CGAL Extension Packages: The Vanilla Example

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1 Introduction

Flavored objects are known to be very useful in computational geometry, especially in industrial applications. This extension package allows one to create flavored objects and provides an implementation of Irene's Flavor Enhancement algorithm [Ire99] on these objects.

2 Flavors and flavor enhancement

#include <CEP/Vanilla/flavor.h>

The following enumerated type is provided in the header file `flavor.h` of the Vanilla package. The functions listed here are precompiled into the library `libVanill.a` provided with the package.

enum Flavor { *VANILLA,*
CHOCOLATE_CHIP,
MINT_CHOCOLATE_CHIP,
CHOCOLATE,
STRAWBERRY,
NEAPOLITAN,
PEACH,
ROCKY_ROAD,
PISTACHIO}

bool	*valid_flavor(Flavor f)*	is *true* if f is a valid flavor and *false* otherwise.
Flavor	*flavor_enhance(Flavor f)*	implements the Flavor Enhancement algorithm. The return value of the function is the enhancement of flavor f.
ostream&	*ostream& os << Flavor f*	output insertion operator for flavors. Inserts the string associated with the enumeration f into *os* and returns the modified stream.

istream&	*istream& is >> Flavor& f*	input extraction operator for flavors. Extracts the next string from *is* and converts it to the corresponding Flavor value. If the string does not match any of the valid flavor names, the value of f does not change and the stream *is* goes into error state.

3 Reference Pages for Vanilla CEP

Class Flavored_object<O>

Definition

The class *Flavored_object<O>* is a templated class that is derived from the class of its template argument. It adds a flavor to the object and provides member functions for flavor enhancement and for checking the validity of the flavor, as well as functions for setting and retrieving the flavor of the object.

#include <CEP/Vanilla/Flavored_object.h>

Creation

Flavored_object<O> fo;	an unflavored empty object *fo*
Flavored_object<O> fo(Flavor f);	*fo* is an empty object with flavor f
Flavored_object<O> fo(Object o);	*fo* is a VANILLA object with value o
Flavored_object<O> fo(Object o, Flavor f);	*fo* is an object with value o and flavor f

Operations

void	*fo.set_flavor(Flavor f)*	makes *fo* an object with flavor f *Precondition*: f must be a valid flavor
void	*fo.enhance_flavor()*	enhances *fo*'s flavor
bool	*fo.is_valid()*	determines if *fo*'s flavor is valid
Flavor	*fo.flavor()*	retrieves *fo*'s flavor

References

[Ire99] Irene. *Flavor Enhancement for Fun and Profit.* Morgan-Kaufmann, San Mateo, CA, 1999.