C interfaces to GALAHAD HASH

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Chapter 1

GALAHAD C package hash

1.1 Introduction

1.1.1 Purpose

Set up, insert into, remove from and search a chained scatter table (Williams, CACM 2, 21-24, 1959).

Currently, only the control and inform parameters are exposed; these are provided and used by other GALAHAD packages with C interfaces.

1.1.2 Authors

N. I. M. Gould, STFC-Rutherford Appleton Laboratory, England.

C interface, additionally J. Fowkes, STFC-Rutherford Appleton Laboratory.

1.1.3 Originally released

December 1990, C interface January 2022.

Chapter 2

File Index

2.1 File List

Here is a list of all files with brief descriptions:

hash.h 5

Chapter 3

File Documentation

3.1 hash.h File Reference

```
#include <stdbool.h>
#include "galahad_precision.h"
```

Data Structures

- struct hash_control_type
- struct hash_inform_type

3.1.1 Data Structure Documentation

3.1.1.1 struct hash_control_type

Data Fields

int	error	error and warning diagnostics occur on stream error
int	out	general output occurs on stream out
int	print_level	the level of output required. Possible values are: • $\leq$ 0 no output, • $\geq$ 1 debugging
bool	space_critical	if space_critical true, every effort will be made to use as little space as possible. This may result in longer computation time
bool	deallocate_error_fatal	if deallocate_error_fatal is true, any array/pointer deallocation error will terminate execution. Otherwise, computation will continue
char	prefix[31]	all output lines will be prefixed by prefix(2:LEN(TRIM(prefix))-1) where prefix contains the required string enclosed in quotes, e.g. "string" or 'string'

3.1.1.2 struct hash_inform_type

Data Fields

int	status	return status. 0 is a successful call
int	alloc_status	the status of the last attempted allocation/deallocation
char	bad_alloc[81]	the name of the array for which an allocation/deallocation error ocurred

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