# Report for the lab assignment 1 - Computer Technology Course (1DT301) - Group E1

[redacted]

## Task 1:

The number 17 is stored in the register x2 after all the steps are executed.

## Task 2:

1) 11010010100 0000000010000000 00010 – MOVZ x2, #128
2) 11010010100 0000000011100111 00100 – MOVZ x4, #231
3) 11001011000 00010 000000 00100 00101 – SUB x5, x4, x2
4) D360 0CA5 = 11010011011 00000 000011 00101 00101 – LSL x5, x5, #3

## Task 3:

```
MOVZ x1, #5
MOVZ x2, #11
LSL x1, x1, #2
LSL x2, x2, #4
ADD x3, x1, x2
ADDI x0, x3, #25
```

## Task 4:

1 893 423 = 1 1100 1110 0100 0010 1111(bin) = 1C E42F(hex)
443 924 = 110 1100 0110 0001 0100(bin) = 6C614(hex)
Solution:

```
MOVZx1, #0x1C, LSL #16
MOVZx2, #0xE42F
ADD x1, x1, x2
ADD x0, x0, x1
MOVZx1, #0x6, LSL #16
MOVZx2, #0xC614
ADD x1, x1, x2
ADD x0, x0, x1
```

## Task 5:

```
        MOVZx0, #99
loop:
        ADD x1, x1, x0
        SUBISx0, x0, #2
        B.GT loop
        B end
end:
```

## Task 6:

```
//Set up base memory address
        MOVZx7, #0x1000, LSL #16
//Store the numbers 1, 4, 1, 5, 9, 2 in dynamic memory
        MOVZx1, #1
        STUR x1, [x7, #0]
        MOVZx1, #4
        STUR x1, [x7, #8]
        MOVZx1, #1
        STUR x1, [x7, #16]
        MOVZx1, #5
        STUR x1, [x7, #24]
        MOVZx1, #9
        STUR x1, [x7, #32]
        MOVZx1, #2
        STUR x1, [x7, #40]

        LDUR x2, [x7, #0]
loop:
        ADD x0, x0, x2
        ADDI x7, x7, #8
        LDUR x2, [x7, #0]
        CBZ x2, exit
        B loop
exit:
```