

Dæmi 1:

```
matrix margfFylki(matrix A, matrix B)
{
    double * AB = (double*)
        malloc(sizeof(double)*(A.n)*(B.m));
    //counter
    int c = 0;
    double stak = 0;
    for(int i = 0; i < A.n; i++)
    {
        for(int j = 0; j < B.m; j++)
        {
            for(int t = 0; t < B.n; t++)
            {
                stak += A.a[i*A.m + t] * B.a[t*B.m + j];
            }
            AB[c] = stak;
            stak = 0;
            c++;
        }
    }
    matrix C;
    C.a = AB;
    C.n = A.n;
    C.m = B.m;
    return C;
}
```

## Dæmi 2:

```
int main()
{
    int n, m;
    scanf("%d %d", &n, &m);
    double* fylkiA = (double*) malloc(sizeof(double)*n*m);
    for(int i = 0; i < n*m; i++)
    {
        double x;
        scanf(" %lf",&x);
        fylkiA[i] = x;
    }
    matrix A;
    A.a = fylkiA;
    A.n = n;
    A.m = m;
    scanf("%d %d", &n, &m);
    double* fylkiB = (double*) malloc(sizeof(double)*n*m);
    for(int i = 0; i < n*m; i++)
    {
        double x;
        scanf(" %lf",&x);
        fylkiB[i] = x;
    }
    matrix B;
    B.a = fylkiB;
    B.n = n;
    B.m = m;
    matrix C;
    C.a = margfFylki(A, B).a;
    C.n = margfFylki(A, B).n;
    C.m = margfFylki(A, B).m;
    //counter
    int c = 0;
    for(int i = 0; i < C.n; i++)
    {
        for(int j = 0; j < C.m; j++)
        {
            printf("%.11f ",C.a[c]);
            c++;
        }
        printf("\n");
        free(A.a);
        free(B.a);
        free(C.a);
    }
}
```

### Dæmi 3:

```
#include <stdio.h>

int main(int argc, char** argv)
{
    //athugum hvort það sé viðfang
    if(argc > 1)
    {
        //leysum inn allar skrárnar og prentum þær út
        for(int i = 1; i < argc; i++)
        {
            char* filename = argv[i];
            // opnar skrá til lesturs
            FILE* file = fopen(filename, "r");
            char line[1024]; // line er char fylki sem við lesum
            inn í

            // fgets les eina línu í- einu
            while (fgets(line, sizeof(line), file)) {
                printf("%s", line);
            }
            printf("\n");
            // lokum skránni
            fclose(file);
        }
    }
    else
    {
        char line[1024];
        while(gets(line))
        {
            printf("%s\n", line);
        }
    }
    return 0;
}
```

Dæmi 4:

```
#include <stdio.h>
```

```
int main(int argc, char**argv)
{
    char* pattern = argv[1];
    int l = 0, c = 0;
    while(pattern[l] != '\0')
    {
        printf("%c", pattern[l]);
        l++;
    }
    char line[1024];
    FILE* file = fopen("Holmes.txt", "r");
    int fj = 0;
    while (fgets(line, sizeof(line), file))
    {
        c = 0;
        while(line[c] != '\0')
        {
            for(int i = 0; i < l; i++)
            {
                if(line[c + i] != pattern[i])
                {
                    i = 1;
                }
                else if(i == l - 1)
                {
                    printf("%s", line);
                    fj++;
                }
            }
            c++;
        }
    }
    printf("\nFjöldi lína sem innihald Holmes eru %d\n", fj);
}
```

Dæmi 5:

```
void vector_set(vector* v, unsigned int i, int x) {
    if(i > 0 && i < (v->size)){
        v->a[i] = x;
    }
}

int vector_remove(vector* v, unsigned int i) {
    int show = v->a[i];
    v->size--;
    for(int j = i; j < v->size; j++) {
        v->a[j] = v->a[j+1];
    }
    return show;
}

vector* vector_copy(vector* v) {
    vector *v2 = vector_init();
    for(int i = 0; i < v->size; i++)
    {
        vector_append(v2, v->a[i]);
    }
    return v2;
}

int vector_find(vector* v, int x) {
    for(int i = 0; i < v->size; i++) {
        if(v->a[i] == x) {
            return i;
        }
    }
    return -1;
}
```