# CS 104



# LAB WEEK 02

Your programs should start with the following comments: (do not forget to change the name)

**# Emre Sefer, CS 104, Fall 2021, LAB02**

**# This program prints several lines.**

1. Write a program that prints the following lines (Replace NAME with your name):

```
 /\_/\
/ o o \
\  ~  /
Hello "NAME"!
```

2. In physics, a common useful equation for finding the position s of a body in linear motion at a given time t, based on its initial position $s_0$, initial velocity $v_0$, and rate of acceleration a, is the following:

$$S = s_0 + v_0*t + 1/2*a*t^2$$

Write a program in which you compute and print s for the following initial values:

$s_0$ with a value of 12,
$v_0$ with a value of 3.5,
a with a value of 9.8,
and t with a value of 10.

You should not get 47.0

```
The value of s is 537.0
```

Use variables in your solution.

3. Three friends are going to rent a house. The possibilities are Taşdelen (1300TL), Çekmeköy (1500TL), Üsküdar (1800TL) and Kadıköy (2000TL). Additionally, they will share the monthly contribution (aidat) which is 10% of the rent.

Write a program which calculates how much each person should pay in each case.

You should get the following output:

```
Taşdelen: 476.6666666666667
Çekmeköy: 550.0
Üsküdar: 660.0
Kadıköy: 733.3333333333334
```

Use variables in your solution.

4. You will write a program which calculates the GPAs of two students Merve and Özlem. Their grades and the grading system are given below. You will calculate and print their GPAs.

Merve:
| | | |
|---|---|---|
| CS101 | A | 6 credits |
| ENG101 | B- | 4 credits |
| MATH103 | C+ | 6 credits |
| PHYS101 | D+ | 8 credits |
| TLL101 | A- | 4 credits |

Özlem:

| | | |
|---|---|---|
| CS101 | B+ | 6 credits |
| ENG101 | C | 4 credits |
| MATH103 | A- | 6 credits |
| PHYS101 | D | 8 credits |
| TLL101 | A | 4 credits |

Here is the grading system:

| | |
|---|---|
| A | 4.00 |
| A- | 3.70 |
| B+ | 3.30 |
| B | 3.00 |
| B- | 2.70 |
| C+ | 2.30 |
| C | 2.00 |
| C- | 1.70 |
| D+ | 1.30 |
| D | 1.00 |
| F | 0.00 |

```
Özlem's GPA is 2.642857142857143
Merve's GPA is 2.6357142857142857
```