

Low Code Development with Outsystem

Abdul Muhaimin Bin Abdul Razak, Fauzan Aqil bin Azman

*#Faculty of Computing, Universiti Terknology
Malaysia, Skudai, Johor*

¹muhamin-02@graduate.utm.my

²fauzanaqil@graduate.utm.my

Abstract— This document provides the information of a low-code development platform, Outsystem, to introduce its concept, functionality and advantages. Furthermore, there will be a step-by-step installation guide and basic Outsystem anatomy introduction to understand how the platform works.

Keywords— Low-code, applications, drag-and-drop, visual interface, mobile application development.

I. INTRODUCTION TO OUTSYSTEM

Low-code development can be defined as application development where it aims developers to generate solutions with little or no-hand programming[1]. This platform empowers organizations to quickly build, deploy, and manage robust and enterprise-grade applications through an intuitive visual interface. Outsystem, an example of low-code development, provides a visual development environment that enables developers to create interfaces, data models and also processes without having to implement coding a lot. Other than that, Outsystems too provide pre-built templates, modules and integration options that allow it to build applications easily[2]. In other ways, this means that developers can design user interfaces, integrate with databases and also define logic's application without spending too much time coding from scratch[1]. This platform enables business professionals without having programming skills are able to create a customized applications where it is accessible to anyone with a vision and desire to build an impactful solutions

II. INSTALLATION

Outsystem will require you to install Outsystems service studio to start developing your application. The following are all the necessary requirements and installation guide[8].

A. System requirement,

Your device must adhere to the following requirement to ensure that you meet the software need :

for hardware, the minimum requirement are :

- Dual-core processor
- B4 GB of RAM
- 80 GB of free disk space

Operating system should be minimum as follows:

- Microsoft Windows Server 2022 (Standard Edition or higher edition), since Platform Server 11.20.01
- Microsoft Windows Server 2019 (Standard Edition or higher edition), since Platform Server Release Jul.2019
- Microsoft Windows Server 2016 (Standard Edition or higher edition)

Only Windows editions supported by Microsoft are supported by OutSystems. Take into consideration upgrading the CPU and memory of the machines while installing the Platform Server on Windows Server 2022 or upgrading an existing installation to Windows Server 2022, as the operating system itself demands greater resources. It is necessary to deploy the supported OS configurations either on bare metal or using hardware virtualization technologies (like VMware or KVM). Updating OutSystems in the future might necessitate installing an update within the main versions listed before.

B. Installation Guide

To start the installation process, please follow the guideline below[8] ,:

1. Download OutSystems Installer

Visit the official OutSystems website (<https://www.outsystems.com/>) and navigate to the "Downloads" section. Download the appropriate installer for your operating system.

2. Run the Installer

Locate the downloaded installer file and double-click to run it. Follow the on-screen instructions to initiate the installation process.

3. Accept License Agreement

Read and accept the End-User License Agreement (EULA) presented during the installation process. Click on the "I Agree" button to proceed.

4. Choose Installation Location

Select the destination folder where you want to install OutSystems. You can choose the default location or specify a custom directory according to your preferences.

5. Select Components

Choose the components you want to install. Typically, this includes the OutSystems platform, development environment, and any additional tools or plugins.

6. Configure Installation Settings

Configure any additional settings such as the installation type (typical or custom), shortcuts creation, and integration options with other development tools.

7. Start Installation

Click on the "Install" button to begin the installation process. Depending on your system specifications, this may take several minutes to complete.

8. Complete Installation

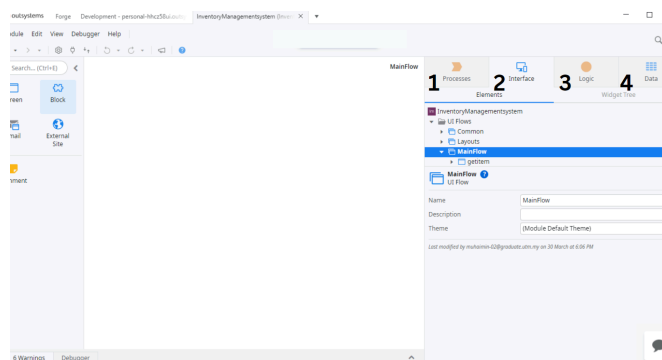
Once the installation process finishes successfully, you will receive a confirmation message. Click on the "Finish" button to exit the installer

C. Post-installation step

After the installation is completed, please follow these instructions to start your Outsystem service studio

1. Launch OutSystems and complete the initial setup wizard to configure your development environment.
2. Connect OutSystems to outsystem infrastructure to start building and deploying applications.
3. Outsystem infrastructure can be made in the same outsystem website. Log in to your account and click "create infrastructure"
4. Explore the OutSystems documentation and resources to familiarize yourself with the platform's features and capabilities.

III. OUTSYSTEM ANATOMY



Outsystems service studios offer fast application development with a drag and drop approach. let's understand the 4 main tabs that are going to be used for the development of any application.

1. Process

You can include your business processes into your applications with the help of a process. A process's design is reflected in its process flow, which often reflects the tasks that must be completed throughout the life cycle of an entity[6].

2. Interface

Interface section is the part where we can design our interface for the application. The entire process only involves dr-and-drop action, but there is also some coding involving css. If you have a very particular design you need to tweak[8].

3. Logic

Actions in OutSystems are used to define logic. You can construct logic flows for your application that operate on the server-side or client-side using an Action, which is a logic element.

You can design custom algorithms in your React online and mobile apps using logic elements. Screen Actions, which include logic unique to a single screen, Client Actions, which execute logic on the device, and Server Actions, which execute logic on the server, are a few examples of OutSystems logic pieces[7].

4. Data

The data tab is used to manipulate all the needed database applications. It involves creating entities, relationships, and structure of the data itself, just like a sql table[8].

IV. OUTSYSTEM UTILITIES AND CAPABILITIES

1. Rapid Application Development

Outsystem platform enables a quick development and deployment of applications. This can be seen as shown by Sarawak Energy, where they build its electricity supply customer portal, 'e-Customer'[3]. Sarawak Energy delivered 16 new applications using Outsystem, replacing Notes Domino within 16 weeks only while upskilling their development team[3]. Speed and efficiency plays a vital role for meeting the evolving needs in utilities and energy sectors.

2. AI Assisted Development

OutSystems has a functional utility that comes along with a co-developer to cooperate with developers, which is Code Mentor. Code Mentor is an AI-assisted development that runs besides users in any flow throughout Service Studio[4]. It provides a diversion of recommendations to fill in the properties for the newly created nodes that will pop-out in the list. When Outsystems gets it right, developers just need to press Enter key to insert it immediately[4]. Therefore, they are able to create the logic flows quicker and with more confidence, even for difficult tasks.

3. Mobile Application Development

One of the major capabilities of Outsystem is being able to support mobile application development, use full control of native capabilities, wide range of scalability, providing customizations option, robust security features and also enhance backend support[5]. With these advantages, this platform can produce high-performance mobile applications, aligning with the current industry's requirements and user accessibility standards.

4. Multi Language Support

Outsystems supports applications in multiple languages, which allow for the creation of the application targeted to a global audience[4].With these capabilities, Developers can define primary and secondary languages to cater to diverse regions, enhancing the platform's versatility and accessibility[4].

5. Advanced Data Visualization

Outsystem provides advanced data visualization tools that enables developers to create dashboards and reports swiftly. For example, programming languages like HTML, JavaScript, used to extract information from data, can be seamlessly implemented by Outsystem [4]. What is more interesting is, most of the reporting tools can also work across desktop browsers or mobile devices besides being able to create professional-looking reports within hours rather than weeks[4]. Developers also can be more focused on insight of the analysis, instead of taking much time taking care on technical implementations.

V. CONCLUSION

In conclusion, Outsystem comes out as a formidable low-code development platform that offers an extensive suite of features and capabilities to fasten the application development process. Through its intuitive visual interface and pre-built templates, Outsystem acts as a catalyst for developers to rapidly create, deploy, and manage enterprise-grade applications without extensive knowledge in programming languages. This platform also supports rapid application development, AI-assisted development with Code Mentor, mobile application development, advanced data visualization and multi-language support that enhance its adaptability and versatility to various business requirements. With Outsystem, an organization can streamline their development progress, accelerate time-to-market for applications, besides promoting innovation while catering to global audiences. As industries evolve, Outsystem stands as a powerful built solution for meeting exponential growth of demands of modern software development.

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