# Homework 3

TP01: Calculate the sum of series of 8 bit numbers (no carry)

```
LXI H 2000
LDA 2010
MOV B A
MVI A 00
NEXT: ADD M
INX H
DCR B
JNZ NEXT
STA 2005

HLT
```

TP02: Calculate the sum of series of 8 bit numbers (with carry)

```
LXI H 2000
LDA 2010
MOV B A
MVI A 00
MVI C 00
NEXT: ADD M
JNC SKIP
INR C
SKIP: INX H
DCR B
JNZ NEXT
STA 2005
MOV A C
```

```
STA 2006

HLT
```

TP03: Calculate the sum of 1+2+..+n

```
LDA 2000
MOV B A
MVI A 00
MVI C 01
NEXT: ADD C
INR C
DCR B
JNZ NEXT
STA 2001

HLT
```

TP04: write an assembly language to calculate a square of a number

```
MVI H 07
MVI L 07
XCHG
MOV C D
MVI D 00
LXI H 0000
LOOP: DAD D
DCR C
JNZ LOOP
SHLD 2001
HLT
```

TP05: write an assembly language to calculate (a+b)^2 and store answer in location 2005

```
LDA 2000
MOV B A
LDA 2001
ADD B
MOV B A
MVI A 00
MOV C B
LOOP: ADD B
DCR C
JNZ LOOP
STA 2005

HLT
```

TP06: write an assembly language to calculate whether m X 2n and store answer in address 2000

```
MVI A 05
MVI C 03
LOOP: RLC
DCR C
JNZ LOOP
STA 2000

HLT
```

TP07: Write an assembly language to calculate (a-b)^2

```
MVI A 08
MOV B A
MVI A 03
MOV C A
```

```
MOV A B
SUB C
MOV D A
MOV E A
MVI A 00
LOOP: ADD D
DCR E
JNZ LOOP
STA 2000

HLT
```

TP08: Write an assembly language to calculate whether (a+b)^2 or (a-b)^2

```
MVI A, 01
MVI B, 08
MVI C, 03
CPI 01
JZ ADD
CPI 02
JZ SUB
ADD: MOV A, B
ADD C
MOV H, A
MOV L, A
MVI B, 00
MVI C, 00
JMP MULT
SUB: MOV A, B
SUB C
MOV H, A
```

```
MOV L, A
MVI B, 00
MVI C,00
JMP MULT
MULT: XCHG
MOV C, D
MVI D 00
LXI H 0000
LOOP: DAD D
DCR C
JNZ LOOP
SHLD 2000

HLT
```