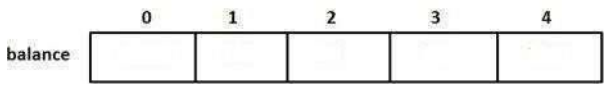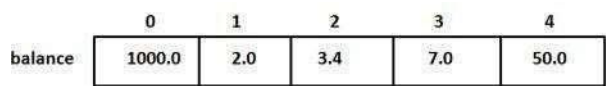# CSE 115L: Programming Language I Lab (Section: 06)
Spring 2020
Lab Week-06 (Arrays)

An array is a group (or collection) of the same data types.

Basic syntax for 1-dimensional array	Initialization of array
DataType ArrayName [Array size] **Example:** double balance[5]; The above line generates 5 consecutive empty spaces in memory of size double. Here the **starting index is 0** and the **last index is arraySize – 1** i.e in the above case 5-1=4	double balance[] = {1000.0, 2.0, 3.4, 7.0, 50.0}; Above is the memory representation of the initialized array. To access the elements at index 1 we use the **array_name[index]** format. **Example:** balance[1] will access the value 2.0

Example1: How to insert and print elements	Example 2: declaration and initialization

int mark[] = {19, 10, 8, 17, 9}
 	
// insert different value to third element
mark[3] = 9;
 	
// take input from the user and insert in third element
scanf("%d", &mark[2]);
 	
// take input from the user and insert in (i+1)th element
scanf("%d", &mark[i]);
 	
// print first element of an array
printf("%d", mark[0]);
 	
// print ith element of an array
printf("%d", mark[i-1]);
	``c
	#include <stdio.h>
	
	int main(void)
	{
	        int mark[] = { 23, 55, 22, 3, 40, 18 };
	
	        int i;
	        int score[6];
	
	        for (i = 0; i < 6; ++i)
	        {
	        scanf("%d", &score[i]);
	        }
	
	        return 0;
	}
	``

Example 3: Find average of the array elements	**Example 4:** C program to pass an array containing ages of people to a function
| ```c
#include <stdio.h>

int main(void)
{
        float age[] = { 23, 55, 22, 3, 40, 18 };
        float avg, sum = 0.0;
        int i;

        for (i = 0; i < 6; ++i)
        {
        sum += age[i];
        }

        avg = (sum / 6.0);
        printf("Average age=%.2f", avg);
        return 0;
}
``` | ```c
#include <stdio.h>

float average(float age[]);

int main(void)
{
        float avg, age[] = { 23, 55, 22, 3, 40, 18 };
        avg = average(age);
        /* Only name of array is passed as argument. */
        printf("Average age=%.2f", avg);
        return 0;
}

float average(float age[])
{
        int i;
        float avg, sum = 0.0;

        for (i = 0; i < 6; ++i)
        {
        sum += age[i];
        }
        avg = (sum / 6.0);
        return avg;
}
``` |