

Computer Science 102 Lab 6

In this lab you will augment your vector library with some additional functions. A sample *main.c* and sample output file are provided for you. These are not guaranteed to represent a complete test of the components. You must use the following matrix structure:

```
typedef struct matrix_type
{
    vec_t row[3];
} mat_t;
```

Functions that you must provide are:

```
/**/
/* Compute the outer product of two input vectors */

static inline void vec_cross(
vec_t *v1,          /* Left input vector */
vec_t *v2,          /* Right input vector */
vec_t *v3);        /* Output vector */

/**/
/* project a vector onto a plane */

static inline void vec_project(
vec_t *n,          /* plane normal */
vec_t *v,          /* input vector */
vec_t *w);        /* projected vector */

/* Apply transform matrix to vector */

static inline void vec_xform(
mat_t *m,
vec_t *v1,
vec_t *v2);

/* Compute the transpose of a matrix */

static inline void mat_xpose(
mat_t *m1,
mat_t *m2);
```

In this lab you will submit a single file, `vector.h` that includes both your original vector functions and the new ones constructed as part of this lab.

```
sendlab.102.labsection# lab# vector.h
```