



## challenge: RoboCupJunior Rescue

- Design the program for a robot that can find victims located in a RoboCupJunior rescue arena.
- In this challenge, the robot will follow a black line around a “room” (a piece of white foamcore). Located on various points along the line, there will be “victims”—paper-doll style cut-outs in green and silver. Your robot will have to follow the line and find these victims. When it recognizes a victim, it will stop and play a song.
- This is a simulation of real life rescue robots that are being used today to help locate victims in collapsed mines and buildings. You may have read about them in the news!
- Plan out the robot’s behavior:
  - First, write a simple song using the music notes in RoboLab. You can use one of the songs you wrote from the Color Recognition Game if you want. It will be easier if you store the song in a RoboLab **scroll**.
  - Then, design a test program that performs **line-following** and **color recognition** in order to complete the rescue task.
  - Speed is critical here—remember, your robot is trying to locate human victims. Every minute your robot wastes along the line is another minute that the victim suffers before being rescued!
  - However, accuracy is even more important. If your robot fails to recognize a victim, then that person may die. If your robot identifies a false victim (thinks it sees one where there isn’t one), then time may be wasted in locating real victims. In addition, the lives of rescue workers may be put at risk in trying to rescue a victim that isn’t there...
- The basic rules for RoboCupJunior rescue are:
  - The robots are scored first on accuracy.
  - Correctly identified victims of either color are worth 10 points.
  - Incorrectly identified victims mean a loss of 10 points.
  - If there is a tie score in points, then the team with the fastest time breaks the tie and wins.