Maturity model for full stack engineers

Version 1.0

March 26, 2019

Maturity model for full stack engineers

About this document

Please read the following document before reading the information in this document.

https://github.com/Fintan-contents/full-stack-engineer-maturity-model/blob/master/en/README.md

The document at the above link explains points such as why this document was created, how it is intended to be used and the background of the definitions in this document.
Read this before using this document to assess engineers' skills and make future plans.

Ranks and levels

The maturity model for full stack engineers measures skills in ranks and levels.
Four levels are set for each area (server side, infrastructure, etc.) and four ranks are set based on that number of achieved area and judgment level.
Levels are a more detailed measured than ranks, and the ranks of full stack engineers are determined based on the number of area-based levels that are achieved.

Definitions of ranks for full stack engineers

The table below provides definitions of each rank.

Rank	Definition	Required levels (all items are required)
Outstanding (Rank 4)	An outstanding engineer. Can be assigned to work independently as a full stack engineer and can instruct less experienced engineers in all areas.	Level 4 in three or more areas, Level 3 or higher in five or more areas (including Level 4 grades), Level 2 or higher in all areas
Advanced (Rank 3)	An advanced engineer. Can develop services while working with a small team to supplement their skills and can instruct less experienced engineers in their strong area.	Level 4 in one or more areas, Level 3 or higher in three or more areas (including Level 4 grades)
Intermediate (Rank 2)	An intermediate engineer. Is gaining technical knowledge at a wide range of fundamental levels and becoming strong in particular areas.	Level 3 in two or more areas, Level 2 or higher in four or more areas (including Level 3 grades)
Beginner (Rank 1)	A beginner engineer. Has developed the fundamental human skills and aims for a career as a full stack engineer.	-

The levels required to achieve each rank are mapped as follows.
*Detailed definitions of each level are provided later.

Rank 4

Rank 3

Rank 2

Maturity model for full stack engineers

Definitions of skill areas and levels for full stack engineers

Overall premise when reading this table
The areas and required skills and experienced indicated in this table are not dependent on particular products or services. If particular products and services were indicated in the judgment conditions, the criteria would be reduced to the names of those products and services, which would not cover the skills that are needed, and may eventually become obsolete.
Full stack engineers also need to keep up to date with the rapid changes in the IT industry and choose the right technology based on current trends, so past performance and experience is not the focus when judging
Levels need to be judged based on experience gained in technical elements in the last few years. For example, if an engineer is developing and releasing software based on knowledge of technical elements that they gained 10 years ago, that work does not qualify for the level judgments used for full stack engineers, regardless of the engineer's experience.
All of the skills and experience indicated for each level are required.

Resources such as the AWS best practice guide or useful materials for cloud services can be used for the infrastructure area.
As a general rule, it is assumed that management services are used. The use of

Area		Server applications	Front-end web development	Mobile development	Development processes	Cloud-based projects	
						Database	Infrastructure (networks, OS, storage, virtual (containers))
Level 4: Can choose and introduce the right product to meet requirements	Presumption	-	-	-	-	-	-
	Required skills and experience	- Has selected frameworks and libraries to be used for server applications to meet the requirements of products, and has used these for design and implementation. - Has worked on projects until release after selecting products and establishing policies. - Can create secure coding guides to be followed by the development team.	- Has selected frameworks and libraries to be used for server applications to meet the requirements of products, and has used these for design and implementation. - Has worked on projects until release after selecting products and establishing policies. - Can create secure coding guides to be followed by the development team.	- Has selected frameworks and libraries to be used for server applications to meet the requirements of products, and has used these for design and implementation. - Has worked on projects until release after selecting products and establishing policies. - Can create secure coding guides to be followed by the development team.	- Can create, implement and educate others about development processes, taking into account the requirements and team configuration for the development project. - Creating development processes involves deciding the following points - Method (waterfall or Scrum) - Definitions of deliverables - Configuration management - Testing and deployment - Operation	- Has selected a suitable data store to meet the requirements of products, and has used these for design and implementation. - Has worked on projects until release after selecting products and establishing policies. - Can create secure coding guides to be followed by the development team.	- Has selected suitable cloud-based infrastructure services to meet the requirements of products, and has used these for design and implementation. - Has worked on projects until release after selecting products and establishing policies.
Level 3: Can introduce products that have been decided on	Presumption	- Elements such as application frameworks to be used have been selected.	- Elements such as application frameworks to be used have been selected.	- Elements such as application frameworks to be used have been selected.	-	- The data store product to be used has been selected.	- The cloud-based infrastructure service to be used has been selected.
	Required skills and experience	- Can decide on how to implement selected products to suit the project and then apply them to the project.	- Can decide on how to implement selected products to suit the project and then apply them to the project.	- Can decide on how to implement selected products to suit the project and then apply them to the project.	- Can carry out improvement activities for development processes that have been decided on, based on the situation of the team	- Can decide on how to implement selected products to suit the project and then apply them to the project.	- Can decide on how to implement selected products to suit the project and then apply them to the project.
Level 2: Can read and use documents	Presumption	- The architecture, design, framework and library of the application have been selected and policies such as security measures have been established.	- The architecture, design, framework and library of the application have been selected and policies such as security measures have been established.	- The architecture, design, framework and library of the application have been selected and policies such as security measures have been established.	-	- The infrastructure elements and products comprising the system have been selected and policies such as security measures have been established.	- The infrastructure elements and products comprising the system have been selected and policies such as security measures have been established.
	Required skills and experience	- Can read documents on languages and libraries to be used according to the policies and designs that have been decided on, and then use and implement these. - Can implement security measures according to the guide.	- Can read documents on languages and libraries to be used according to the policies and designs that have been decided on, and then use and implement these. - Can implement security measures according to the guide.	- Can read documents on languages and libraries to be used according to the policies and designs that have been decided on, and then use and implement these. - Can implement security measures according to the guide.	- Can carry out development work according to a development process that has been decided	- Can read documents on data store products that have been selected according to the policies and designs that have been decided on, and then use and implement these. - Can implement security measures according to the guide.	- Can read documents on cloud-based infrastructure that has been selected according to the policies and designs that have been decided on, and then use and implement these.
Level 1: Lacks knowledge and							