

HEI-Vs Engineering School

Robot pick and place motion.

Y id	X left	X Right
1	Pos 1	Pos 6
2	Pos 2	Pos 7
3	Pos 3	Pos 8
4	Pos 4	Pos 9
5	Pos 5	Pos 10

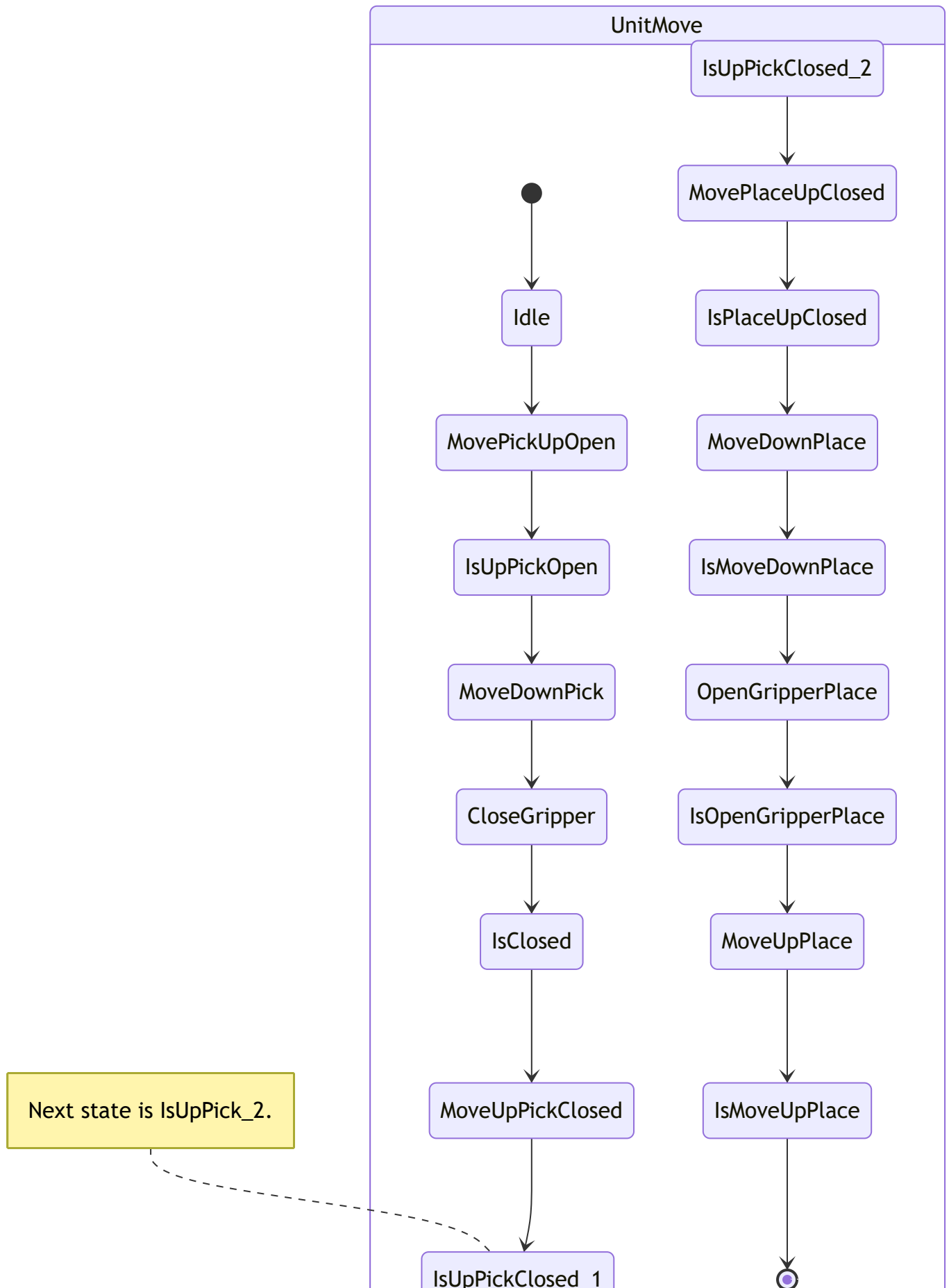
Y id	X left	X Right
1	X = -199, Y = -78, Z = -145	X = -199, Y = -78, Z = -145
2		
3	X = -199, Y = 2, Z = -145	X = -119, Y = 2, Z = -145
4		
5		

Z Flight position = -95 (Offset = +50)

Position 3 := X-119 / Y 2 / Z -145

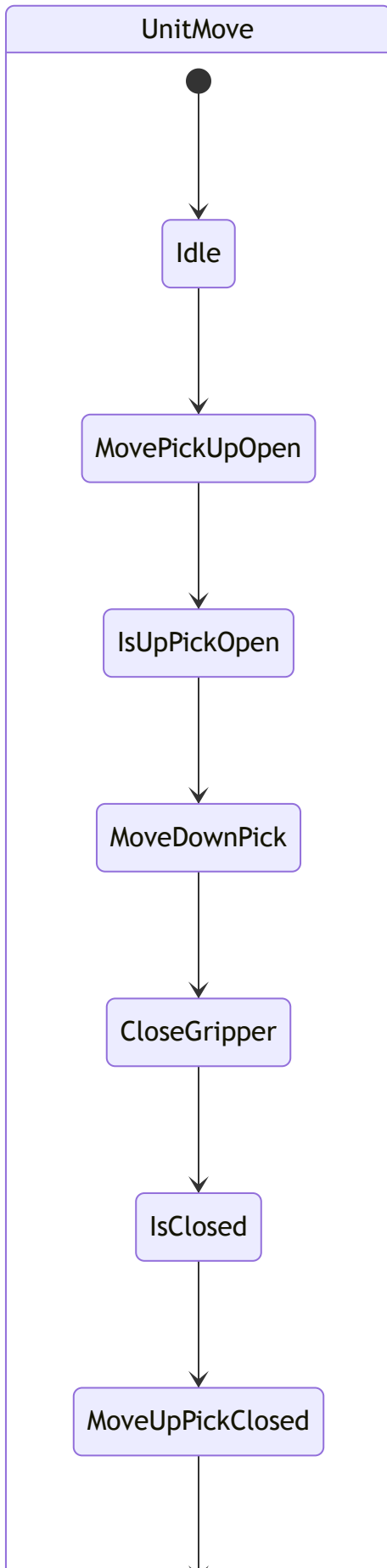
Base Partial State Machine

Diagram in two parts



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Whole Diagram



IsUpPickClosed

MovePlaceUpClosed

IsPlaceUpClosed

MoveDownPlace

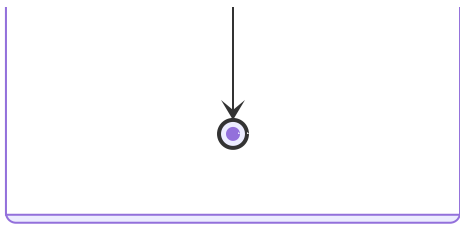
IsMoveDownPlace

OpenGripperPlace

IsOpenGripperPlace

MoveUpPlace

IsMoveUpPlace



TYPE UnitMoveState :

```
(  
  Idle,  
  MovePickUpOpen,  
  IsUpPickOpen,  
  MoveDownPick,  
  CloseGripper,  
  IsClosed,  
  MoveUpPickClosed,  
  IsUpPickClosed,  
  MovePlaceUpClosed,  
  IsPlaceUpClosed,  
  MoveDownPlace,  
  IsMoveDownPlace,  
  OpenGripperPlace,  
  IsOpenGripperPlace,  
  MoveUpPlace,  
  IsMoveUpPlace  
);
```

END_TYPE

Modified like that

```
TYPE E_UnitMoveForPickAndPlace :  
(  
  Idle                := 999,  
  MovePickUpOpen      := 10,  
  IsUpPickOpen        := 20,  
  MoveDownPick        := 30,  
  CloseGripper        := 40,  
  IsClosed             := 50,  
  MoveUpPickClosed    := 60,  
  IsUpPickClosed      := 70,  
  MovePlaceUpClosed   := 80,  
  IsPlaceUpClosed     := 90,  
  MoveDownPlace       := 100,  
  IsMoveDownPlace     := 110,  
  OpenGripperPlace    := 120,  
  IsOpenGripperPlace  := 130,  
  MoveUpPlace         := 140,  
  IsMoveUpPlace       := 150,  
  MotionError         := 666  
) := MotionError;  
END_TYPE
```



```

CASE UnitMoveState OF
  E_UnitMoveForPickAndPlace.Idle:
    (* Code for Idle state *)
  E_UnitMoveForPickAndPlace.MovePickUpOpen:
    (* Code for MovePickUpOpen state *)
  E_UnitMoveForPickAndPlace.IsUpPickOpen:
    (* Code for IsUpPickOpen state *)
  E_UnitMoveForPickAndPlace.MoveDownPick:
    (* Code for MoveDownPick state *)
  E_UnitMoveForPickAndPlace.CloseGripper:
    (* Code for CloseGripper state *)
  E_UnitMoveForPickAndPlace.IsClosed:
    (* Code for IsClosed state *)
  E_UnitMoveForPickAndPlace.MoveUpPickClosed:
    (* Code for MoveUpPickClosed state *)
  E_UnitMoveForPickAndPlace.IsUpPickClosed:
    (* Code for IsUpPickClosed state *)
  E_UnitMoveForPickAndPlace.MovePlaceUpClosed:
    (* Code for MovePlaceUpClosed state *)
  E_UnitMoveForPickAndPlace.IsPlaceUpClosed:
    (* Code for IsPlaceUpClosed state *)
  E_UnitMoveForPickAndPlace.MoveDownPlace:
    (* Code for MoveDownPlace state *)
  E_UnitMoveForPickAndPlace.IsMoveDownPlace:
    (* Code for IsMoveDownPlace state *)
  E_UnitMoveForPickAndPlace.OpenGripperPlace:
    (* Code for OpenGripperPlace state *)
  E_UnitMoveForPickAndPlace.IsOpenGripperPlace:
    (* Code for IsOpenGripperPlace state *)
  E_UnitMoveForPickAndPlace.MoveUpPlace:
    (* Code for MoveUpPlace state *)
  E_UnitMoveForPickAndPlace.IsMoveUpPlace:
    (* Code for IsMoveUpPlace state *)
  E_UnitMoveForPickAndPlace.MotionError:
    (* Code for MotionError state *)
ELSE
  (* Code for undefined states *)
END_CASE

```

Check That

plc/app/Application/sym/PRG_Process/IrMoveAbs_X