```
#ifndef EXCEPTION_H
#define EXCEPTION_H

#include <setjmp.h>

#define EXCEPTION_NAME(_E_) exception_name_##_E_

typedef struct exception *exception;

extern void exception_pop(exception);
extern void exception_push(exception);
extern int exception_search(exception);
extern void *exception_jmp_buf(exception);
extern void exception_uncaught(exception, char*, char*, int);
extern int exception_raised(void);

extern unsigned char exception_flag;

#define DEFINE_EXCEPTION(_E_)   \
    exception EXCEPTION_NAME(_E_)=(exception)&EXCEPTION_NAME(_E_)

#define USE_EXCEPTION(_E_)       extern exception EXCEPTION_NAME(_E_)

#define HANDLE(_E_,_EXP_) \
    (exception_push(EXCEPTION_NAME(_E_)), \
     setjmp(exception_jmp_buf(EXCEPTION_NAME(_E_)))==0 \
     ? ((_EXP_),(exception_flag=0)) : (exception_flag=1), \
     exception_pop(EXCEPTION_NAME(_E_)))

#define RAISE(_E_) \
```

```
    (exception_search(EXCEPTION_NAME(_E_)) \
     ? longjmp(exception_jmp_buf(EXCEPTION_NAME(_E_)),1) \
     : exception_uncaught(EXCEPTION_NAME(_E_), #_E_, __FILE__, __LINE__))

#endif

USE_EXCEPTION(any);
```