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// PROGRAMMING SKILLS ROUTINE FOR CATAPULT BOT
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double skills[] = {
    90, // START FACING 90°

    WRISTSEEK,WRIST_FORWARD_POS*0.5, // LOWER WRIST
    DRAW_BACK, // DRAW BACK CATAPULT

    DRIVE,-100,90,BLACK,1, // DRIVE OFF TILE
    DRIVE,-127,90,DISTANCE,1.5,2, // DRIVE TO KNOCK CAP
    DRIVE,127,90,DISTANCE,0.1,1, // DRIVE BACK

    TURN,0,2, // TURN TO PICK UP
    FLIPSEEK,FLIP_POS1, // FLIPPER SEEK TO STOP DRIFE
    WRISTSEEK,WRIST_FORWARD_POS, // PUT FLIPPER DOWN
    PAUSE,0.5, // PAUSE WHILE FLIPPER LOWERS

    DRIVE,-40,0,DISTANCE,0.6,2, // DRIVE TO GET CAP
    WRISTSEEK,WRIST_VERTICAL_POS, // LIFT CAP
    DRIVE,40,0,DISTANCE,0.1,2, // DRIVE FORWARDS A LITTLE
    PAUSE,1.5, // PAUSE WHILE CAP LIFTS

    FLIP, // FLIP CAP
    PAUSE,0.5, // WAIT FOR CAP TO FLIP
    WRISTSEEK,WRIST_FORWARD_POS, // PUT CAP DOWN
    PAUSE,0.5, // PAUSE TO LET CAP DOWN

    DRIVE,127,0,DISTANCE,0.5,2, // DRIVE AWAY
    FLIP, // PUT FLIPPER STRAIGHT
    TURN,45,2, // TURN TO FACE NEXT CAP
    DRIVE,-127,45,DISTANCE,1.25,2, // DRIVE TO OTHER CAP
    WRISTSEEK,WRIST_VERTICAL_POS, // LIFT CAP
    PAUSE,0.25, // PAUSE TO LET LIFT
    FLIP, // FLIP OTHER CAP
    WRISTSEEK,WRIST_FORWARD_POS, // LOWER CAP

    TURN,45,0.5, // TURN TO HELP FLIP
    DRIVE,127,45,DISTANCE,1,2, // DRIVE AWAY
    WRISTSEEK,WRIST_FORWARD_POS, // MAKE SURE WRIST IS DOWN
    TURN,90,2, // TURN TO FACE START TILE

    WRISTSEEK,WRIST_VERTICAL_POS, // RAISE WRIST
    DRIVE,127,90,DISTANCE,2,2, // DRIVE BACK TO TILE
    DRIVE,-127,90,SONAR,0.3,1, // DRIVE AWAY FROM WALL
    FLIP, // REVERT FLIPPER

    WRISTSEEK,WRIST_FORWARD_POS/2, // LOWER WRIST HALF WAY
    TURN,3,2, // TURN TO FACE FLAGS
    DRIVE,127,3,WHITE,2, // DRIVE ONTO TILE
    DRIVE,127,3,BLACK,2, // DRIVE OFF TILE
    DRIVE,127,3,WHITE,2, // DRIVE ONTO NEXT TILE
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DRIVE,70,3,BLACK,2, // DRIVE OFF TILE
DRIVE,-60,3,0.1, // DRIVE TO BREAK
DRIVE,-60,3,DISTANCE,0.1,1, // DRIVE BACK A LITTLE MORE
TURN,0,2, // MAKE SURE LINED UP

TURN,350,2, // TURN TO FACE FLAGS
WRISTSEEK,WRIST_VERTICAL_POS-50, // MOVE WRIST UP TO MAKE SURE
    BALLS IN
TURN_AIM,BLUE_FLAG,LEFT,2, // AIM AT LEFT-MOST BLUE FLAG
WRISTSEEK,WRIST_FORWARD_POS/2, // LOWER WRIST AGAIN
PAUSE,0.25, // SHORT PAUSE

FIRE_AIM, // AIM AND FIRE AT FLAGS
PAUSE,FIRED,2, // PAUSE UNTIL FIRED
PAUSE,0.5, // PAUSE A LITTLE MORE
DRIVE,127,CDIR,DISTANCE,2,2, // DRIVE TO HIT BOTTOM FLAG
TURN,3,2, // TURN STRAIGHT
DRIVE,-127,3,0.2, // DRIVE BACK
TURN,3,2, // MAKE SURE STRAIGHT

DRIVE,-127,0,WHITE,2, // DRIVE TO START TILE
DRIVE,-127,0,DISTANCE,0.1,2, // DRIVE A LITTLE MORE
DRIVE,127,0,DISTANCE,0.05,2, // DRIVE TO BREAK
WRISTSEEK,WRIST_FORWARD_POS, // LOWER WRIST
TURN,125,2, // TURN TO FACE NEXT CAP

DRIVE,-40,125,DISTANCE,1.75,2, // DRIVE TO NEXT CAP
PAUSE,0.25, // SHORT PAUSE
WRISTSEEK,WRIST_VERTICAL_POS, // LIFT CAP
DRIVE,40,125,DISTANCE,0.1,2, // DRIVE BACK A LITTLE
PAUSE,1.5, // PAUSE WHILE CAP LIFTS
FLIP, // FLIP CAP
PAUSE,0.5, // PAUSE TO LET FLIP
WRISTSEEK,WRIST_FORWARD_POS, // PUT CAP DOWN

TURN,180,2, // TURN FOR NEXT MOVE
DRIVE,100,180,DISTANCE,0.8,2, // DRIVE TO LINE UP FOR CAP
FLIP, // PUT FORKS UPRIGHT
WRISTSEEK,WRIST_FORWARD_POS*0.75, // LOWER WRIST HALF WAY
TURN,90,2, // TURN TO FACE CAP
DRIVE,-127,90,DISTANCE,1.35,2, // DRIVE TO KNOCK CAP

TURN,0,2, // TURN TO FACE FLAGS
DRIVE,127,0,DISTANCE,0.1,2, // DRIVE TO CORRECT RANGE
TURN,0,2, // AIM AT FLAGS
TURN,350,1, // AIM AT FLAGS

WRISTSEEK,WRIST_VERTICAL_POS-50, // RAISE WRIST TO KNOCK BALLS
TURN_AIM,BLUE_FLAG,LEFT,2, // AIM AT LEFT-MOST BLUE FLAG
WRISTSEEK,WRIST_FORWARD_POS/2, // LOWER WRIST
PAUSE,0.25, // SHORT PAUSE
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FIRE_AIM,                // FIRE AT FLAGS
PAUSE, FIRED, 2,         // PAUSE UNTIL FIRED
PAUSE, 0.5,              // SHORT PAUSE

DRIVE, 127, CDIR, DISTANCE, 1.5, 2, // DRIVE TO HIT BOTTOM FLAG
TURN, 0, 2,              // TURN STRAIGHT
DRIVE, -100, 0, DISTANCE, 2, 2,     // DRIVE BACK

DRIVE, 127, 0, DISTANCE, 0.5, 2,    // DRIVE FORWARD A LITTLE
TURN, 90, 2,                        // TURN TO FACE NEXT CAP
WRISTSEEK, WRIST_FORWARD_POS,       // LOWER FORKS
DRIVE, -127, 90, DISTANCE, 1, 2,    // DRIVE CLOSE TO CAP

DRIVE, -40, 90, DISTANCE, 1, 3,     // DRIVE TO GET CAP
WRISTSEEK, WRIST_VERTICAL_POS,      // LIFT CAP
DRIVE, -40, 90, DISTANCE, 1, 2,     // DRIVE BACK
PAUSE, 1,                           // PAUSE WHILE CAP LIFTS
FLIP,                               // FLIP THE CAP
WRISTSEEK, WRIST_FORWARD_POS,       // PUT THE CAP DOWN

DRIVE, 100, 90, DISTANCE, 1, 2,     // DRIVE FORWARDS
TURN, 0, 2,                         // TURN TO FACE FLAGS
WRISTSEEK, WRIST_VERTICAL_POS,      // RAISE WRIST
DRIVE, 127, 0, DISTANCE, 1.5, 2,    // DRIVE TO HIT BOTTOM FLAG
TURN, 0, 2,                         // TURN STRAIGHT
DRIVE, -100, 0, DISTANCE, 2, 2,     // DRIVE BACK TO LINE UP FOR
    SHOT
TURN, 345, 1,                     // TURN TO FACE FLAGS

WRISTSEEK, WRIST_VERTICAL_POS-50,   // RAISE WRIST TO KNOCK BALLS
TURN_AIM, BLUE_FLAG, CENTER, 2,    // AIM AT CENTER-MOST BLUE
    FLAG
WRISTSEEK, WRIST_FORWARD_POS/2,     // LOWER WRIST
PAUSE, 0.25,                        // SHORT PAUSE

FIRE_AIM,                // FIRE AT LAST FLAGS
PAUSE, FIRED, 2,         // PAUSE UNTIL FIRED
PAUSE, 0.5,              // SHORT PAUSE

END                               // END OF ROUTINE
};

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