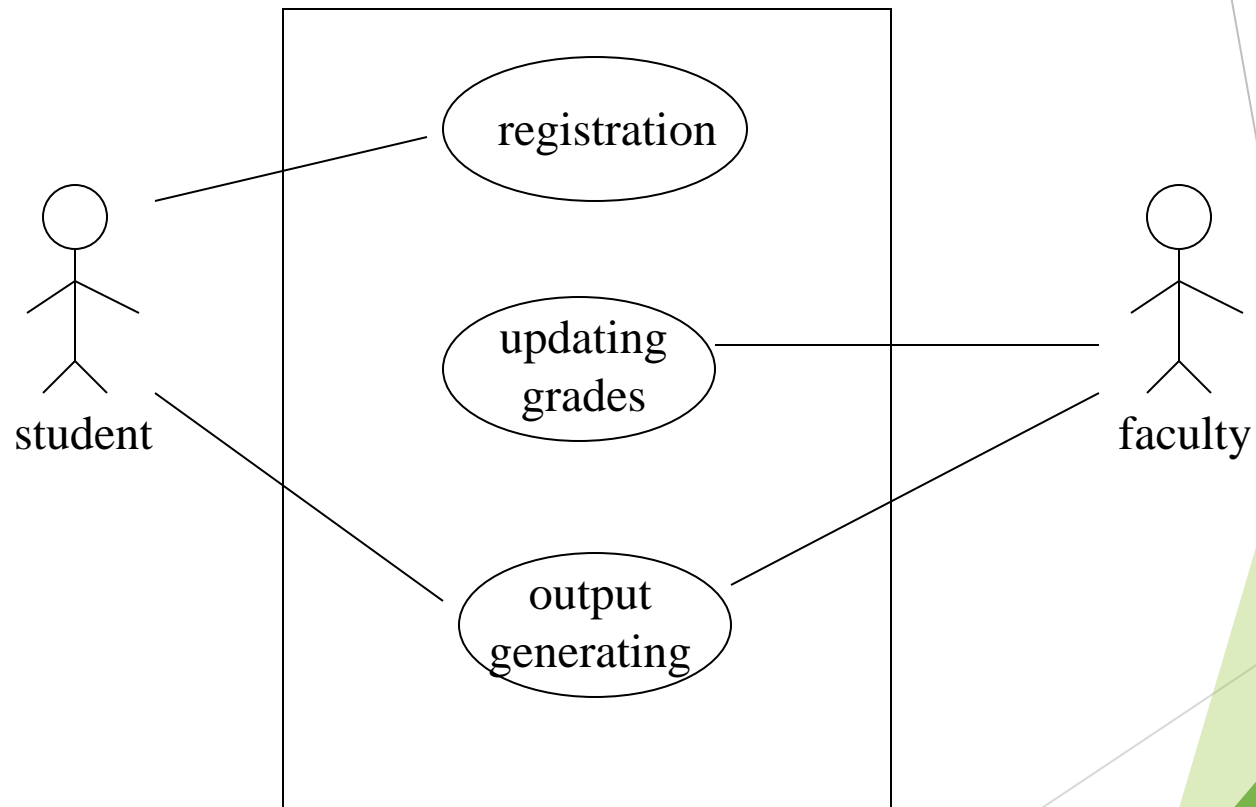
- ▶ Fungsionalitas atau kemampuan dari sistem
- ▶ Menggambarkan urutan interaksi / kejadian antara satu atau lebih aktor dan sistem.



Pertanyaan Pembantu menentukan Use Case

- ▶ Fungsi apa yang diinginkan actor dari sistem?
- ▶ Apakah sistem menyimpan informasi? Actor apa yang akan membuat, membaca, mengubah atau menghapus informasi tersebut?
- ▶ Apakah sistem perlu untuk memberitahukan actor tentang perubahan kondisi internal?
- ▶ Apakah ada kejadian eksternal yang perlu diketahui sistem? Actor apa yang memberitahukan sistem tentang kejadian tersebut?

Contoh Penggambaran Use Case Diagram

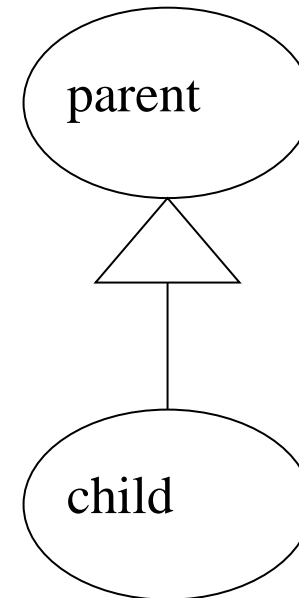
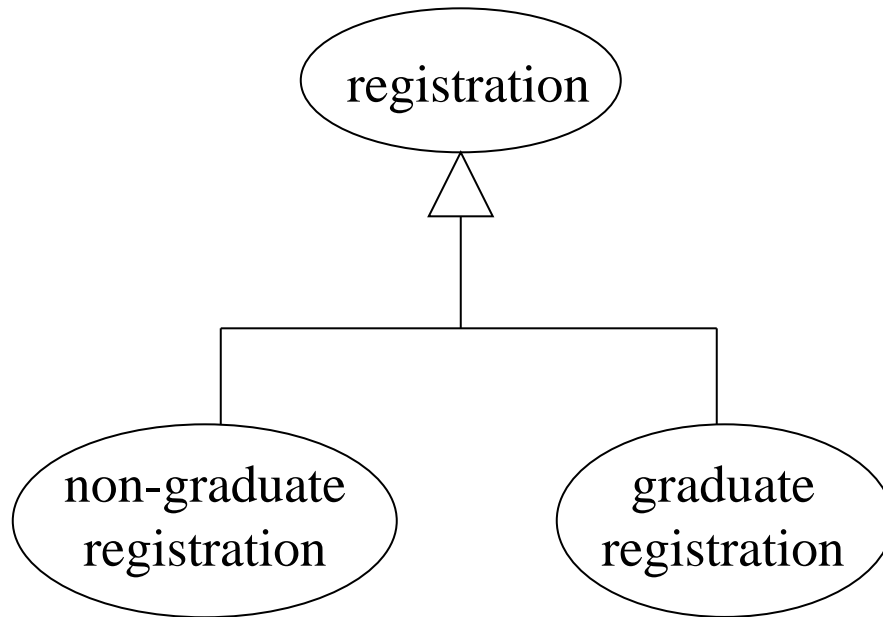


Relationship

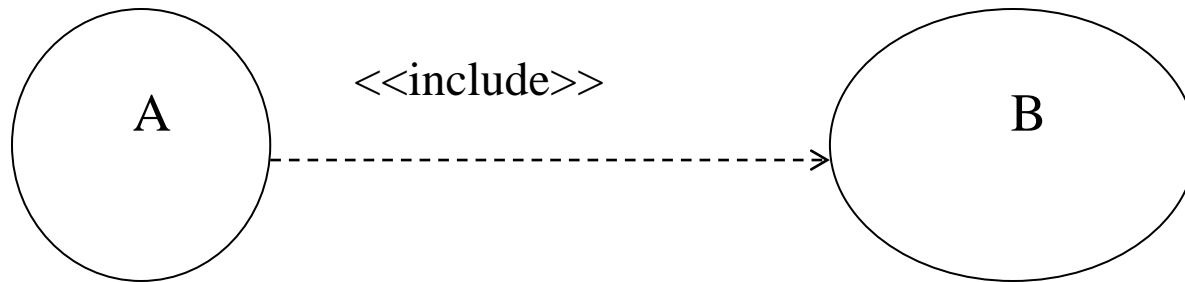
- ▶ Generalization
 - ▶ Use Case yang merupakan specialized dari Use case lain (inherit) → garis tegas + segitiga
- ▶ Include / uses (UML ver < 1.3)
 - ▶ Use Case yang digunakan secara penuh oleh satu atau lebih use case lain → garis putus-putus
- ▶ Extend
 - ▶ Use yang digunakan secara optional berdasarkan suatu kondisi tertentu → garis putus-putus

Generalization

- ▶ Child mewarisi fungsionalitas dari parent-nya
- ▶ Child menambahkan suatu fungsionalitas baru
- ▶ Contoh lain :



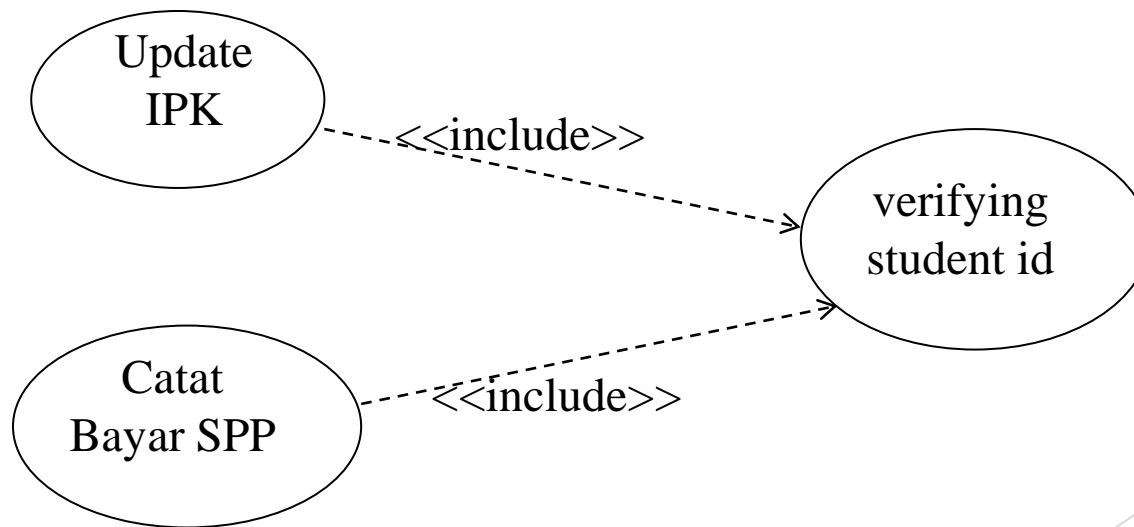
Include



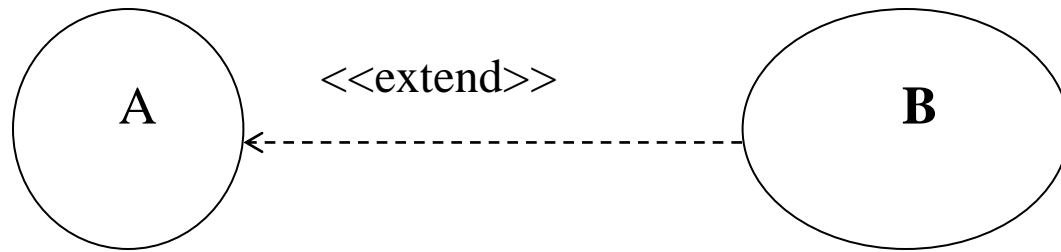
- Secara Explicit use case A menggunakan use case B
- Use Case B tidak pernah berdiri sendiri, tapi selalu merupakan bagian dari use case lain

Include , Contoh

- Include juga bermanfaat untuk reuse usecase, yaitu use case yang digunakan lebih dari 1 use case

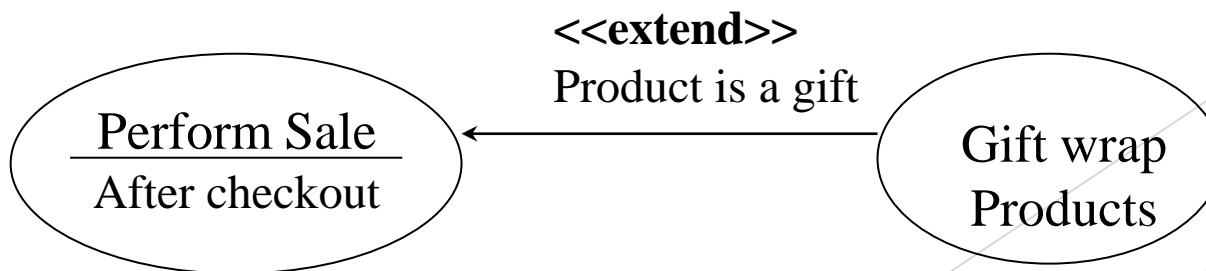
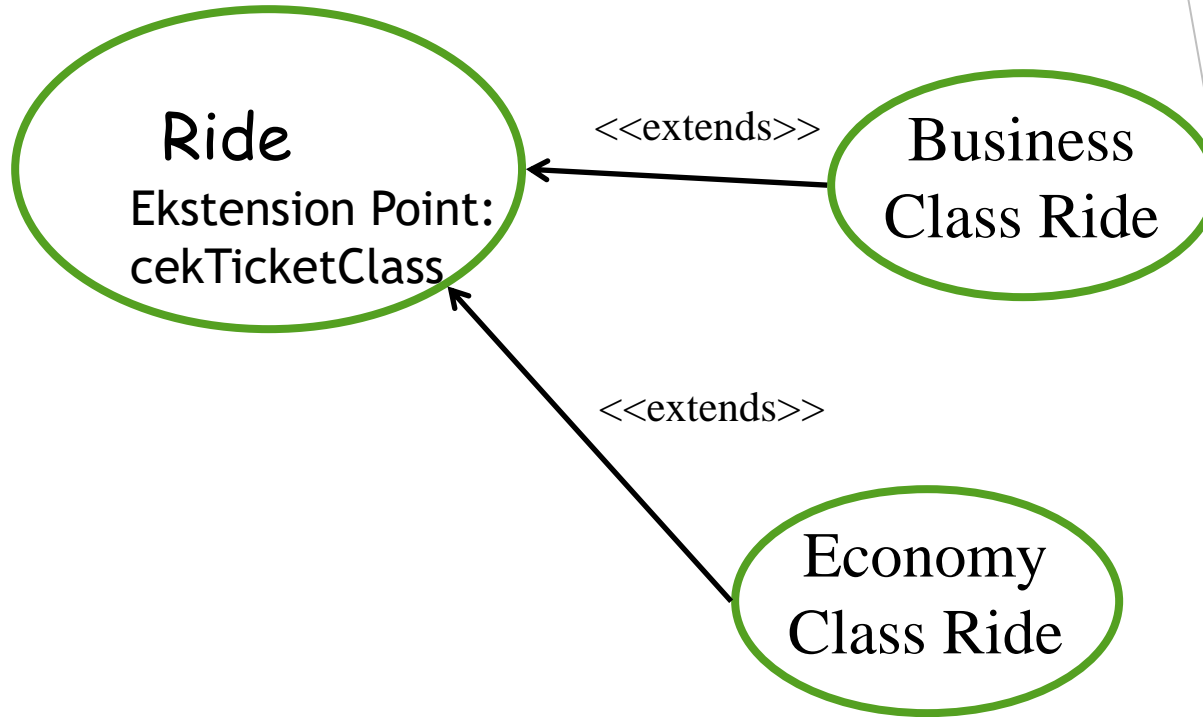


Extend

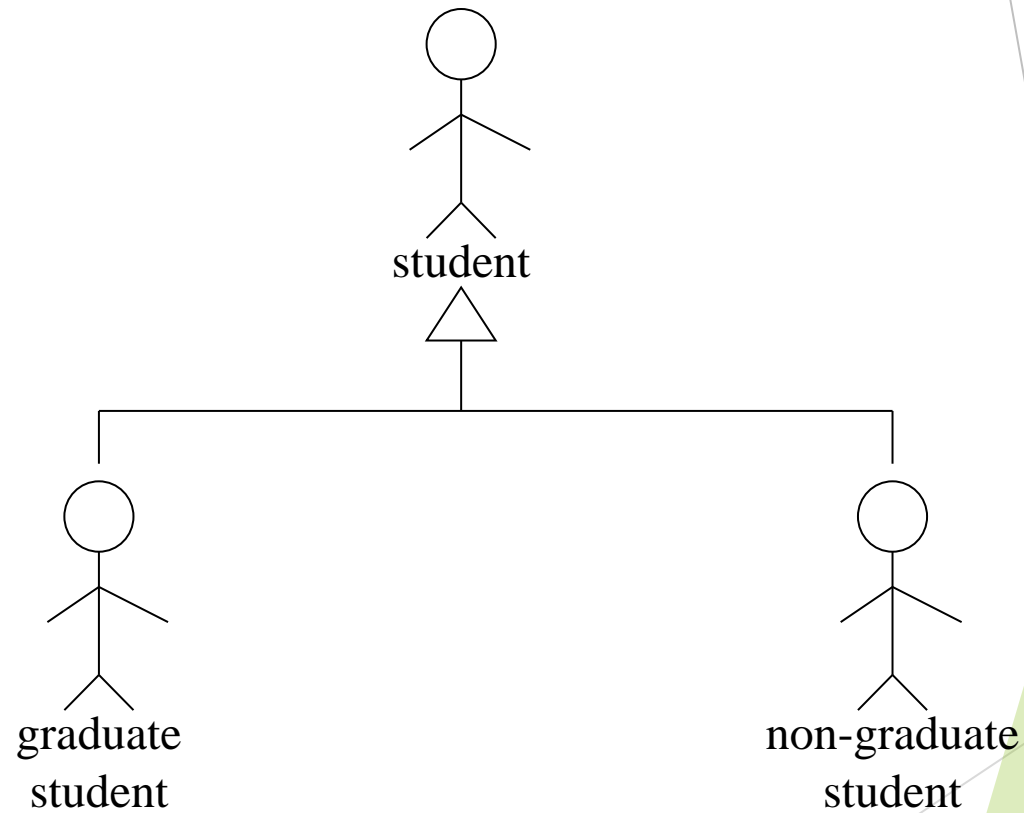


- ▶ Use Case A bisa secara implisit menggunakan Use Case B pada suatu titik tertentu yang disebut extension point
- ▶ Use Case A bisa stand alone atau harus bersama dengan Use Case B tergantung kondisi tertentu

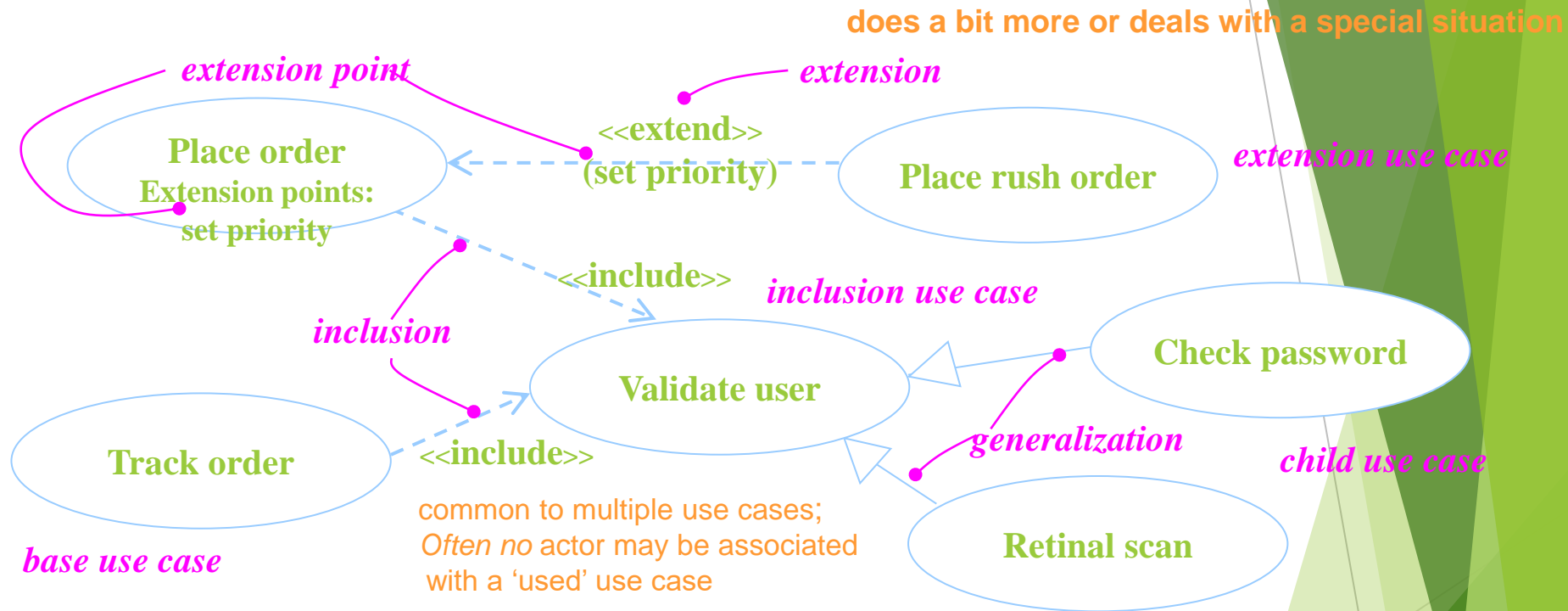
Extend, Contoh



Generalization Actor



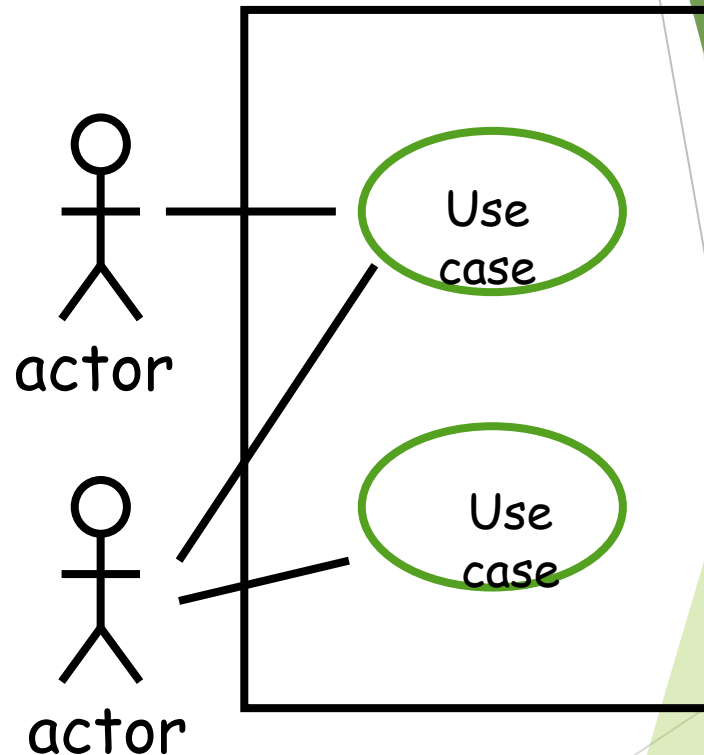
Contoh



- **Track Order** - Obtain and verify the order number; For each part in the order, query its status, then report back to the user.
- **Place Order** - Collect the user's order items. (set priority). Submit the order for processing.

Use Case -- Actor

- ▶ Actor dan Use Case terhubung dengan relasi Asosiasi, yang berarti bisa saling bertukar pesan
- ▶ Gambar Kotak menunjukkan batasan sistem
- ▶ Terdapat Primary Actor dan Secondary Actor

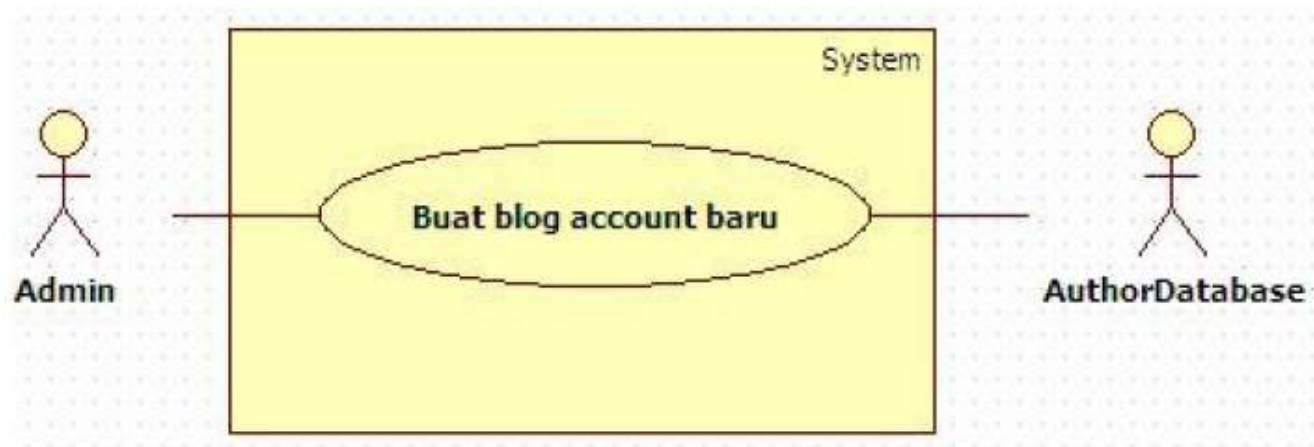


Contoh Use Case Diagram

- ▶ Berikut ini akan diberikan contoh use case diagram langkah per langkah mulai dari skenario hingga dokumentasi
- ▶ Sumber : Pemodelan Sistem Perangkat Lunak, Budi Susanto

Capture User Requirement

- ▶ Contoh(Req.A.1):
 - ▶ Weblog content management system akan membolehkan administrator untuk membuat blog account baru, rincian data personal blogger baru diverifikasi menggunakan database penulis.
- ▶ Blog Features
 - ▶ Weblog, atau blog, awalnya digunakan oleh pembuat suatu web untuk menuliskan segala sesuatunya.
 - ▶ Blogger mengirimkan entri baru ke sistem, administrator mengalokasikan account blog, dan sistem pada umumnya menyediakan ciri lain, seperti RSS feeds.



Tipe Informasi Deskripsi

Use Case

Use case description detail	What the detail means and why it is useful
Related Requirements	Some indication as to which requirements this use case partially or completely fulfills.
Goal In Context	The use case's place within the system and why this use case is important.
Preconditions	What needs to happen before the use case can be executed.
Successful End Condition	What the system's condition should be if the use case executes successfully.
Failed End Condition	What the system's condition should be if the use case fails to execute successfully.
Primary Actors	The main actors that participate in the use case. Often includes the actors that trigger or directly receive information from a use case's execution.
Secondary Actors	Actors that participate but are not the main players in a use case's execution.
Trigger	The event triggered by an actor that causes the use case to execute.
Main Flow	The place to describe each of the important steps in a use case's normal execution.
Extensions	A description of any alternative steps from the ones described in the Main Flow.

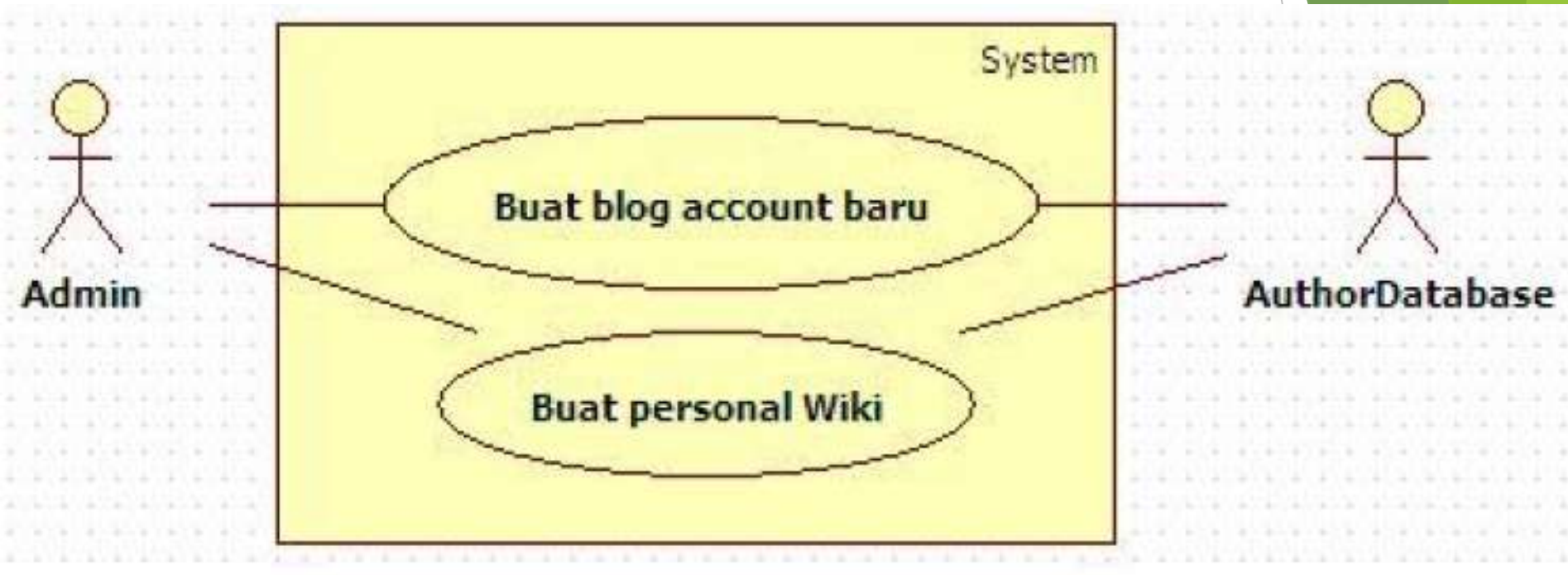
Use Case Desc

Use case name	Create a new Blog Account	
Related Requirements	Requirement A.1.	
Goal In Context	A new or existing author requests a new blog account from the Administrator.	
Preconditions	The system is limited to recognized authors and so the author needs to have appropriate proof of identity.	
Successful End Condition	A new blog account is created for the author.	
Failed End Condition	The application for a new blog account is rejected.	
Primary Actors	Administrator.	
	Secondary Actors	Author Credentials Database.
	Trigger	The Administrator asks the CMS to create a new blog account.
Main Flow	Step	Action
	1	The Administrator asks the system to create a new blog account.
	2	The Administrator selects an account type.
	3	The Administrator enters the author's details.
	4	The author's details are verified using the Author Credentials Database.
	5	The new blog account is created.
	6	A summary of the new blog account's details are emailed to the author.
Extensions	Step	Branching Action
	4.1	The Author Credentials Database does not verify the author's details.
	4.2	The author's new blog account application is rejected.

Hubungan Use Case

- ▶ Hubungan antar use case lebih ditekankan pada penguraian perilaku sistem kedalam sesuatu yang mudah diatur, daripada menambah baru.
- ▶ Contoh (Req.A.2)
 - ▶ CMS harus membolehkan administrator untuk membuat personal Wiki baru, penyediaan informasi rinci penulis diuji menggunakan database author.
 - ▶ Dalam blog, CMS punya sejumlah cara untuk bekerja dengan isinya. Satu mekanisme yang populer untuk pemeliharaan dokumen adalah dengan Wiki. Wiki memungkinkan penulis secara online membuat, mengubah dan menyambungkan bersama-sama halaman web (Wiki-web)

Req. A.2

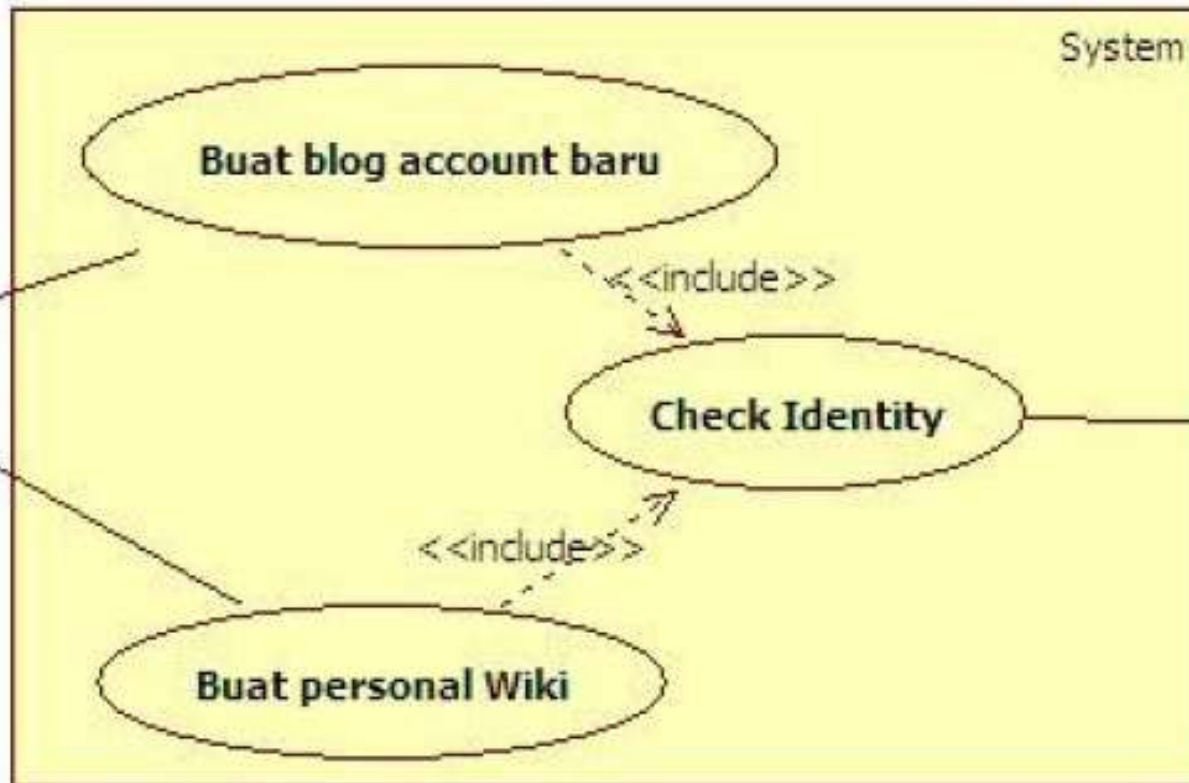
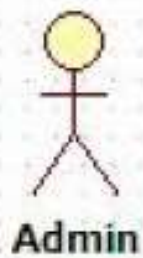


Desc. Req. A.2

Use case name	Create a new Personal Wiki	
Related Requirements	Requirement A.2.	
Goal In Context	A new or existing author requests a new personal Wiki from the Administrator.	
Preconditions	The author has appropriate proof of identity.	
Successful End Condition	A new personal Wiki is created for the author.	
Failed End Condition	The application for a new personal Wiki is rejected.	
Primary Actors	Administrator.	
Secondary Actors	Author Credentials Database.	
Trigger	The Administrator asks the CMS to create a new personal Wiki.	
Main Flow	Step	Action
	1	The Administrator asks the system to create a new personal Wiki.
	2	The Administrator enters the author's details.
	3	The author's details are verified using the Author Credentials Database.
	4	The new personal Wiki is created.
	5	A summary of the new personal Wiki's details are emailed to the author.
Extensions	Step	Branching Action
	3.1	The Author Credentials Database does not verify the author's details.
	3.2	The author's new personal Wiki application is rejected.

<<include>>

- ▶ Ada sedikit kesamaan dalam Main Flow antara dua use case, yaitu memasukkan penulis detil dan verifikasi ke database.
- ▶ Kita dapat menambahkan use case baru yang dapat digunakan oleh kedua use case lain.
- ▶ Hubungan <<include>> mendeklarasikan bahwa use case use case penunjuk memakai secara penuh semua langkah dalam use case yang dimasukkan.



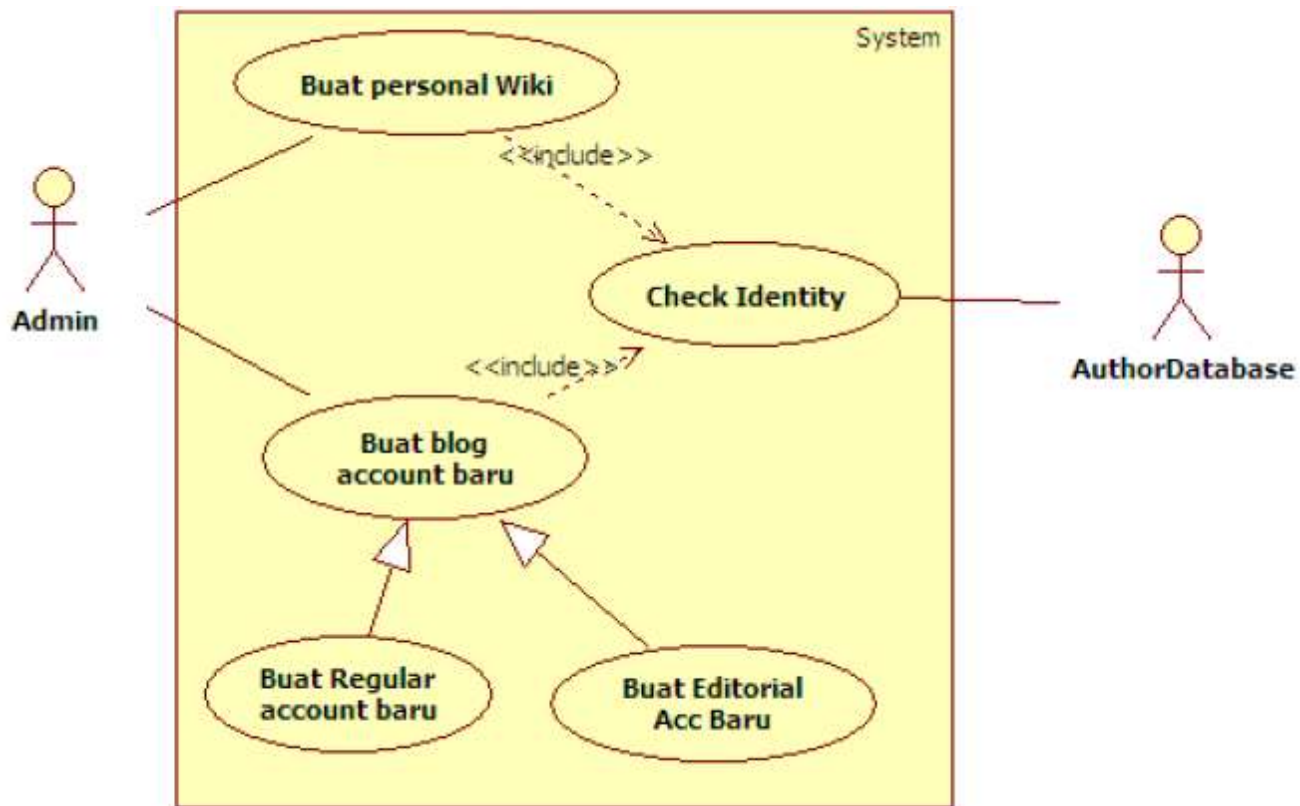
Use case name	Create a new Blog Account	
Related Requirements	Requirement A.1.	
Goal In Context	A new or existing author requests a new blog account from the Administrator.	
Preconditions	The author has appropriate proof of identity.	
Successful End Condition	A new blog account is created for the author.	
Failed End Condition	The application for a new blog account is rejected.	
Primary Actors	Administrator	
Secondary Actors	None	
Trigger	The Administrator asks the CMS to create a new blog account.	
Included Cases	Check Identity	
Main Flow	Step	Action
	1	The Administrator asks the system to create a new blog account.
	2	The Administrator selects an account type.
	3	The Administrator enters the author's details.
	4	
	include::Check Identity	The author's details are checked.
	5	The new account is created.
	6	A summary of the new blog account's details are emailed to the author.

Use case name	Create a new Personal Wiki	
Related Requirements	Requirement A.2	
Goal In Context	A new or existing author requests a new personal Wiki from the Administrator.	
Preconditions	The author has appropriate proof of identity.	
Successful End Condition	A new personal Wiki is created for the author.	
Failed End Condition	The application for a new personal Wiki is rejected.	
Primary Actors	Administrator	
Secondary Actors	None	
Trigger	The Administrator asks the CMS to create a new personal Wiki.	
Included Cases	Check Identity	
Main Flow	Step	Action
	1	The Administrator asks the system to create a new personal Wiki.
	2	The Administrator enters the author's details.
	3	
	include::Check Identity	The author's details are checked.
	5	The new personal Wiki is created.
	6	A summary of the new personal Wiki's details are emailed to the author.

Use case name	Check Identity	
Related Requirements	Requirement A.1, Requirement A.2.	
Goal In Context	An author's details need to be checked and verified as accurate.	
Preconditions	The author being checked has appropriate proof of identity.	
Successful End Condition	The details are verified.	
Failed End Condition	The details are not verified.	
Primary Actors	Author Credentials Database.	
Secondary Actors	None.	
Trigger	An author's credentials are provided to the system for verification.	
Main Flow	Step	Action
	1	The details are provided to the system.
	2	The Author Credentials Database verifies the details.
	3	The details are returned as verified by the Author Credentials Database.
Extensions	Step	Branching Action
	2.1	The Author Credentials Database does not verify the details.
	2.2	The details are returned as unverified.

Inheritance

- ▶ Dalam contoh kasus ini, bagaimana jika ternyata CMS mendukung beberapa tipe blog account?
- ▶ Dapat menerapkan turunan use case.
- ▶ Turunan Use case bermanfaat ketika Anda ingin untuk memperlihatkan bahwa satu use case bertipe khusus dari use case lainnya.

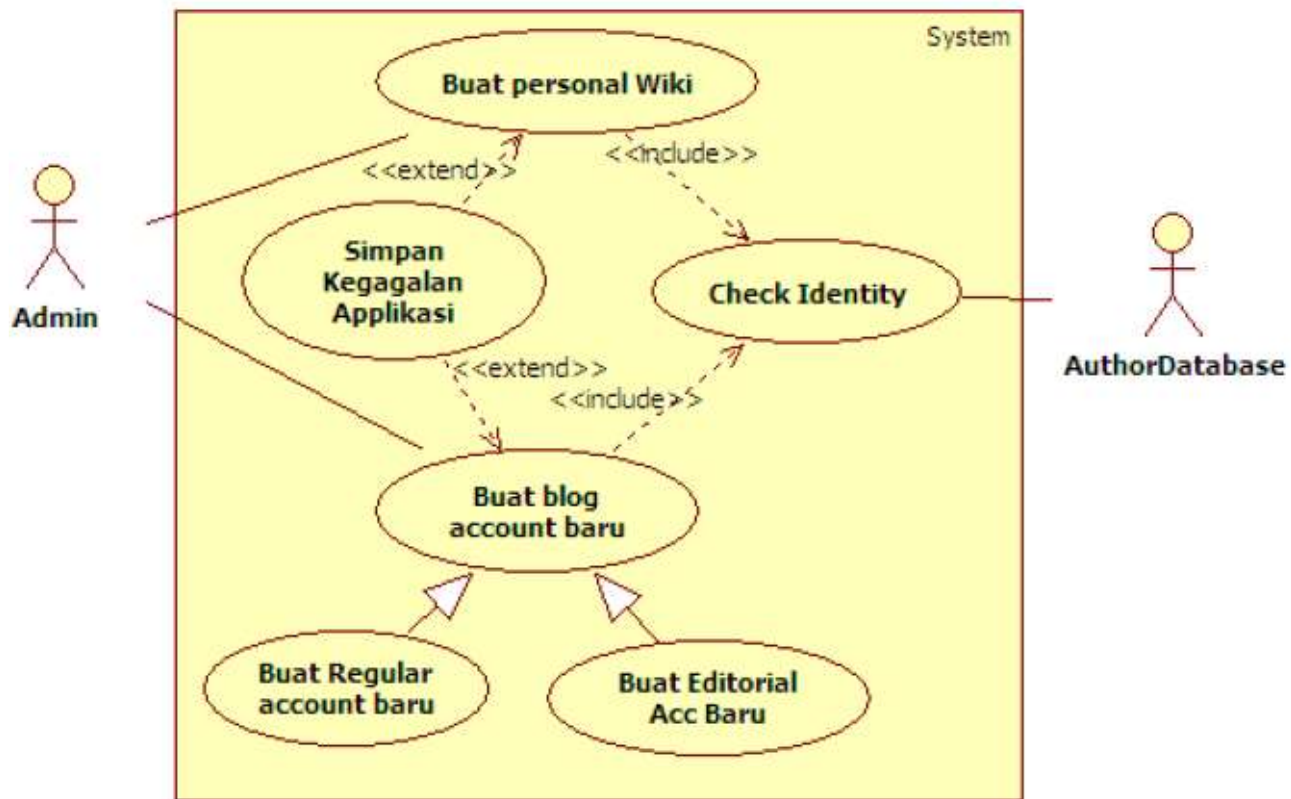


Use case name	Create a new Editorial Blog Account	
Related Requirements	Requirement A.1.	
Goal In Context	A new or existing author requests a new editorial blog account from the Administrator .	
Preconditions	The author has appropriate proof of identity.	
Successful End Condition	A new editorial blog account is created for the author.	
Failed End Condition	The application for a new editorial blog account is rejected.	
Primary Actors	Administrator.	
Secondary Actors	None.	
Trigger	The Administrator asks the CMS to create a new editorial account that will allow an author to edit entries in a set of blogs.	
Base Use Cases	Create a new Blog Account	
Main Flow	Step	Action
	1	The Administrator asks the system to create a new blog account.
	2	The Administrator selects the editorial account type.
	3	The Administrator enters the author's details.
	4	The Administrator selects the blogs that the account is to have editorial rights over.
	5	The author's details are checked.
	include::Check Identity	
	6	The new editorial account is created.
	7	A summary of the new editorial account's details are emailed to the author.
Extensions	Step	Branching Action
	5.1	The author is not allowed to edit the indicated blogs.
	5.2	The editorial blog account application is rejected.
	5.3	The application rejection is recorded as part of the author's history.

<<extend>>

- Pemakaiannya sama seperti <<include>> hanya saja untuk <<extend>> bersifat optional dan tergantung keputusan saat runtime atau saat penerapan sistem.

Extensions	Step	Branching Action
	4.1	The author is not allowed to create a new blog.
	4.2	The blog account application is rejected.
	4.3	The application rejection is recorded as part of the author's history.



Sumber

Cosmas Haryawan, pengenalan
UML - Dari Berbagai Sumber