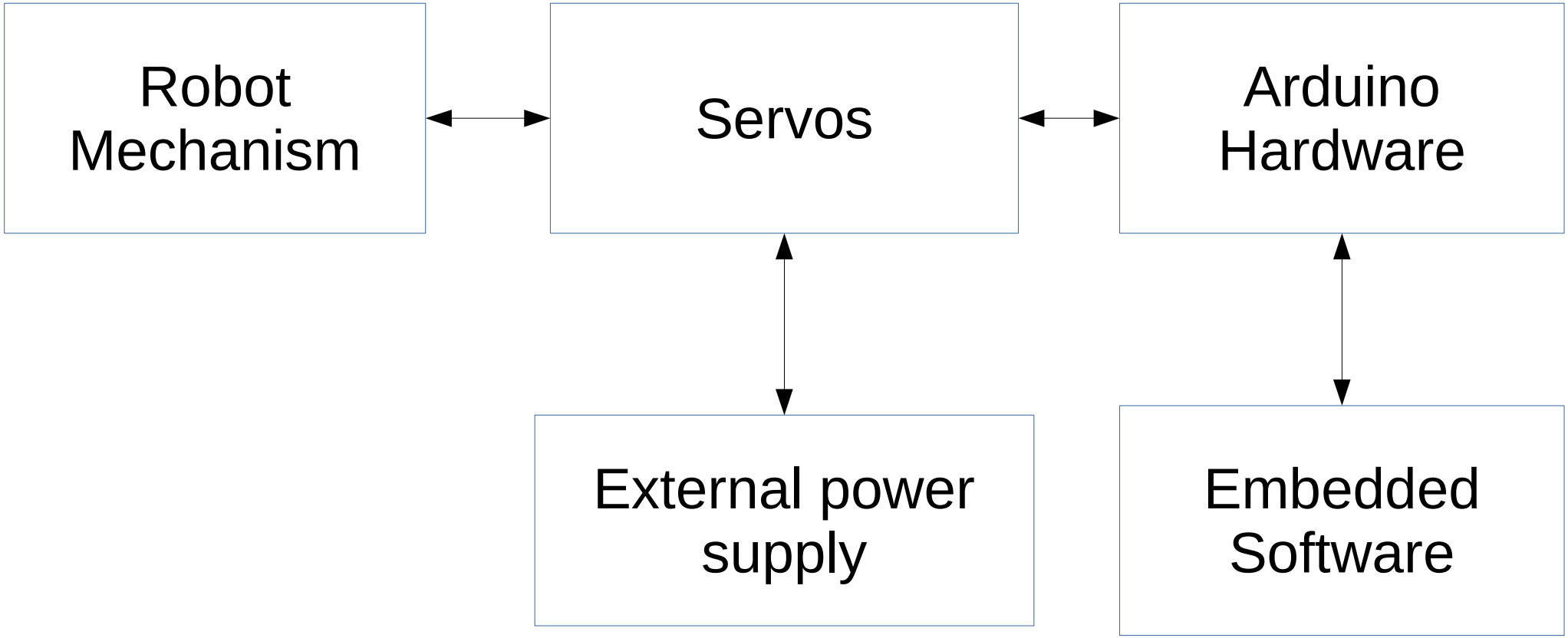
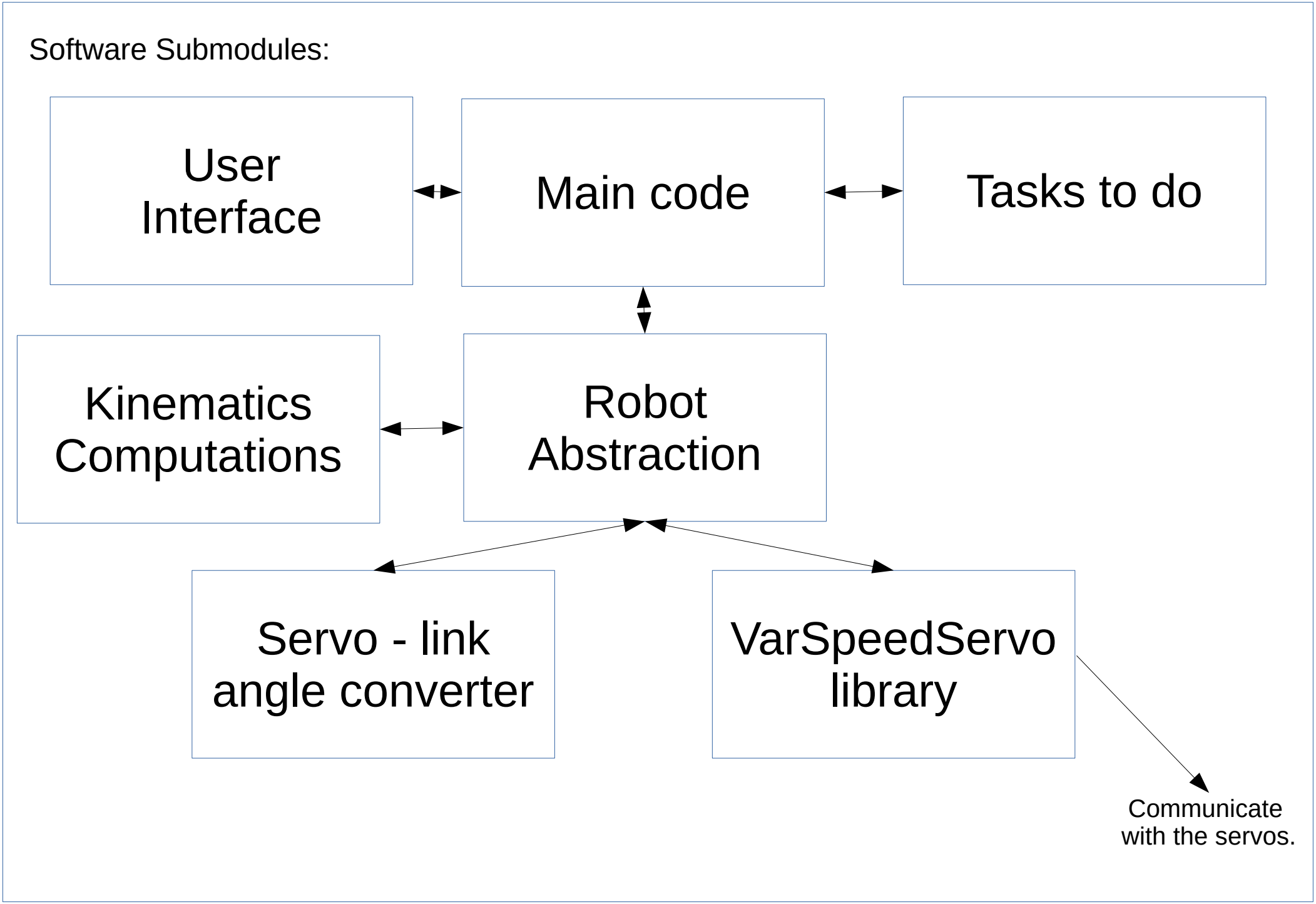
Project Modules:



Software Submodules:



Main Class of The System*:

RobotARR5

angle_t clawClosingAngle
VarSpeedServo joint[3]
VarSpeedServo claw
angle_t servoAngle[3]
coordinates_t currentCoordinates
orientation_t currentOrientation
int jointSpeed[3]
int clawSpeed

RobotARR5(coordinates_t initialCoordinates)
void setClawClosingAngle(angle_t closingAngle)
void getClawClosingAngle(void)
void closeClaw(void)
void openClaw(void)
coordinates_t getCurrentCoordinates(void)
orientation_t getCurrentOrientation(void)
void setJointSpeed(joint_t joint, int speed)
int getJointSpeed(void)
void setClawSpeed(int speed)
int getClawSpeed(void)
void goTo(coordinates_t position)

New typedefs:

- *angle_t*: special type of int
- *coordinates_t:* struct with *x, y* and *z*
- *orientation_t:* struct with all 9 parameters of the rotation matrix
- *joint_t*: Value from an enum.

Typical workflow with the robot:

1) Instantiate the class;
2) Set the joint and claw speeds;
3) Order the robot to go to the desired position;
4) While it's moving, track it's coordinates;
5) Order it to close the claw;
6) Order it to go to another position;
7) Track the coordinates again;
8) Order it to open the claw.

*GPIO information (pin numbers) omitted