CENG 491 PROJECT PROPOSAL

Group Name: e-Limon

Group Members

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Project Title:

Building a Server-Client Architecture to Play Card Games from Mobile Devices

Sponsor: Usta Yazılım

Introduction

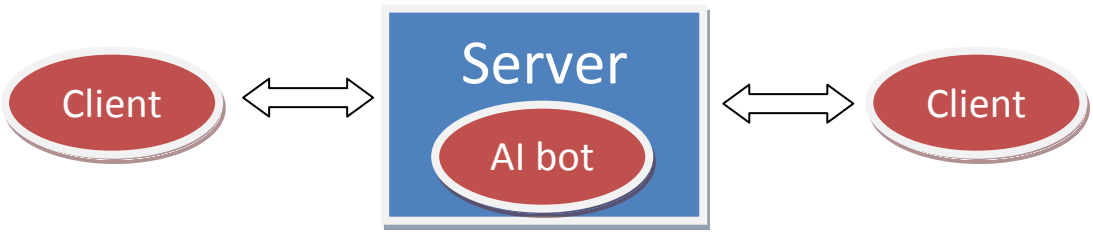
In the present day, mobile devices are commonly used by a vast crowd of people in any kind of environment and platforms. Games are the most popular subclass of mobile applications especially online ones which enable users to be involved in multiplayer gaming rivalry. Idea of online competition is intriguing but merely this reason is not enough to convince us. In addition, we thought that existence of an AI player which will act as a bot player, would make the game more attracting. On the basis of reasons written above, we decided to develop a well-known Turkish card game "blöflü pişti" for mobile devices. The game will enable users to play against the computer AI, and also player will be able to sign in to the system, connect to a server and play with another player in an online multiplayer gaming manner. AI bot can also act as substitute player, that is, if a player disconnects somehow , the AI bot will take the place of this player, so the game will never be interrupted.

Project Description

In our project, game server where clients can connect and be signed in to play "blöflü pişti" with each other or play against the artificial intelligent bot running on the server.

The game server will keep all the information about the users and ongoing games, manage all the communication between clients such as dealing cards, sending moves, etc. The communcation between clients is managed only by the server, there will be no peer-to-peer interaction, that is, it will be handled in standard server-centered client-server manner.

In server side, there will be a AI bot that plays like a client. The AI bot can analyse opponent's moves and come up with an appropriate counter move. With the help of statistical information that server keeps about the user, the AI bot can guess the user's moves such as s/he plays aggressive or defenssive.



Market Search

"Pişti" game is a well known card game in Turkey. In mobile world, there are several game applications in this class. Android will be our development environment, so we searched and scanned Android Market for this game. In the market, there exist only samples of which allows player to play with computer AI, online multiplayer gaming feature does not exist. In our project, the game is to be BLOFLU PISTI in addition online player versus player feature will be implemented. Android market is lacking of this type of game, but iOS appStore has several good samples of a standard Pişti game, which have also online support and AI bots.

Details of the Project

As in mentioned above, our project will be based on client-server architecture paradigm. Clients are users who play the game from their Android based mobile phones.

The project is consists of 4 main components,

1. Server
2. Clients
3. Communication Protocol
4. AI Bot

Server

Game server will handle all the interactions between clients. Server has 4 main tasks:

- Registering new players
- Logging in or out
- Keeping statistics (user points, helping AI bot about how the user plays)
- Controlling the game (dealing cards, sending movement information, open or close table)

Clients

Clients are applications running on Android based mobile phones. Client application will supply people a nice user friendly interface. It will handle all the movements and send those to the server via the web-service communication protocol.

Communication Protocol

The communication between server and clients is done by web-service running on the server. The logging in is managed by basic HTTP authentication, then username and password are checked from the database. Finally, the user is ready to play the game.

In order to make the communication generic, protocol will not be platform dependent. The future expectation of the project is to make the game platform independent so the game can be played from any kind of application such as iphone, pc or tablet etc.

AI bot

The AI bot will behave just like a regular client, it will communicate through the web-service. AI bot can use statistical information that the server supply in order to make "meaningful" movements. Statistical informations help the AI bot to getting know the opponent user. If any user disconnects from the game, the AI bot will play instead so game will never get interrupted.

References

http://market.android.com

http://itunes.apple.com/us/app/pisti-ii/

http://creately.com