Views From the 6

Kazuma Honjo, Isaac Gluck, Morgan Sorbaro

Common Directory

Shared.c

- *validate_message(char* m)*
- Validates strings as proper messages for specific opcodes
- Calls method in function table
- *print_log(char* message, char* file, char* IPport, char* tofrom)*
- Logs the message (and other info) to the specified file
- *Pebble Helper methods*
  - Rewritten funcs not provided by C

Common.c

- *stringHexToDec(char *hex)*
- Return the integer value of the given hex
- Return NULL if error
- *decToStringHex(unsigned int dec)*
- Return the char* of the given unsigned decimal number
- Return 0 if error
- *getIP (int comm_sock, struct sockaddr_in them)*
- Return the IP address
- *getOpCode (char *message)*
- Return the array with opCode in array[0], rest of the line in array[1]

Guide Agent

Data inflow/outflow

- Guide Agent connects to the Server and receives messages
- Guide Agent sends messages to the server when it wants to send a hint or get an update
- Guide Agent prints all messages to a log file
- Data is broken apart and put into structs

Modules and Data Structures

Guideagent.c - Main code that connects to the server

Stores Data in Game Struct
- Agent Struct stores information about the agent
- Krag Struct stores each krag's information
- GameOver struct holds team information from game server
- Hashtable of agents and krags
- Bag of hints and gameOverStructs

Guide Agent Limitations

- Hint has to be in the right order and typed in the correct way
- Can only take the hint input or an update input

Guide Agent Future Work

- Give more commands to type different things
- Improve layout of information

Game Server
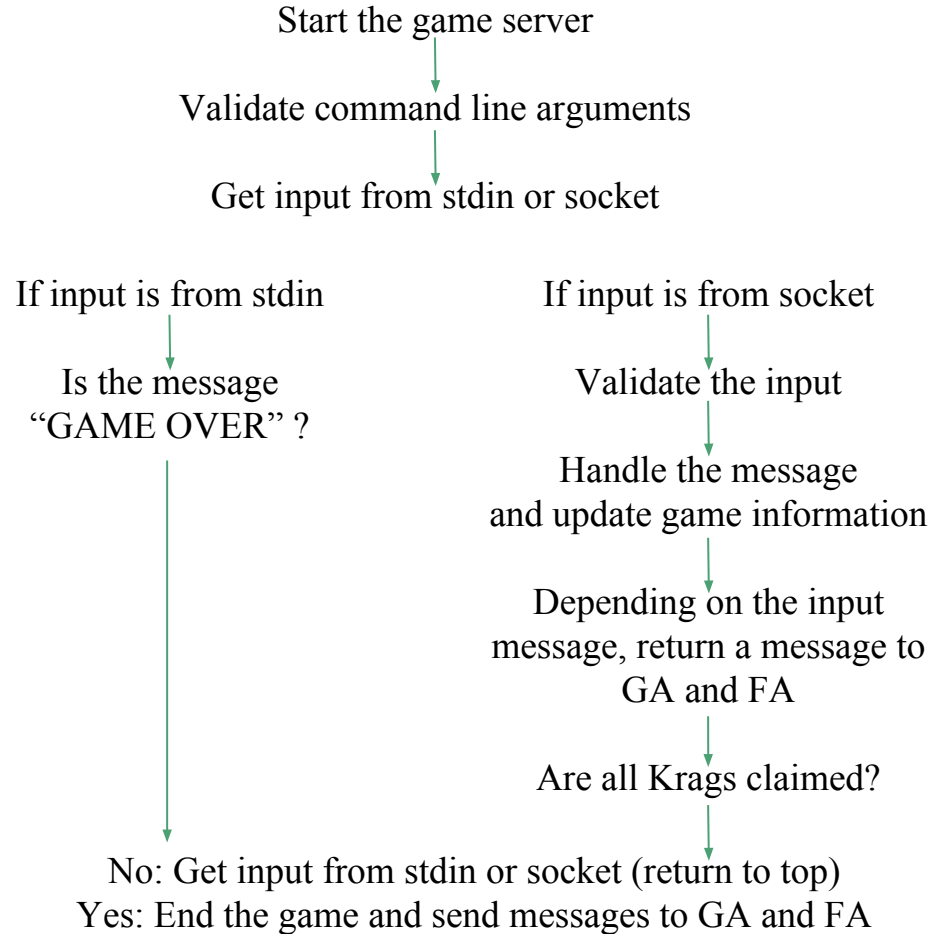
Data inflow/outflow

Input

- Message from GA and FA
- Input from stdin "GAME OVER"

Output

- Message to GA and FA
- All messages sent and received will be saved in gameserver.log

Modules / Game flow

- Main
- gs_struct
- gs_message_handler
- gs_response_handler

Start the game server

↓

Validate command line arguments

↓

Get input from stdin or socket

If input is from stdin   If input is from socket

Is the message   Validate the input
"GAME OVER" ?

↓

Handle the message
and update game information

↓

Depending on the input
message, return a message to
GA and FA

↓

Are all Krags claimed?

No: Get input from stdin or socket (return to top)
Yes: End the game and send messages to GA and FA

Testing

Using client

Run ./gameserver on flume

Run ./chatclient2 and use "./input" as input

Chat client will act as Guide Agent and Field Agent and throws messages to GS

Inputs: Listed in game_server/input

Other Testing

When there are no GA in the team but all krags are claimed

GAME OVER entered in stdin

Krag File

latitude=43.706552|longitude=-72.287418|kragId=86DA|clue=It has a million stories, but cannot tell them.

latitude=43.706550|longitude=-72.287419|kragId=45DA|clue=two.

latitude=43.706557|longitude=-72.287414|kragId=82D3|clue=three.

latitude=43.706554|longitude=-72.287415|kragId=89BA|clue=four.

latitude=43.706553|longitude=-72.287420|kragId=89DB|clue=five.

latitude=43.706549|longitude=-72.287415|kragId=02DA|clue=six.

Inputs - Valid cases

#Enter valid codes

#Register FA
opCode=FA_LOCATION|gameId=0|pebbleId=8080477D|team=aqua|player=Alice|latitude=43.706552|longitude=-72.287418|statusReq=1
opCode=FA_LOCATION|gameId=0|pebbleId=80804774|team=aqua|player=Charlie|latitude=43.736552|longitude=-72.257418|statusReq=1
opCode=FA_LOCATION|gameId=0|pebbleId=808047DD|team=views6|player=Emily|latitude=43.82739|longitude=-72.33345|statusReq=1

#Register GA
opCode=GA_STATUS|gameId=0|guideId=0707|team=aqua|player=Bob|statusReq=1
opCode=GA_STATUS|gameId=0|guideId=0897|team=views6|player=David|statusReq=1

#Claim from Alice
opCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=43.706552|longitude=-72.287418|kragId=89DB
opCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=43.706552|longitude=-72.287418|kragId=02da
opCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=43.706552|longitude=-72.287418|kragId=89BA
opCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=43.706552|longitude=-72.287418|kragId=82D3
opCode=FA_CLAIM|gameId=FEED|pebbleId=808047DD|team=views6|player=Emily|latitude=43.706552|longitude=-72.287418|kragId=82D3
opCode=FA_CLAIM|gameId=FEED|pebbleId=808047DD|team=views6|player=Emily|latitude=43.706552|longitude=-72.287418|kragId=89BA
opCode=FA_CLAIM|gameId=FEED|pebbleId=808047DD|team=views6|player=Emily|latitude=43.706552|longitude=-72.287418|kragId=02da
opCode=FA_CLAIM|gameId=FEED|pebbleId=808047DD|team=views6|player=Emily|latitude=43.706552|longitude=-72.287418|kragId=89DB

Inputs - Valid cases

#Write in Log
opCode=FA_LOG|pebbleId=8080477D|text=displayed hint "go west"
opCode=FA_LOG|pebbleId=808047DD|text=hahaha almost done

#Update FA
opCode=FA_LOCATION|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=43.706552|longitude=-72.287418|statusReq=1
opCode=FA_LOCATION|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=43.706552|longitude=-72.287418|statusReq=0
opCode=FA_LOCATION|gameId=FEED|pebbleId=80804774|team=aqua|player=Charlie|latitude=43.736552|longitude=-72.257418|statusReq=1

#Update GA
opCode=GA_STATUS|gameId=FEED|guideId=0707|team=aqua|player=Bob|statusReq=1

#Hint
opCode=GA_HINT|gameId=FEED|guideId=0707|team=aqua|player=Bob|pebbleId=8080477D|hint=Alice, look inside the cafe!
opCode=GA_HINT|gameId=FEED|guideId=0707|team=aqua|player=Bob|pebbleId=*|hint=Everyone, look inside the cafe!

Inputs - Invalid cases

```
#Error cases
#Duplicate player
opCode=FA_LOCATION|gameId=0|pebbleId=8080477D|team=alpha|player=Alice|latitude=43.706552|longitude=-72.287418|statusReq=1

#Update error
opCode=FA_LOCATION|gameId=0|pebbleId=8080477D|team=aqua|player=Alice|latitude=43.706552|longitude=-72.287418|statusReq=1
opCode=FA_LOCATION|gameId=0|pebbleId=8080477D|team=views|player=Alice|latitude=43.706552|longitude=-72.287418|statusReq=1
opCode=FA_LOCATION|gameId=0|pebbleId=80804|team=aqua|player=Alice|latitude=43.706552|longitude=-72.287418|statusReq=1
opCode=FA_LOCATION|gameId=0|pebbleId=8080477D|team=aqua|player=David|latitude=43.706552|longitude=-72.287418|statusReq=1

#Wrong Hint
opCode=GA_HINT|gameId=FEED|guideId=0897|team=views6|player=Kazuma|pebbleId=12345678|hint=It's working!
opCode=GA_HINT|gameId=feed|guideId=0897|team=views6|player=Kazuma|pebbleId=12345678|hint=It's working!

#Wrong GA added
opCode=GA_STATUS|gameId=0|guideId=0897|team=aqua|player=David|statusReq=1

#Duplicate Claim
opCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=43.706552|longitude=-72.287418|kragId=89DB
```

Inputs - Invalid cases

#Claim Error
opCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=30.706552|longitude=-50.287418|kragId=45DA
opCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=30.706552|longitude=-50.287418|kragId=8927
opCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=30.706552|longitude=-50.287418|kragId=45DA98347

#Error opCode
opCode=FA_CL|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=30.706552|longitude=-50.287418|kragId=45DA

#Error message (missing parts, error field)
|kragId=89DB
opCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=43.706552|longitude=-72.287418
pCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=AlicepCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice
pCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=43.706552|longitude=-72.287418|kragId=89DB
opCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|kragId=89DB
opCode=FA_LOCATION|gameId=FEED|pebbleId=80804774|team=aqua|player=Charlie|latitude=43.736552|longitude=-72.257418
opCode=FA_LOCATION|gameId=FEED|pebbleId=80804774|team=aqua|player=Charlie|latitude=43.736552|longitude=-190|statusReq=1
opCode=FA_LOCATION|gameId=FEED|pebbleId=80804774|team=aqua|player=Charlie|latitude=43.736552|longitude=-72.257418|statusReq=20
opCode=FA_LOCATION|gameId=89qy9yhha9|pebbleId=80804774|team=aqua|player=Charlie|latitude=43.736552|longitude=-72.257418|statusReq=20
opCode=GA_HINT|gameId=FEED|guideId=0707|team=aqua|player=Bob|pebbleId=8080477D
opCode=GA_HINT|gameId=FEED|guideId=0707|team=aqua|player=Charlie|pebbleId=8080477D|hint=Alice, look inside the cafe!

#Claim all krags and end game
opCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=43.706552|longitude=-72.287418|kragId=45DA
opCode=FA_CLAIM|gameId=FEED|pebbleId=8080477D|team=aqua|player=Alice|latitude=43.706552|longitude=-72.287418|kragId=86DA
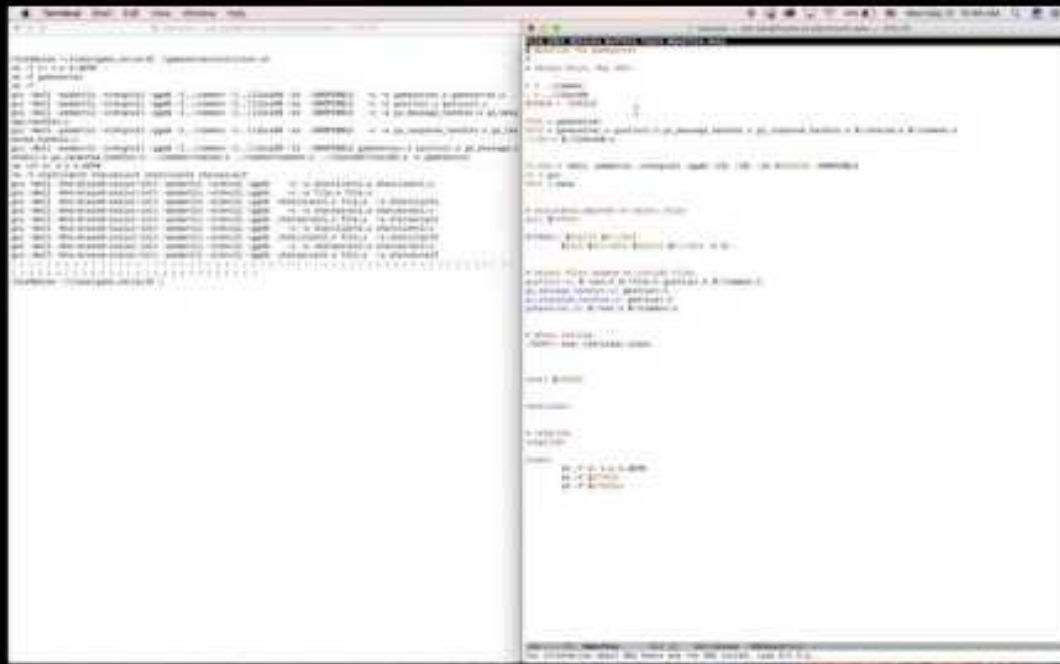
Limitation

- GameID, GuideID, or PebbleID cannot be 0 (except the GameID at the start)
- When the game is running, badly formatted messages are ignored
  - No message like:
    - Id=8080477D|team=aqua|player=Alice|latitude=43.706
    - =feed|gui
  - The game will continue with any wrong inputs
- Hints cannot contain "=" or "|" - they won't be validated if the do

Field Agent

Data Inflow/Outflow

- The game loads and you are given a choice of names.
- When you choose a name, an FA_LOCATION with gameId 0 is sent to the GS
- You are directed to a main window that displays constantly updating game stats and allows you to see hints and input krags
- The user can input a krag by entering that window, which sends an FA_CLAIM
- The user can see hints by entering that window and clicking on hints to expand
- As the pebble is event driven, when a message is received by the GS it's handled; either ignored, data is updated, or a new screen is shown

Modules

- field_agent_data.c - defines the game status struct and creates it as a global
- field_agent.c - holds the main app logic, sets up inboxes and timers, cleans up
- location.c - holds the logic for parsing location messages received and defines the location struct
- message_handler.c - when messages are received they are passed to the message handler which validates (using shared.c) and handles them
- Windows
  - choose_name.c, main_menu, hints_window, pin_window, message_dialog

Limitations

- For many received errors messages there isn't a screen that lets the user know what's happening, they are mostly ignored
- I had a lot of trouble connecting my watch and phone, so I mostly used the emulator
- There is a little lag for messages to get sent or handled

Video
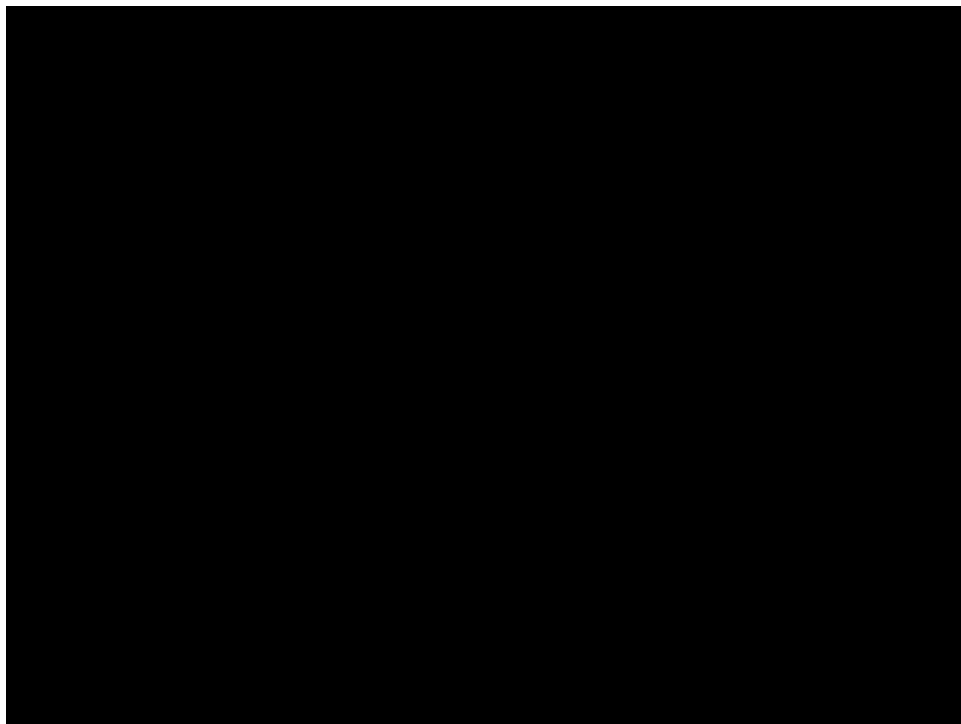
Thanks for a great term!

-Team Views From the 6