

Towards Contextual Layer Generation From Environmental Modeling

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Abstract: In this presentation, we discuss how to generate contextual layers of Context-Oriented Programming(COP) from an environmental model. Recently, modern systems such as the IoT and smart-phones provide multiple services depend on surrounding environments. This feature causes software to be more complicated. COP contributes to solving this problem. In COP, contextual events change the whole software by a contextual layer at runtime. A change to surrounding environments leads to happen a contextual event. We consider each service implements in each contextual layer that corresponds to each environment. Thus, to obtain a contextual layer for COP, we need to analyze the surrounding environment. To contribute this issue, we consider a contextual layer generation method from environmental modeling. In this method, we can generate a contextual layer of C# COP language from an environmental model on XML. In this presentation, we will show a contextual layer generation in an example of an automatic vacuum cleaner robot. In this example, the surrounding environments are types of rooms for cleaning.

Keywords: Context-Oriented Programming, Environmental Modeling, Program Generation

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