

# Computer Laboratory - lab sheet 10

**Task 1** Copy the program given below. Save (as `position.cpp`), compile and run it.

```
#include <iostream>
#include <fstream>
#include <cmath>
using namespace std;

int main() {
    ofstream dosya("projectile.txt");

    if(dosya.is_open()==false) {
        cout << "cannot open file projectile.txt\n";
        return 0;
    }
    int x, y;
    double v0 = 100.0, t = 0.0, g = 9.81;
    double theta = 60.0 * M_PI/180.0;

    while(t<=20) {
        x = v0*cos(theta)*t;
        y = v0*sin(theta)*t - 0.5*g*t*t;
        dosya << t << '\t' << x << '\t' << y << endl;
        t = t + 1;
    }
    dosya.close();
    cout << "Data is saved to projectile.txt\n";

    return 0;
}
```

## Task 2

Consider that the file `student.txt` contains the name and corresponding exam scores of 20 students in a class (the data is given right). Write a C++ program to perform the following tasks:

- (a) read data from the file into suitable arrays
- (b) output the mean of the each exam
- (c) output the name and the exam scores of the student having the best average (according to 30%, 30%, 40%).

You can download the data from:

<http://www1.gantep.edu.tr/~bingul/ep241/labs/student.txt>

UGUR	67	38	55
KADIR	72	45	60
SEMIH	00	71	45
GOZDE	73	70	61
FIRAT	30	69	35
EDA	51	58	67
FULYA	41	65	73
GUL	67	69	70
EMRE	30	40	84
AHMET	76	41	67
ISMAIL	67	15	59
MELIKE	71	65	61
TANER	59	50	58
SEHER	79	51	65
ALI	90	88	72
EMIN	88	92	78
HAVVA	76	85	80
FERDA	10	25	50
MUKRIME	54	15	12
TUGBA	61	70	66