

src\main.c

```
1
2 // task 1, EMB1 assignment 10
3
4 #include <stdio.h>
5 #include <avr/io.h>
6 #include <util/delay.h>
7 #include <stdlib.h>
8 #include "usart.h"
9
10 typedef struct { // define structure
11     char name[10];
12     unsigned char age;
13     unsigned char score;
14 } student_t;
15
16 int main(void) {
17
18     unsigned char i; // initiate variables
19
20     unsigned int avg_age=0, avg_score=0; // init variables for averages, as int because of size
21     srand(0); //init seed for RNG
22
23     uart_init(); // open the communication to the microcontroller
24     io_redirect(); // redirect input and output to the communication
25
26     student_t student_array[7]; // init array of students
27
28     while(1) // start program loop
29     {
30         for(i=0; i<7; i++) //loop for reading student info
31         {
32             printf("Student %hhd name:", i+1); //message for user
33             scanf("%s", student_array[i].name); //read string
34             printf("Student %hhd age:", i+1);
35             scanf("%hhd", &student_array[i].age);
36             student_array[i].score=rand()%100; //get random number for score
37             avg_age+=student_array[i].age; //add up average age, to calculate later
38             avg_score+=student_array[i].score;
39         }
40         avg_age=avg_age/7; //calculate average age by dividing total by 7
41         avg_score=avg_score/7;
42         printf("Average age: %u\n", avg_age); // show average age
43         printf("Average score: %u\n", avg_score); // show average score
44     }
45     return 0; //end program
46 }
47
```