Type of Operations: Transfer of Control

- Branch instruction (jump instruction)
  - RP X  Branch to location X if result is positive
  - BRN X  Branch to location X if result is negative
  - BRZ X  Branch to location X if result is zero
  - BRO X  Branch to location X if overflow occurs
  - BRE R1, R1, X  Branch to X if contents of R1 = contents of R2

- Skip instruction
  - ISZ (increment-and-skip-if-zero)

- Function call instructions
  - A call instruction: branches from the present location to the procedure
  - A return instruction: returns from the procedure to the place from which it was called

Stack

- When execute a program
  - Push space for return value(s)
  - Push arguments
  - CALL: push return address (PC’s value) on the stack
  - Push old frame pointer
  - Set the frame pointer (a register) to the stack pointer
  - Push local variables, if necessary
  - Execute the subroutine
  - Pop the local variables, if any
  - Pop the old stack frame and restore it
  - RETURN: pops the return address to the PC
  - Pop the arguments
  - The top of the stack is the return value