```
print("675 Alpha
VEXCode Virtual
Skills Challenge")
```

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01 introduction

Team 675 Alpha is a VEX VRC Team based in Lawrenceville, Georgia. This season, they have won 5 awards and are currently preparing for the Georgia State Championship.

The team is rather large: 15 members, with 11 of them being underclassmen. One of 675A’s main goals is to teach the upcoming members the basics of robotics, and Online Challenges have been found to be a great way to do this. For this reason, 2 of the underclassmen have worked together under the mentorship of the assistant team leader to complete this challenge.

02 annotated code

```
def when_started1():
    global spins, time

    # Start

    spins = 2
    time = 1

    # Tried setting spins to 1 for speed, but it was not powerful enough to consistently score the Triballs into the goal.
    # Setting variables for wait time and number of spins.
    # Setting variables to make code more streamlined and less errors when programming.

arm_motor.set_velocity(200, PERCENT)
    intake_motor.set_velocity(200, PERCENT)

    # Speed at 50%: Okay, but the bot could be a little faster.
    # Speed at 100%: Better, but still a bit slow.
    # Speed at 200%: No evident difference from 100%.

    arm_motor.spin(FORWARD)
    wait(time, SECONDS)
    drivetrain.set_drive_velocity(100, PERCENT)

    #Setting speed of drivetrain.
```

```
 drivetrain.drive_for(FORWARD, 850, MM)
   drivetrain.turn_for(LEFT, 85, DEGREES)
   intake_motor.spin_for(REVERSE, 95, DEGREES)

   # Score Triball 1
   # Score: 5

 wait(time, SECONDS)
   drivetrain.turn_for(RIGHT, 85, DEGREES)
   intake_motor.spin_for(FORWARD, spins, TURNS)
   drivetrain.turn_for(LEFT, 85, DEGREES)

   # Angle at 95 Degrees: Misses most of the time.
   # Angle at 105 Degrees: Misses.
   # Angle at 85 Degrees: Scores consistently.

   intake_motor.spin_for(REVERSE, spins, TURNS)

   # Score Triball 2
   # Score: 10

wait(time, SECONDS)
   drivetrain.drive_for(REVERSE, 200, MM)
   drivetrain.turn_for(RIGHT, 170, DEGREES)
   drivetrain.drive_for(FORWARD, 1200, MM, wait=False)
   intake_motor.spin_for(FORWARD, spins, TURNS, wait=False)

   # With wait: Bot would move erratically; it was inconsistent and deemed to be a failure.
   # Without wait: Okay.
```

```
wait(time, SECONDS)
   intake_motor.spin_for(REVERSE, spins, TURNS)

   # Move the robot to the other side of the field.
   # Score Triball 3.
   # Score: 15.

wait(time, SECONDS)
   drivetrain.turn_for(RIGHT, 140, DEGREES)
   drivetrain.drive_for(FORWARD, 560, MM)
   intake_motor.spin_for(FORWARD, spins, TURNS)
   drivetrain.drive_for(REVERSE, 560, MM)
   drivetrain.turn_for(RIGHT, 190, DEGREES)
   intake_motor.spin_for(REVERSE, 3, TURNS)

   # Sometimes, the triTriball fails to go into the goal- needs to be fixed.
   # Setting the spin variable to 2 worked fine.
   # Score Triball 4
   # Score: 20

wait(time, SECONDS)
   drivetrain.turn_for(LEFT, 55, DEGREES)
   drivetrain.drive_for(FORWARD, 500, MM)
   drivetrain.turn_for(LEFT, 90, DEGREES)
   drivetrain.drive_for(FORWARD, 350, MM)
   intake_motor.spin_for(FORWARD, spins, TURNS)
   drivetrain.turn_for(RIGHT, 180, DEGREES)
   drivetrain.drive_for(FORWARD, 350, MM)
   intake_motor.spin_for(REVERSE, spins, TURNS)
```

```
 # Score Triball 5
   # Score: 25

 drivetrain.turn_for(LEFT, 180, DEGREES)
   drivetrain.drive_for(FORWARD, 750, MM)
   intake_motor.spin_for(FORWARD, spins, TURNS)
   drivetrain.turn_for(RIGHT, 180, DEGREES)
   drivetrain.drive_for(FORWARD, 750, MM)
   intake_motor.spin_for(REVERSE, spins, TURNS)

   # Score Triball 6
   # Score: 30

drivetrain.turn_for(LEFT, 90, DEGREES)
   drivetrain.drive_for(FORWARD, 550, MM)
   drivetrain.turn_for(LEFT, 90, DEGREES)
   drivetrain.drive_for(FORWARD, 350, MM)
   intake_motor.spin_for(FORWARD, spins, TURNS)
   drivetrain.turn_for(RIGHT, 190, DEGREES)
   drivetrain.drive_for(FORWARD, 350, MM)
   intake_motor.spin_for(REVERSE, spins, TURNS)

   # Score Triball 7
   # Score: 35

 drivetrain.turn_for(LEFT, 100, DEGREES)
   drivetrain.drive_for(FORWARD, 500, MM)
   drivetrain.turn_for(LEFT, 90, DEGREES)
   drivetrain.drive_for(FORWARD, 350, MM)
   intake_motor.spin_for(FORWARD, spins, TURNS)
```

```
 drivetrain.turn_for(LEFT, 150, DEGREES)
   drivetrain.drive_for(FORWARD, 550, MM)
   intake_motor.spin_for(REVERSE, spins, TURNS)

   # Score Triball 8
   # Score: 40

 drivetrain.turn_for(LEFT, 75, DEGREES)
   drivetrain.drive_for(FORWARD, 960, MM)
   intake_motor.spin_for(FORWARD, spins, TURNS)
   drivetrain.drive_for(REVERSE, 950, MM)
   drivetrain.turn_for(RIGHT, 75, DEGREES)
   intake_motor.spin_for(REVERSE, spins, TURNS)

   # Score Triball 9
   # Score: 45

drivetrain.turn_for(LEFT, 75, DEGREES)

   # End of Code
   # Total score: 45


vr_thread(when_started1)
```

03 reflection

This was the underclassmens' first hands-on and independent coding experience on team 675 Alpha. After working with a great deal of practical skills such as variables, control flow, and pathing, the team members were opened to a world of prospective applications. They now feel prepared to program their own bot and auton under the mentorship of the more experienced members. Preparation for the following seasons will not end here, though having the underclassmen participate in such a competition has served as a valuable starting point.

```
print(“675 Alpha VEXCode Virtual Skills Challenge”)

students_names = [Yash Shah, Briana Codrescu, Jonah Leopold]
team_number = "675A"
school_name = "The Gwinnett School of Mathematics, Science, and Technology”
school_location = “Lawrenceville, Georgia”

print(“Thank you.”)
```