Insertion sort

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Practice problem:

1. Insertation sort.

```
#include <stdio.h>
int main( ){
	int n;
	int i, key, j;
	printf("Enter array size: ");
	scanf("%d", &n);
	int arr[n];
	for(int i = 0; i < n; i++)
		scanf("%d", &arr[i]);
	for (i = 1; i < n; i++) {
		key = arr[i];
		j = i - 1;
		while (j >= 0 && arr[j] < key){
			arr[j + 1] = arr[j];
			j = j - 1;
		}
		arr[j + 1] = key;
	}
	printf("Descendong Order: ");
	for(int i = 0; i < n; i++)
		printf("%d ", arr[i]);
	return 0;
}
```

2.

```
#include <stdio.h>
int main( ){
	int n;
	int i, key, j;
	printf("Enter array size: ");
	scanf("%d", &n);
	int arr[n];
	for(int i = 0; i < n; i++)
		scanf("%d", &arr[i]);
	for (i = 1; i < n; i++) {
		key = arr[i];
		j = i - 1;
		while (j >= 0 && arr[j] > key){
			arr[j + 1] = arr[j];
			j = j - 1;
		}
		arr[j + 1] = key;
	}
	printf("Asscending Order: ");
	for(int i = 0; i < n; i++)
		printf("%d ", arr[i]);
	printf("\n");
	printf("Difference between max min : %d\n", arr[n - 1] - arr[0]);
	return 0;
}
```

3.

```
#include <stdio.h>
int main( ){
	int n;
	int i, key, j;
	printf("Enter array size: ");
	scanf("%d", &n);
	int arr[n];
	for(int i = 0; i < n; i++)
		scanf("%d", &arr[i]);
	for (i = 1; i < n; i++) {
		key = arr[i];
		j = i - 1;
		while (j >= 0 && arr[j] > key){
			arr[j + 1] = arr[j];
			j = j - 1;
		}
		arr[j + 1] = key;
	}
	printf("Asscending Order: ");
	float sum = 0;
	for(int i = 0; i < n; i++){
		printf("%d ", arr[i]);
		sum += arr[i];
	}
	printf("\n");
	float ans = sum / n;
	printf("Avg : %f\n", ans);
	return 0;
}
```