

Plant Growth Model Base in Java

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Software for agricultural production management, such as various plant growth models, has been developed by many researchers. Prior to several years ago, the model user had to prepare a PC that could execute the software and install the software on the user's PC. The situation changed with the spread of the Internet, and the appearance of programming languages like Java which can run on most PCs. It is now easy for a model developer to disseminate a model and a model user can use models from anywhere in the world through the WWW.

We are pushing forward the project for an agricultural production support system. The system that will be built for this project performs as follows:

1. A suitable model for the producer's inquiry is selected from the model data base.
2. Models are combined if no single model can determine a result.
3. The parameters of the model are adjusted according to cultivation area.
4. The result of execution is returned.

The following will be dealt with in this presentation:

- Collect models that have been programmed in the past and convert them to objects in Java.
- Make a complex model by combining several models.
- Adjust the parameters used in the model automatically.

Converting a model to an object means creating a model as a part. The model object can be exchanged for another model with the same function, and can combine two or more models through input and output of models. Moreover, since object-oriented programming encapsulates the contents of a program, it excels in maintenance and extendability.

At present, some models have been translated into Java and opened on the WWW. They are small-scale fruit growth models, and middle-scale rice growth models.