7 Program for BotSpeak

7.1 Introduction

Some mobile robots have loudspeakers through which they announce their decisions, which helps the people in and around to know what the robot is doing or what it is going to do. Sometimes it may announce the instructions to follow which makes the robot applications more interactive and user friendly. This sample client–server program speaks the text entered by the user, which is achieved with the help of the BotSpeak library available with the robot. The program running at the client takes the text which the user wants the robot to speak. It then sends it to the server program running in parallel on the robot. The server program then sends this text to the speech engine on the robot, which decodes it and finally sends the modulated electric signal to the loud speaker, so the robot is able to speak what you type at the client. The speech engine follows English grammar. So the text typed at the client is spoken by the robot with the help of the server program running on the robot. The communication between the client and the server is through the common socket used by both.

7.2 Flow Chart and Source Code for BotSpeak Program

The client and server flow charts used for the BotSpeak program are illustrated in Figs. 7.1 and 7.2 and their sample programs written in C++ and Java are shown in Listing 7.1 and Listing 7.2 respectively. The BotSpeak program output with program log session is depicted in Fig. 7.3.
Fig. 7.1. Server program’s flow chart

Start

Open the Server socket and wait for client to connect.

Get the String from the Client and send it to the speech engine.

Is Client Connected

Yes

No

End

Fig. 7.2. Client program’s flow chart

Start

Open the client socket and connect to the server.

Get the String from the user and send it to the server.

Is Client Connected

Yes

No

End