1. Main window of the program

Training program

Help

Information about selected instruction

Program

Instructions

Conventional code

Operation code byte

Addressing byte

Flags

Mokomoji programa

Programa Komandos Pagalba..

Informacija apie pasirinktą komandą

Mnemokodas : nėra – **None**

Operacijos kodo baitas : nėra

Adresacijos baitas : nėra

Disp L : nėra

Disp H : nėra

Data L : nėra

Data H : nėra

Seg L : nėra

Seg H : nėra

Požymiai : nėra

2. Help

Help **Conventional signs and symbols** **Programming model of the processor**

About addressing byte mod reg r/m

About flags

About addressing modes

Mokomoji programa

Programa Komandos Pagalba..

Zymejimai programoje

Registrinis procesoriaus modelis

Apie "mod reg r/m" – adresacijos baita

Apie pozymius

Apie adresacijos budus

Informacija apie

Mnem...

Operacijos kodo baitas : F6h

Adresacijos baitas : mod 100 r/m

Disp L : nėra

Disp H : nėra

Data L : nėra

Data H : nėra

Seg L : nėra

Seg H : nėra

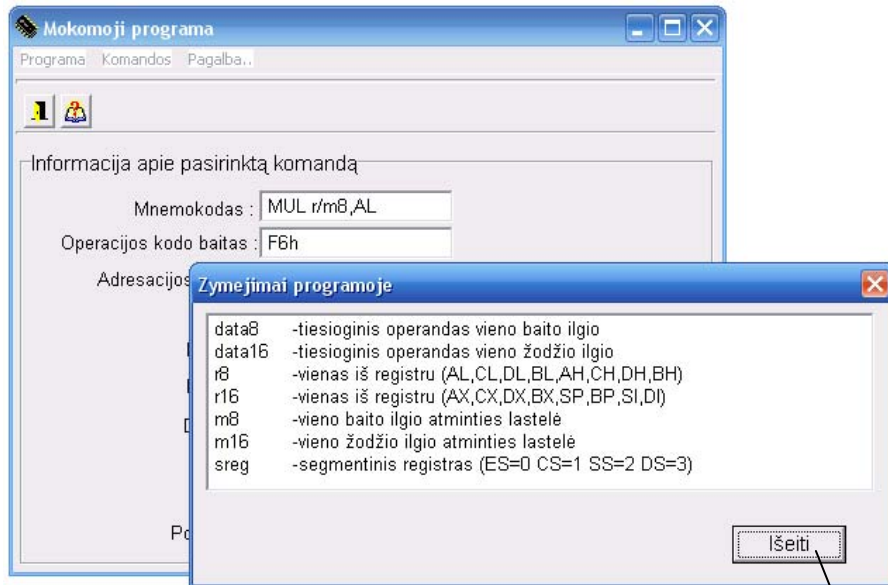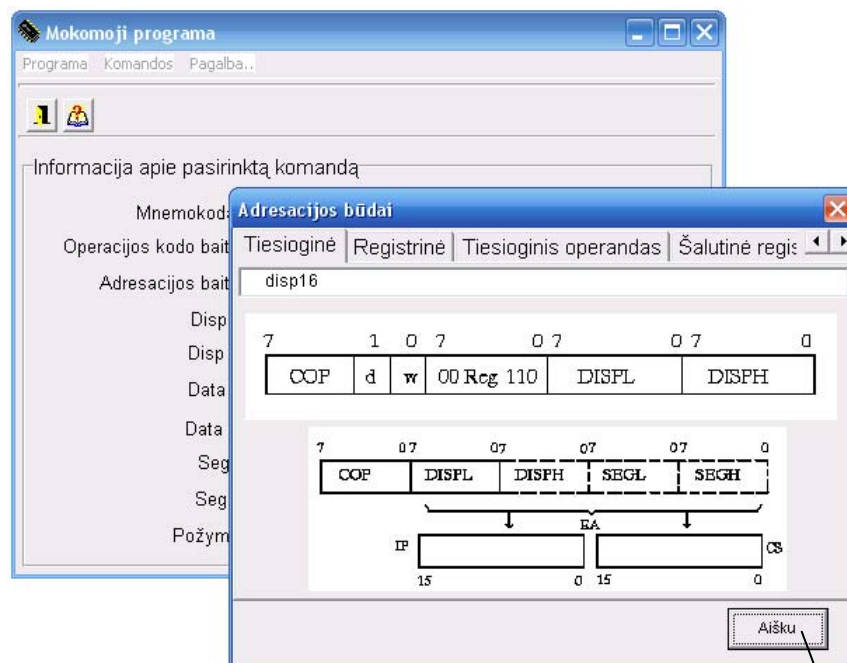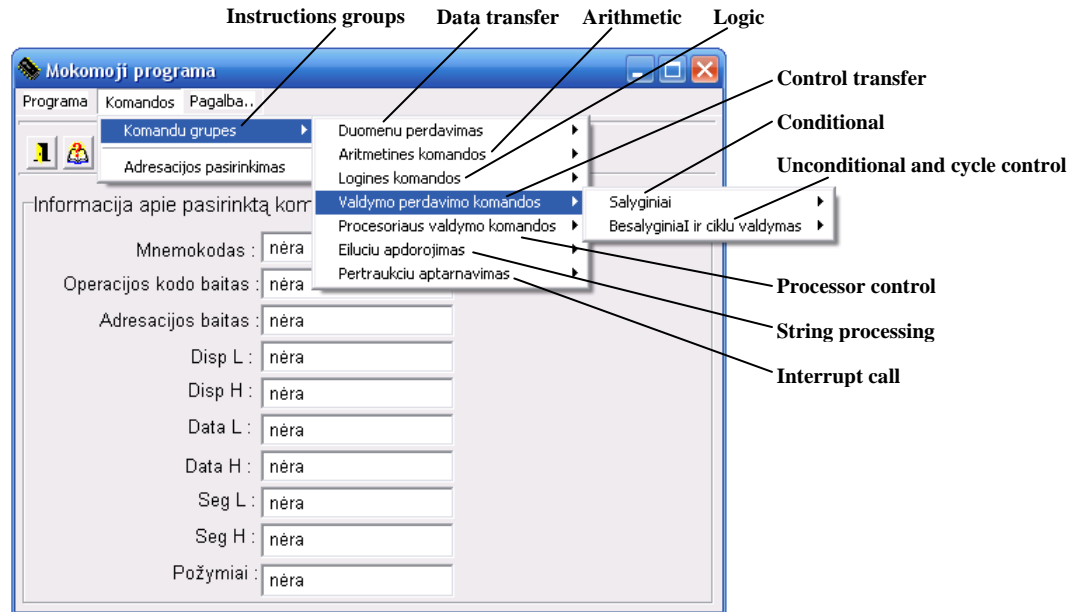Požymiai : c,o

Conventional signs and symbols

data8 – 8-bit direct operand or immediate data
data16 – 16-bit direct operand or immediate data
r8 – 8-bit operand in register (AL, CL, DL, BL, AH, CH, DH, BH)
r16 – 16-bit operand in register (AX, CX, DX, BX, SP, BP, SI, DI)
m8 – 8-bit operand in memory
m16 – 16-bit operand in memory
sreg – segment register (ES = 0 CS = 1 SS = 2 DS = 3)
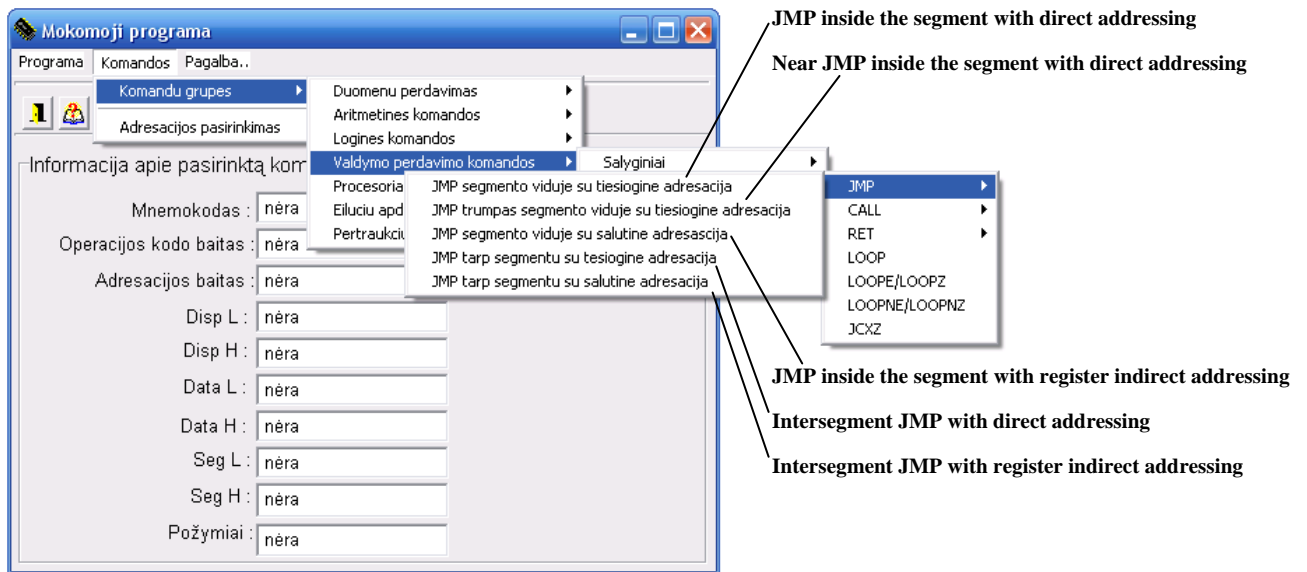
Addressing modes

Tiesioginė – direct
Registrinė – register
Tiesioginis operandas – immediate
Šalutinė registrinė – register indirect
Bazinė ir indeksinė – base and index
Bazinė-indeksinė – base-index
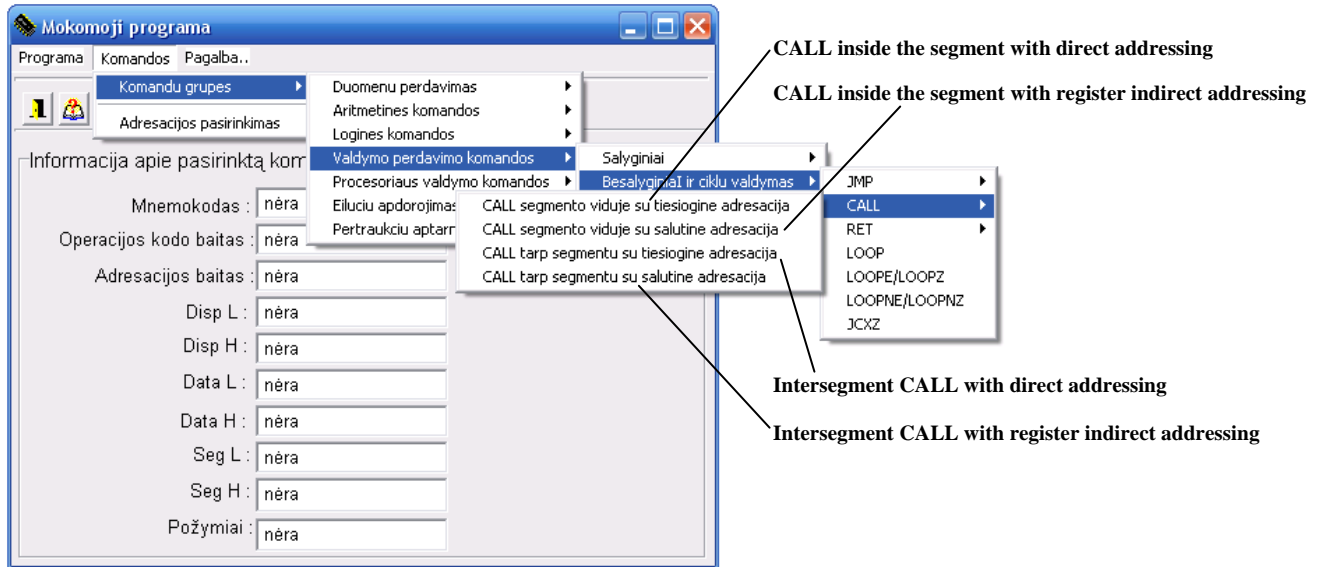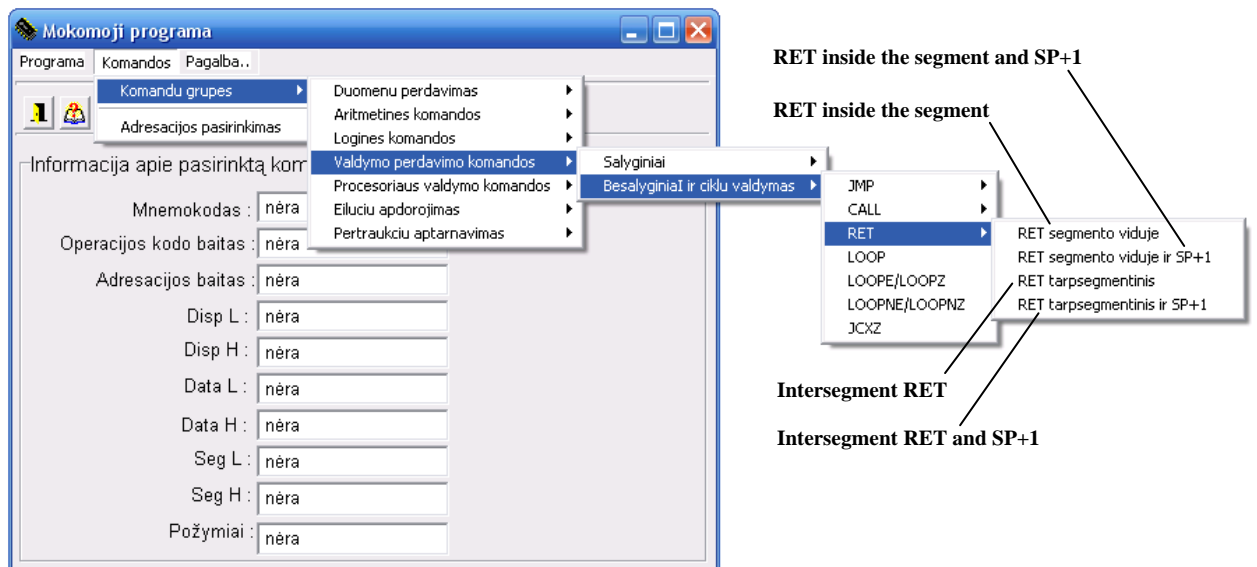Simboliu apdorojimas – string processing
Stekinė – stack

3. Instructions

Instructions groups   Data transfer   Arithmetic   Logic

Control transfer

Conditional

Unconditional and cycle control

Processor control

String processing

Interrupt call

Unconditional transfers or jumps

JMP inside the segment with direct addressing

Near JMP inside the segment with direct addressing

JMP inside the segment with register indirect addressing

Intersegment JMP with direct addressing

Intersegment JMP with register indirect addressing

Unconditional calls

CALL inside the segment with direct addressing

CALL inside the segment with register indirect addressing

Intersegment CALL with direct addressing

Intersegment CALL with register indirect addressing

Unconditional returns

RET inside the segment and SP+1

RET inside the segment
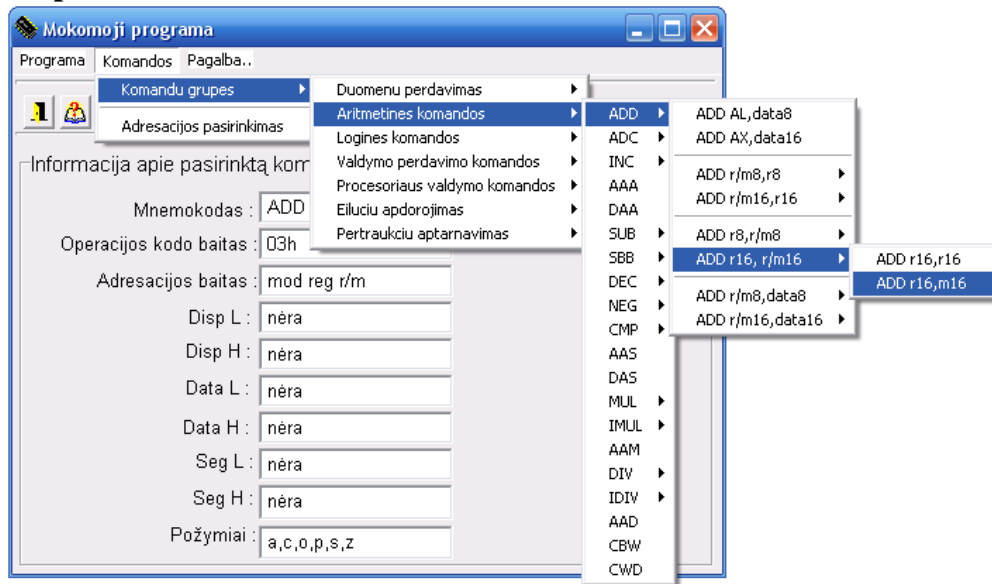
Intersegment RET
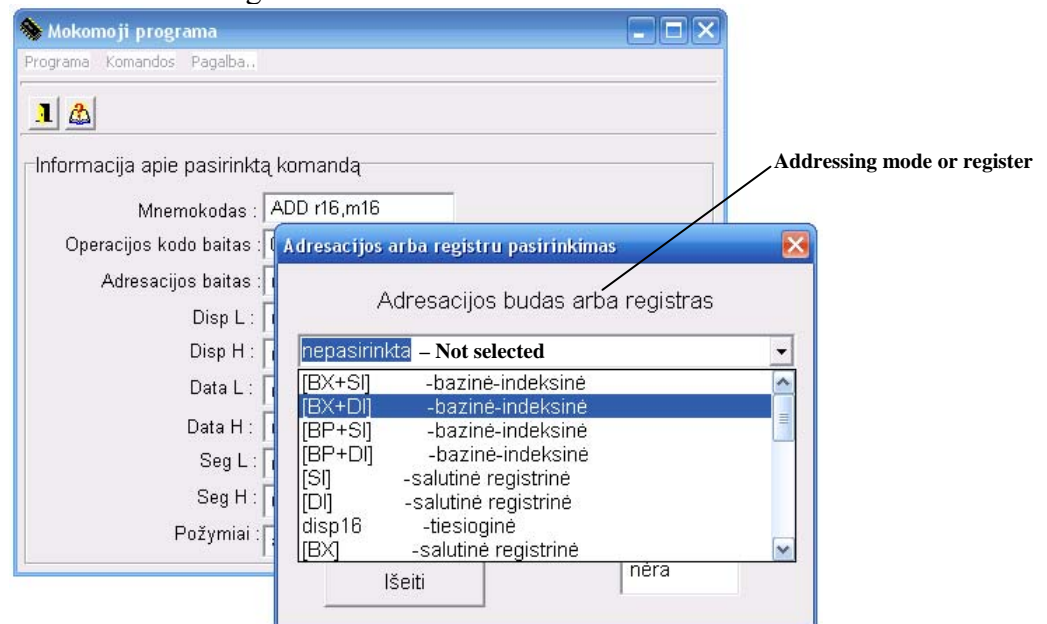
Intersegment RET and SP+1

4. Selection of the instruction and addressing mode
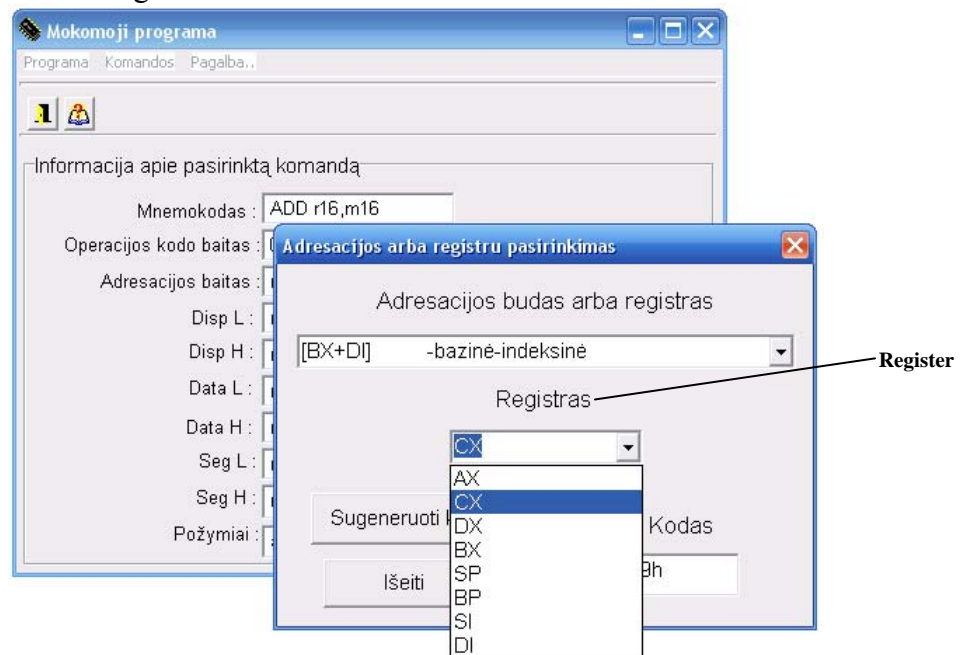
1) Step: Select an instruction

2) Step: Select an addressing mode

[BX+SI] – base-index addressing

[BX+DI] – base-index addressing

[BP+SI] – base-index addressing

[BP+DI] – base-index addressing

[SI] – register indirect addressing

[DI] – register indirect addressing

disp16 – direct addressing

[BX] – register indirect addressing

[BX+SI]+disp8 – base-index addressing

[BX+DI]+disp8 – base-index addressing

[BP+SI]+disp8 – base-index addressing

[BP+DI]+disp8 – base-index addressing

[SI]+disp8 – index addressing

[DI]+disp8 – index addressing

[BP]+disp8 – base addressing

[BX]+disp8 – base addressing

[BX+SI]+disp16 – base-index addressing

[BX+DI]+disp16 – base-index addressing

[BP+SI]+disp16 – base-index addressing

[BP+DI]+disp16 – base-index addressing

[SI]+disp16 – index addressing

[DI]+disp16 – index addressing

[BP]+disp16 – base addressing

[BX]+disp16 – base addressing

3) Step: Select a register

4) Step: Generate the code of the instruction

Information about selected instruction

Mnemonic code of the instruction

Conventional code

Operation code byte

Addressing byte

Addressing byte fields

Mod and r/m fields

Reg field

Flags

Mokomoji programa

Programa Komandos Pagalba..

Informacija apie pasirinktą komandą

Mnemokodas : ADD r16,m16

Operacijos kodo baitas : 03h

Adresacijos baitas : 09h

Disp L : nėra

Disp H : nėra

Data L : nėra

Data H : nėra

Seg L : nėra

Seg H : nėra

Požymiai : a,c,o,p,s,z

Komanda

ADD CX,[BX+DI]

Pasirinkti adresaciją

AB laukai

MOD ir r/m laukai

[BX+DI]

REG laukas

CX