1.main.c

```
#include <stdio.h>
#include <stdlib.h>
#include "header.h"

int main(){
   array a;
   init(&a, 5);
   append(&a, 5);
   append(&a, 8);
   append(&a, 9);
   append(&a, 2);
   append(&a, 3);
   printf("Unsorted array: \n");
   print_array(&a);
   selection_sort(&a);
   printf("Sorted array: \n");
   print_array(&a);
   return 0;
}
```

2.header.h

```
typedef struct{
   int *A;
   int size;
   int len;
}array;
void init(array *arr, int size);
void append(array *arr, int d);
void selection_sort(array *arr);
void print_array(array *arr);
```

3.logic.c

```
#include <stdio.h>
#include <stdlib.h>
#include "header.h"

void init(array *arr, int size){
   arr -> A = (int *)malloc(sizeof(int) * size);
   arr -> size = size;
   arr -> len = 0;
}
void append(array *arr, int d){
   if(arr -> len < arr -> size){
      arr -> A[arr -> len++] = d;
   }
}
void selection_sort(array *arr){
   int min_index, temp;
   for(int i = 0; i < arr -> len - 1; i++){
      min_index = i;
      for(int j = i + 1; j < arr -> len; j++){
         if(arr -> A[j] < arr -> A[min_index]){
            min_index = j;
         }
      }
      if(min_index != i){
         temp = arr -> A[i];
         arr -> A[i] = arr -> A[min_index];
         arr -> A[min_index] = temp;
      }
   }
}
```

```
void print_array(array *arr) {
    for (int i = 0; i < arr->len; i++) {
        printf("%d ", arr->A[i]);
    }
    printf("\n");
}
```

Output:

```
PS D:\COEP\DSA\Serious\Assignments\Assignment7\SelectionSort> gcc -Wall  main.c logic.c
PS D:\COEP\DSA\Serious\Assignments\Assignment7\SelectionSort> ./a
Unsorted array:
5 8 9 2 3
Sorted array:
2 3 5 8 9
PS D:\COEP\DSA\Serious\Assignments\Assignment7\SelectionSort>
```