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#ifndef _ENUMS_H
#define _ENUMS_H

#include "optype.h"

#define NULLINT -1      /*!< default value of empty choices */
#define MAX_PAR_ENUM 2 /*!< maximum number of parameters for Enumerations */

/* the array of PremiaEnumMember must end with {NULL, NULLINT, 0, 0} */
typedef struct PremiaEnumMember_t PremiaEnumMember;
struct PremiaEnumMember_t
{
    const char *label; /*!< string describing the choice */
    int         key; /*!< value associated to this choice */
    int         nvar; /*!< length of array Par, must be smaller than MAX_PAR_ENUM
    VAR         Par[MAX_PAR_ENUM]; /*!< extra parameters associated to this choice
};

typedef struct PremiaEnum_t PremiaEnum;
struct PremiaEnum_t
{
    unsigned          size;          /*!< size in bytes of an enum member
    PremiaEnumMember *members; /*!< a pointer to the first member of the enum */
    const char        *label; /*!< printable label for the enumeration
};

#define DEFINE_ENUM(Name, Members) PremiaEnum Name = \
    { sizeof(Members[0]), &Members[0], #Name };

extern PremiaEnum PremiaEnumNull;
extern PremiaEnum PremiaEnumBool;
extern PremiaEnum PremiaEnumCirOrder;
extern PremiaEnum PremiaEnumAfd;
extern PremiaEnum PremiaEnumAveraging;
extern PremiaEnum PremiaEnumBoundaryCond;
extern PremiaEnum PremiaEnumDiscretizationScheme;
extern PremiaEnum PremiaEnumPrecond;

```

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extern PremiumEnum PremiumEnumSchemeTreeMSS;
extern PremiumEnum PremiumEnumExpPart;
extern PremiumEnum PremiumEnumDeltaMC;
extern PremiumEnum PremiumEnumIntegralScheme;
extern PremiumEnum PremiumEnumFlat;
extern PremiumEnum PremiumEnumFlatCopy;
extern PremiumEnum PremiumEnumFlat2;
extern PremiumEnum PremiumEnumBasis;
extern PremiumEnum PremiumEnumRNGs;
extern PremiumEnum PremiumEnumMCRNGs;
extern PremiumEnum PremiumEnumVolatility;
extern PremiumEnum PremiumEnumIStype;
extern PremiumEnum PremiumEnumclusteringMethod;
extern PremiumEnum PremiumEnumclusteringMethod1;
extern PremiumEnum PremiumEnumRegressionType;

/* defined in var.c, but convenient to pout it here */
extern VAR *lookup_premium_enum_par(const VAR *x, int key);

#endif /* _ENUMS_H */
```