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1.
#include <stdio.h>
#include <string.h>

#define MAX 100

// Passenger structure
typedef struct {
    char name[50], destination[50];
    int age;
} Passenger;

// Function to swap passengers (for sorting)
void swap(Passenger *a, Passenger *b) {
    Passenger temp = *a;
    *a = *b;
    *b = temp;
}

// Sort passengers by destination (Bubble Sort)
void sort_passengers(Passenger p[], int n) {
    for (int i = 0; i < n - 1; i++)
        for (int j = 0; j < n - i - 1; j++)
            if (strcmp(p[j].destination, p[j + 1].destination) > 0)
                swap(&p[j], &p[j + 1]);
}

// Search passengers by destination
void search_passengers(Passenger p[], int n, char dest[]) {
    int found = 0;
    for (int i = 0; i < n; i++)
        if (strcmp(p[i].destination, dest) == 0) {
            printf("%s\n", p[i].name);
            found = 1;
        }
    if (!found) printf("No passengers found for %s.\n", dest);
}

int main() {
    int n;
    Passenger p[MAX];

    // Input passengers
    printf("Enter number of passengers: ");

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scanf("%d", &n);
getchar(); // Consume newline

for (int i = 0; i < n; i++) {
    printf("Passenger %d (Name, Age, Destination): ", i + 1);
    scanf("%[^,], %d, %[^\\n]", p[i].name, &p[i].age, p[i].destination);
    getchar(); // Consume newline
}

// Sort & display passengers
sort_passengers(p, n);
printf("\nSorted List (by destination):\n");
for (int i = 0; i < n; i++)
    printf("%s • %s\n", p[i].name, p[i].destination);

// Search passengers
char dest[50];
printf("\nEnter destination to search: ");
scanf("%[^\\n]", dest);
printf("Passengers traveling to %s:\n", dest);
search_passengers(p, n, dest);

return 0;
}

```

Example output:

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Enter number of passengers: 3
Passenger 1 (Name, Age, Destination): Alice, 30, Delhi
Passenger 2 (Name, Age, Destination): Bob, 25, Mumbai
Passenger 3 (Name, Age, Destination): Charlie, 40, Chennai

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Sorted List (by destination):

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Charlie • Chennai
Alice • Delhi
Bob • Mumbai

```

Enter destination to search: Mumbai

Passengers traveling to Mumbai:

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Bob

```

2.

```

#include <stdio.h>

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```

#include <string.h>

```

```

// Function to count occurrences of a pattern in the DNA sequence
int count_pattern(char dna[], char pattern[]) {
    int count = 0;
    char *ptr = dna;

    while ((ptr = strstr(ptr, pattern)) != NULL) { // Find substring
        count++;
        ptr++; // Move pointer ahead to search further
    }
    return count;
}

int main() {
    char dna[100], pattern[20];

    // Input: DNA sequence
    printf("Enter DNA Sequence: ");
    scanf("%s", dna);

    // Input: Pattern to search
    printf("Enter pattern to search: ");
    scanf("%s", pattern);

    // Count occurrences
    int occurrences = count_pattern(dna, pattern);
    printf("Pattern found %d time(s) in the DNA sequence.\n", occurrences);

    return 0;
}

```

Example output:

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Enter DNA Sequence: ATGATGCGATG
Enter pattern to search: ATG
Pattern found 3 time(s) in the DNA sequence.

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3.

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

// Function to compute highest, lowest, and average score
void analyze_scores(int scores[], int n) {
    int highest = scores[0], lowest = scores[0], sum = 0;

    for (int i = 0; i < n; i++) {

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        if (scores[i] > highest) highest = scores[i];
        if (scores[i] < lowest) lowest = scores[i];
        sum += scores[i];
    }

    printf("Highest Score: %d\n", highest);
    printf("Lowest Score: %d\n", lowest);
    printf("Average Score: %.2f\n", (float)sum / n);
}

int main() {
    int n;

    // Input: Number of matches
    printf("Enter number of matches: ");
    scanf("%d", &n);

    int scores[n];

    // Input: Match scores
    printf("Enter scores of %d matches: ", n);
    for (int i = 0; i < n; i++) {
        scanf("%d", &scores[i]);
    }

    // Analyze scores
    analyze_scores(scores, n);

    return 0;
}

```

Example output:

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Enter number of matches: 5
Enter scores of 5 matches: 245 189 320 270 150
Highest Score: 320
Lowest Score: 150
Average Score: 234.80

```