

CSE 102 –Computer Programming

HW-02

171044039-AHMED SEMİH ÖZMEKİK

PART 1

Screenshots:

```
Enter Student Number(3-50)> 2
Not in range!
Enter Student Number(3-50)>51
Not in range!
Enter Student Number(3-50)>45

35 10 59 100 86 48 17 44 82 2
93 25 27 99 80 44 35 62 52 24
89 96 55 70 58 14 83 74 25 91
44 60 0 70 60 87 84 43 30 32
11 90 57 39 54
-----
Student Score Calculator Menu for 45 Student

1.Most Succesful Student
2.Most Unsuccesful Student
3.Letter Grade Statics
4.Calculate Average
5.Show All Data

Make Selection(1-5)> |
```

```
-----
Student Score Calculator Menu for 45 Student

1.Most Succesful Student
2.Most Unsuccesful Student
3.Letter Grade Statics
4.Calculate Average
5.Show All Data

Make Selection(1-5)> 0
False Selection!
```

```
Student Score Calculator Menu for 45 Student

1.Most Succesful Student
2.Most Unsuccesful Student
3.Letter Grade Statics
4.Calculate Average
5.Show All Data

Make Selection(1-5)> 1

Most Succesfully Student:
Index: 4
Score: 100
Letter Grade: A
```

Student Score Calculator Menu for 45 Student

1. Most Successful Student
2. Most Unsuccessful Student
3. Letter Grade Statics
4. Calculate Average
5. Show All Data

Make Selection(1-5)> 2

Most Unsuccessfully Student:

Index: 33

Score: 0

Letter Grade: F

Student Score Calculator Menu for 45 Student

1. Most Successful Student
2. Most Unsuccessful Student
3. Letter Grade Statics
4. Calculate Average
5. Show All Data

Make Selection(1-5)> 3

6 students got letter grade 'A'
7 students got letter grade 'B'
3 students got letter grade 'C'
3 students got letter grade 'D'
26 students got letter grade 'F'

Student Score Calculator Menu for 45 Student

1. Most Successful Student
2. Most Unsuccessful Student
3. Letter Grade Statics
4. Calculate Average
5. Show All Data

Make Selection(1-5)> 4

The Average Score of 45 Student is 54.22

Student Score Calculator Menu for 45 Student

1. Most Successful Student
2. Most Unsuccessful Student
3. Letter Grade Statics
4. Calculate Average
5. Show All Data

Make Selection(1-5)> 5

Most Successfully Student:

Index: 4

Score: 100

Letter Grade: A

Most Unsuccessfully Student:

Index: 33

Score: 0

Letter Grade: F

6 students got letter grade 'A'
7 students got letter grade 'B'
3 students got letter grade 'C'
3 students got letter grade 'D'
26 students got letter grade 'F'

The Average Score of 45 Student is 54.22

PART 2

In this pieces of code , I have used switch statement for assignments. I knew that this was not efficient way to implement this algorithm.

```
for(int i = 0;i<DigitNumber(number);i++){
    remainder = number%Power(10,i+1);
    number-=remainder;

    switch(DigitNumber(remainder)){
        case 1: first_digit=remainder; break;
        case 2: second_digit=remainder/(Power(10,i)); break;
        case 3: third_digit=remainder/(Power(10,i)); break;
        case 4: fourth_digit=remainder/(Power(10,i)); break;
        case 5: fifth_digit=remainder/(Power(10,i)); break;
    }
}
```

Instead of this , I wanted to use that implementation down below. But anyway , this is not important that much if we consider the homework's context.

```
for(int i = 0;i<DigitNumber(number);i++){
    remainder = number%Power(10,i+1);
    number-=remainder;

    digits[i]=remainder/(Power(10,i));
}
```

Plus , I want to give a little explanation of this algorithm for finding digits of a number.

For loop , loops as many as number of digits. So each turn we find each digit. In the body part , since “i” equals to zero at first place , we first evaluate the remainder for division with 10^1 . Which gives us very first digit of this number. Then we update the number by subtraction with remainder. That means we get rid of first digit. Then the assignment part comes. In the second turn we again find the remainder for division 10^2 which gives us second

digit but not as clean as the first one. For example let the number be 123. First turn, we find 3 and after the update we have 120. And if we divide 120 with 10^2 , we get 20 as remainder. As a digit number for 0-9 this is not acceptable and it is taken care of well in the switch statements by dividing that remainder with "i" for to get rid of zeros/zero on the right.

So this is the algorithm that can work pretty much any given number. But again for homework's context, I warned to user for out of boundaries which we set.