

DA - I

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- 1) Pump A takes A minutes
B takes B minutes

In 1 min, Pump A can pump $1/A$ water

Let vol^m, V be ~~1000~~ V

After 1 mi, both start together

$$\therefore \text{Total time} = \boxed{1 + \frac{V - V/A}{A+B}} = 1 + \frac{AV - V}{A(A+B)}$$

\therefore We can't make a general ALP program.

\therefore Let $V = 1000 \text{ L}$

$A = 10 \text{ L/min}$

$B = 20 \text{ L/min}$

We can also take values of $V, A \& B$ from memory loc.

ALP

```
MOV AX, 1000
MOV BX, 10
MOV CX, 20
MOV DX, AX
MUL BX
MOV
SUB MOV AX, DX
MOV DX, AX
ADD MOV AX, DX CX, BX
MOV
MOV AX, BX
ADD AX, CX
MUL AX
```

```
[ AX = V
  BX = A
  CX = B
  DX = V
```

// AV

// AV - V

// DX = AV - V

// BX = A

// AX = A + B

// AX = A(A+B)

~~Program~~

MOV BX, AX

MOV AX, DX

DIV BX

INC AX

// ~~Reverse code of A~~

// $BX = A(A+B)$

// $AX = AV - 1$

2

Assume all address locations have higher value 28
so that we can use register like AH, AL,

23	✓ SI
34	200
12	201
21	202
14	203
26	204
83	205
	206

ALP :

MOV SI, 200

MOV CH, 0

MOV CL, 6

L1: MOV AX, 0

MOV DH, 0

MOV BL, SI

MOV CH, CL

L2: ADD BL, 6 // 6 = n-1

SUB BL, CL

ADD BL, DH

INC DH

ADD AX, [BL]

DEC CH

JNZ L2

DIV AX, CL

~~MOV DL, SI~~

MOV DL, SI

ADD DL, 6

SUB DL, CL

CMP [DL], AX

// Print if CF = 1

DEC CL

JNZ L1

// Always push val.

Getting location/
address of number
to be added

$$BL = SI + 6 - CL + DH$$

6 because
(n-1)
To get new
memory
address

Same logic as
above

B

Fibonacci

Fib:

```
MOV CL, AL
ADD CL, BL
MOV BL, AL
```

// To check even

```
SHR CL, 1
```

```
JNC ne
```

```
INC CH
```

```
CMP CH, 4
```

```
JNC ne
```

```
SHL CL, 1
```

```
ADD AH, CL
```

ne:

```
SHL CL, 1
```

```
INC CH
```

```
CMP CH, 100
```

```
JZ next
```

```
call Fib
```

```
next: Ret
```

```
MOV CH, 0
```

```
MOV BL, 0
```

```
MOV AL, 1
```

```
MOV AH, 0
```

```
call Fib
```

// Finding fibonacci number

// To check LSB

// To check ~~max~~ max. of 4 no.

// SHL to get back the num

// 100 H is, 256 fib. no. will be found