Help

```
#if defined(PremiaCurrentVersion) && PremiaCurrentVersion <
     (2008+2) //The "#else" part of the code will be freely av
    ailable after the (year of creation of this file + 2)
#else
/*************************************************************
*   CPS - A simple C PDE solver                              *
*                                                            *
*   Copyright (c) 2007,                                      *
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*                                                            *

*************************************************************/
#ifndef PROBLEM_SOLVER_H
#define PROBLEM_SOLVER_H

#include "laspack/qmatrix.h"
#include "laspack/highdim_vector.h"
#include "laspack/itersolv.h"
#include "laspack/operats.h"
#include "laspack/errhandl.h"
#include "laspack/rtc.h"

#include "cps_types.h"

#define SOLVER_MODE_IMP 0xF1
#define SOLVER_MODE_EXP 0xF0

#define SOLVER_ALG_CG      0xA1
#define SOLVER_ALG_GMRES  0xA2
#define SOLVER_ALG_BICGS  0xA3

#define MAX_MAIN_SOLVER_ITERATIONS 20
#define MAX_BACKUP_SOLVER_ITERATIONS 100

#define FULL_CORRECTION 0xC1
#define FAST_CORRECTION 0xC2
```

```
struct problem_solver_t {

  int mode;
  int step;
  int algorithm;
  int correction_mode;
  pde_problem *problem;
  QMatrix  Dc,Dn;
  Vector  uc,un,bc;
  IterProcType  iterative_solver;
};

int problem_solver_create(problem_solver **);
int problem_solver_destroy(problem_solver **);
int problem_solver_setup(problem_solver *, pde_problem *);
int problem_solver_reset(problem_solver *);
int problem_solver_set_mode(problem_solver *, int);
int problem_solver_set_correction_mode(problem_solver *,
    int);
int problem_solver_set_algorithm(problem_solver *, int);
int problem_solver_step(problem_solver *);
int problem_solver_get_solution_element(problem_solver *,
    unsigned int, double *);
#endif

#endif //PremiaCurrentVersion
```

References