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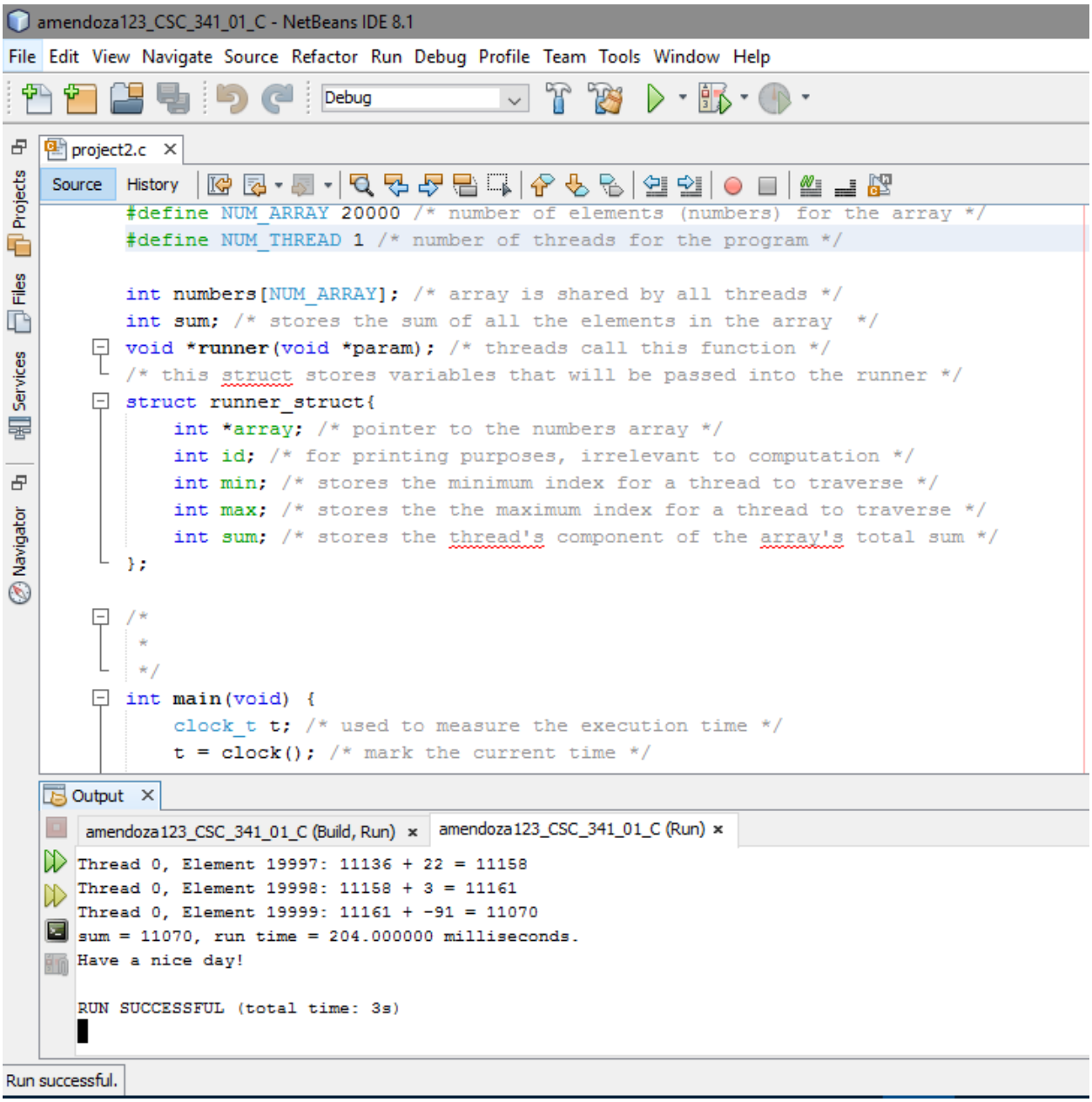
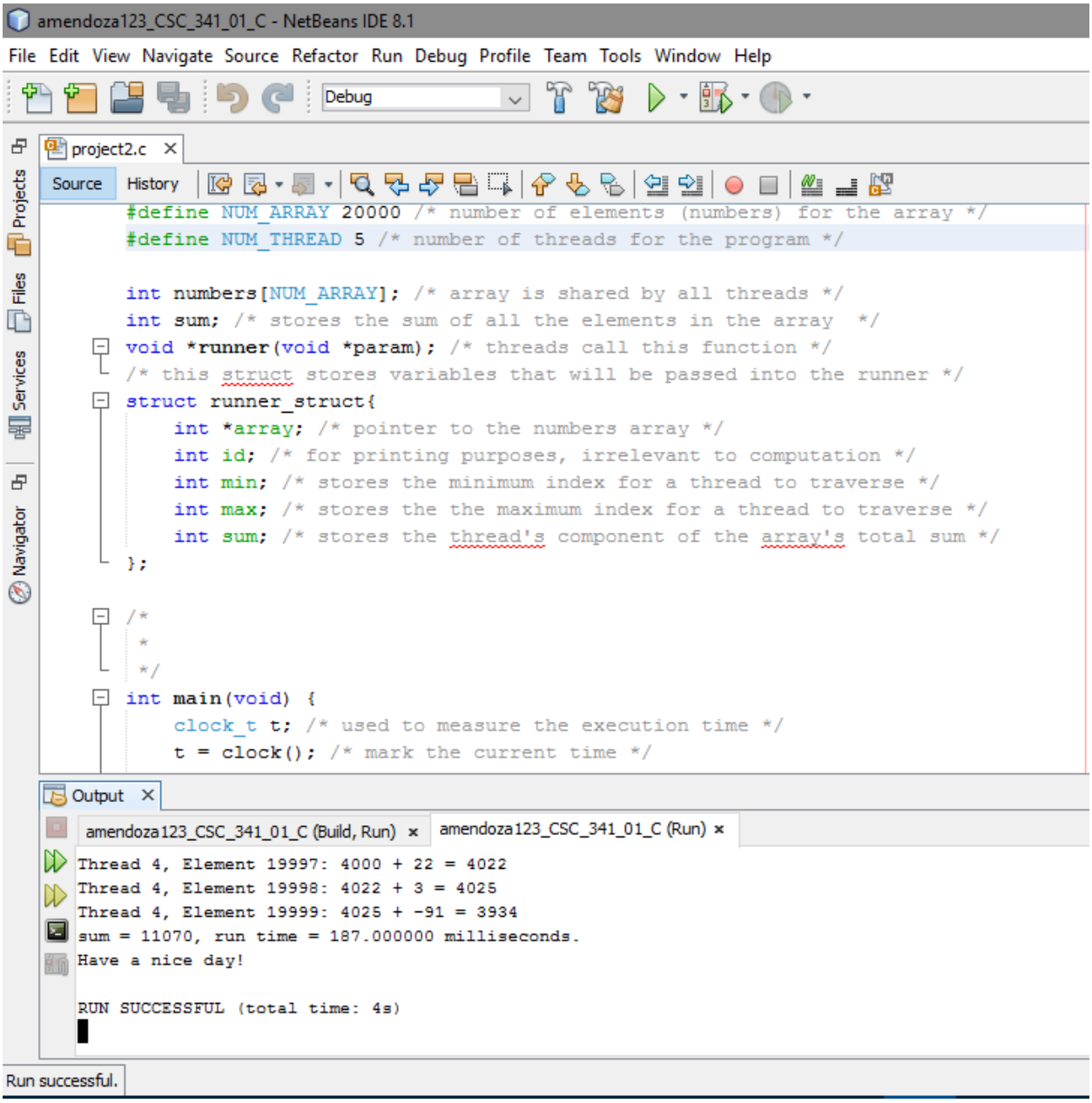
CSC 341 Operating Systems
3/24/2017

# Project 2

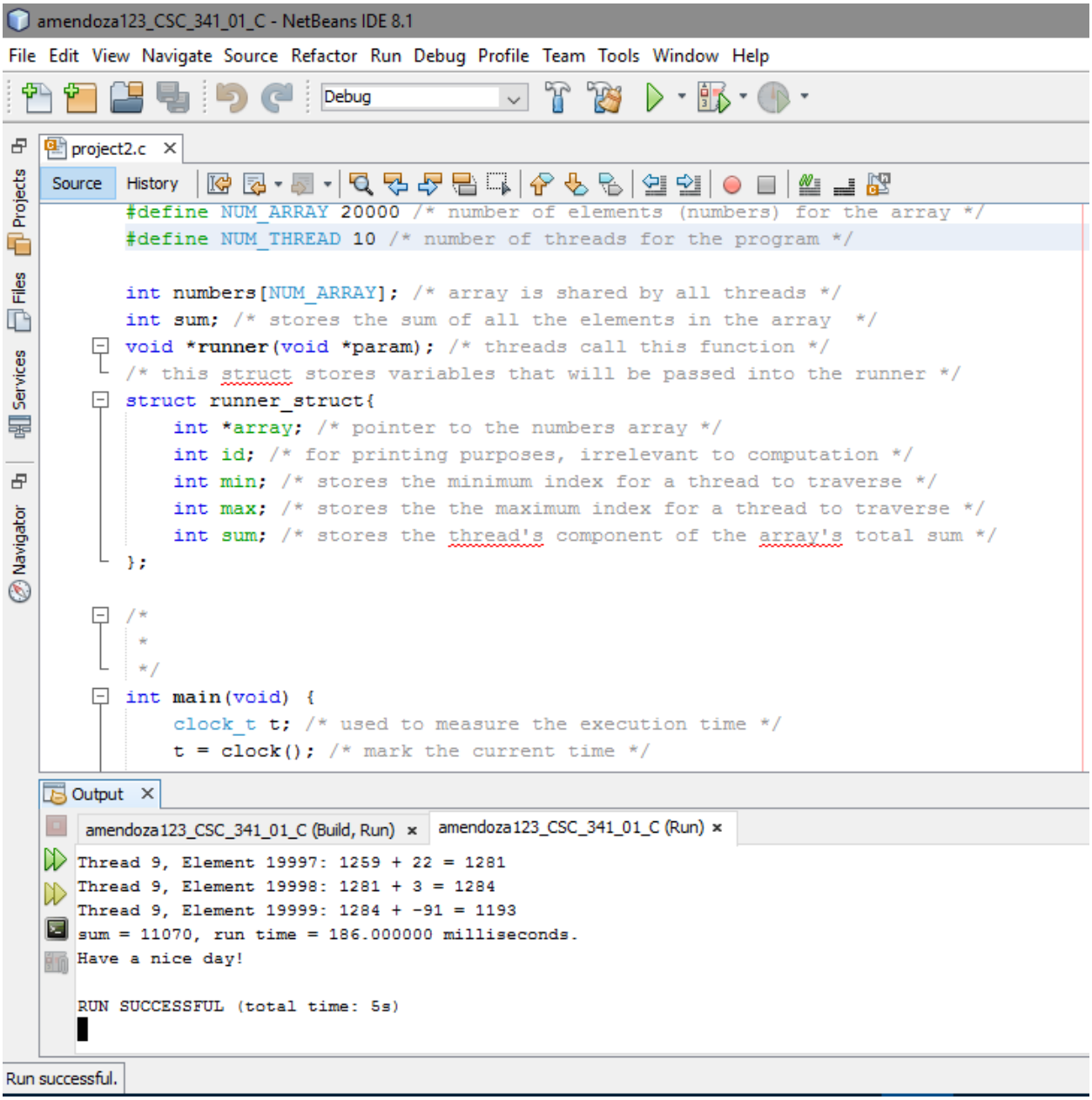
## 1 Thread



**5 Threads**


amendoza123_CSC_341_01_C - NetBeans IDE 8.1
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Debug
project2.c
Source History
#define NUM_ARRAY 20000 /* number of elements (numbers) for the array */
#define NUM_THREAD 5 /* number of threads for the program */
int numbers[NUM_ARRAY]; /* array is shared by all threads */
int sum; /* stores the sum of all the elements in the array */
void *runner(void *param); /* threads call this function */
/* this struct stores variables that will be passed into the runner */
struct runner_struct{
int *array; /* pointer to the numbers array */
int id; /* for printing purposes, irrelevant to computation */
int min; /* stores the minimum index for a thread to traverse */
int max; /* stores the the maximum index for a thread to traverse */
int sum; /* stores the thread's component of the array's total sum */
};
/*
*
*/
int main(void) {
clock_t t; /* used to measure the execution time */
t = clock(); /* mark the current time */
Output
amendoza123_CSC_341_01_C (Build, Run)
amendoza123_CSC_341_01_C (Run)
Thread 4, Element 19997: 4000 + 22 = 4022
Thread 4, Element 19998: 4022 + 3 = 4025
Thread 4, Element 19999: 4025 + -91 = 3934
sum = 11070, run time = 187.000000 milliseconds.
Have a nice day!
RUN SUCCESSFUL (total time: 4s)
Run successful.

**10 Threads**


amendoza123_CSC_341_01_C - NetBeans IDE 8.1
File Edit View Navigate Source Refactor Run Debug Profile Team Tools Window Help
Debug
project2.c
Source History
#define NUM_ARRAY 20000 /* number of elements (numbers) for the array */
#define NUM_THREAD 10 /* number of threads for the program */
int numbers[NUM_ARRAY]; /* array is shared by all threads */
int sum; /* stores the sum of all the elements in the array */
void *runner(void *param); /* threads call this function */
/* this struct stores variables that will be passed into the runner */
struct runner_struct{
int *array; /* pointer to the numbers array */
int id; /* for printing purposes, irrelevant to computation */
int min; /* stores the minimum index for a thread to traverse */
int max; /* stores the the maximum index for a thread to traverse */
int sum; /* stores the thread's component of the array's total sum */
};
/*
*
*/
int main(void) {
clock_t t; /* used to measure the execution time */
t = clock(); /* mark the current time */
Output
amendoza123_CSC_341_01_C (Build, Run)
amendoza123_CSC_341_01_C (Run)
Thread 9, Element 19997: 1259 + 22 = 1281
Thread 9, Element 19998: 1281 + 3 = 1284
Thread 9, Element 19999: 1284 + -91 = 1193
sum = 11070, run time = 186.000000 milliseconds.
Have a nice day!
RUN SUCCESSFUL (total time: 5s)
Run successful.