implemented today are a combination of textual and teach-pendant programming.

Some of the languages that have been developed are:

WAVE	VAL
AML	RAIL
MCL	TL- 10
IRL	PLAW
SINGLA	VAL II

Result

Various commands of VAL II programming studied.

EXP.: 11

1.ROBOT PROGRAMMING – VAL

Exercise 1

Develop a program in VAL II to command a PUMA robot to unload a cylindrical part of 10 mm diameter from machine 1 positioned at point P1 and load the part on machine 2 positioned at P2. The speed of robot motion is 40 in./s. However, because of safety precautions, the speed is reduced to 10 in./s while moving to a machine for an unloading or loading operation.

Solution

SIGNAL 5

SPEED 40 IPS

OPEN 100

APPRO PI, 50

SPEED 10 IPS

MOVE PI

GRASP 10, 100

DEPART P1, 50

SPEED 40 IPS

APPRO P2, 50

SPEED 10 IPS

MOVEP2

BELOW

OPENI 100

ABOVE

DEPART P2, 50

STOP

Sequence:

P_1 → Position of M_1, P_2 – Position of M_2

Signal From Port 5 initiated the Robot

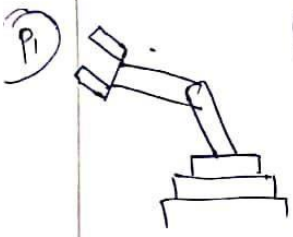
↓

Sequence — Set Robot speed 40 Inch per sec.

↓

Open gripper, Move near to Position 1

↓



Lower Speed, Move and grasp the workpiece from P1

↓

Depart slightly and set speed to normal,

↓

Move near to P_2, lower speed

↓

Open gripper, Place, depart to a little,

↓

Back to Home Position or stop.

Result:

VAL II Command Sequence Developed for the given Problem.

Exercise 2

Develop a program in VAL II to command a PUMA robot to insert a job stick in 3 different places P1,P2,P3. Robot has to pick job stick from automatic feeder in P0.

Solution

SIGNAL 5

OPEN 100

SPEED 40 IPS

MOVE P0

GRASP 10

DEPART P1, 50

SPEED 10 IPS

MOVE P1

OPENI 100

DEPART P1, 50

MOVE P0

GRASP 10

DEPART P2, 50

MOVE P2

OPENI 100

DEPART P2, 50

MOVE P0

GRASP 10

DEPART P3, 50

MOVE P3

OPENI 100

DEPART P3, 50

MOVE P0

GRASP 10

DEPART P4, 50

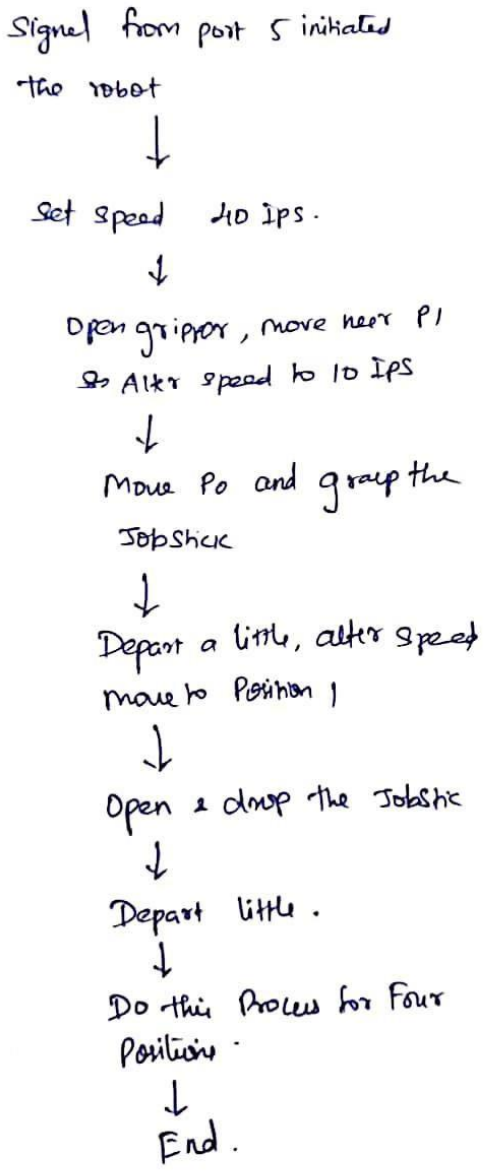
MOVE P4

OPENI 100

DEPART P4, 50

STOP

Sequence:



Result:

VAL II Command Sequence Developed for the given Problem.