CSE 3311 - Team 3 - 20 Questions

Requirements

20-Question Requirements-

20Q should allow the user to **create an email and password for login using the firebase authentication,**

20Q should allow the user to **login using existing login credentials**.

Upon successful login, 20Q should **take the user to the Home Screen of recent scores** where the user should be able to **share their most recent score.**

20Q should prompt the user to **think of a mystery item** upon clicking the **"Play button"**

20Q should allow the user to **answer 20 sequentially asked questions** by tapping "yes", "not sure", or "no".

20Q should **present its guess to the user** using a basic binary tree search.

20Q should allow the user to **indicate if its guess was correct or not**

20Q should allow the user to **end the game or play additional rounds if it fails to guess in the first round.**

20Q should allow the user to **terminate the game as a winner and type the name of their mystery item to record**.
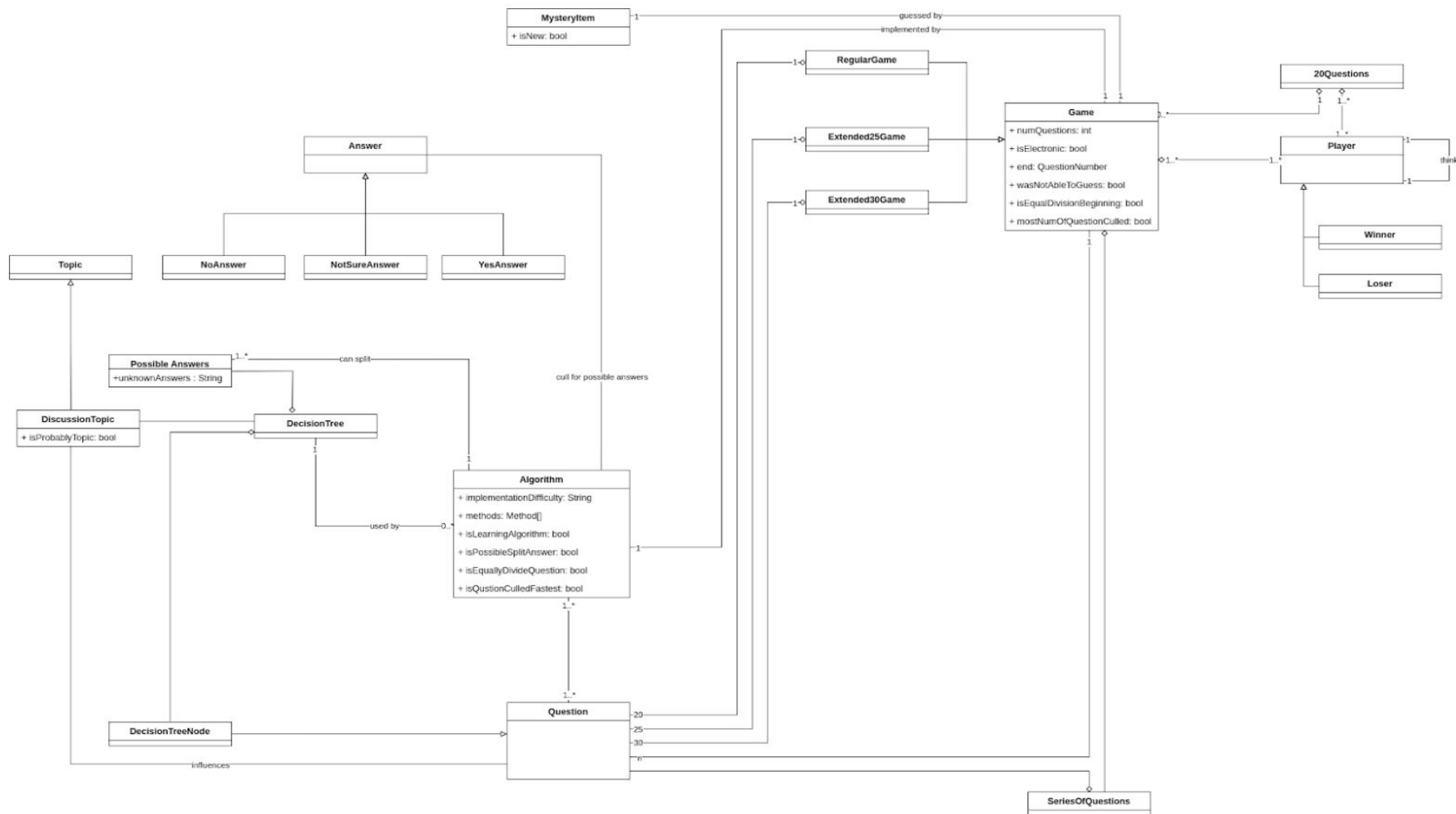
Analysis

R6

Verb-Noun Phrase	Is it a business Process?	Does it begin with an actor?	Does it end with an actor?	Does it accomplish a business task for the actor?	Is it a use case?	Actor	Subsystem
give the user	Y	N	Y	Y	N	N/A	20Q
ask the user	Y	N	Y	Y	N	N/A	20Q
display a questionnaire	Y	N	Y	Y	N	N/A	20Q
stack the elements of the questionnaire	N	N	Y	Y	N	N/A	20Q
scroll through the questionnaire	Y	Y	Y	Y	Y	User	20Q
present yes and no buttons	Y	N	Y	Y	N	N/A	20Q
answer the current question	Y	Y	Y	Y	Y	User	20Q
display the number of rounds elapsed	Y	N	Y	Y	N	N/A	20Q

UC12: Scroll through questionnaire

Actor: User	System: 20Q
	0. The user is inside the Questionnaire Activity
1. TUCBW: The user tries to scroll up or down	1. The system registers the gesture
3. TUCEW: The user scrolls up or down to view the entire Q&A history of the game.	

UC13: Answer current question
TUCBW: The user selects an ans
TUCEW: The user's answer is dis

UC13: Answer current question

Actor: User	
1. TUCBW: The user selects an answer.	
3. TUCEW: The user's answer is displayed	

UC14: Play 5 additional rounds
TUCBW: The user chooses to ext
TUCEW: The user plays up to 5 a

UC14: Play 5 additional rounds

Actor: User	
1. TUCBW: The user chooses to extend th	

UC15: Indicate if app's guess was correct or incorrect
TUCBW: The user selects yes or no.
TUCEW: The game ends and the user sees the overall score.

UC15: Indicate if app's guess was correct or incorrect

Actor: User	System: 20Q
	0. The user is presented with "were you thinking of …?" and a picture of the guess.
1. TUCBW: The user selects yes or no.	2. The algorithm records the ultimate state of the game.
3. TUCEW: The game ends and the user sees the overall score.	

UC16: type name of mystery item
TUCBW: The user types the name of their mystery item.
TUCEW: The user sees a picture of the name that they typed in.UC18: type the name of their mystery item

UC16: type name of mystery item

Actor: User	System: 20Q
	0. The user ends the game and that the algorithm was incorrect.
1. TUCBW: The user types the name of their mystery item.	2. The user's true mystery item is recorded and displayed.
3. TUCEW: The user sees a picture of the name that they typed in.	

20Q

- navigate between home screen and game statistics screen
- sort game statistics
- Share game statistics
- choose Disney character
- choose Marvel character
- Scroll through questionnaire
- pick a topic — <<include>> → choose Disney character
- pick a topic — <<include>> → choose Marvel character
- pick a topic — <<include>> → choose Hollywood Celebrity
- type name of their mystery item
- Play 5 additional rounds
- present user's most recent score and mystery item on home screen
- see full question-answer gameplay
- Get information for game
- Indicate if app's guess was correct or incorrect
- Answer current question
- create account
- store and retrieve user's persistent score information

<<extend>> relationships point to: store and retrieve user's persistent score information

present user's most recent score and mystery item on home screen — <<extend>> → store and retrieve user's persistent score information

user

20Q Database

UC11: Get info

Actor: User

1. The us... button	
3. The us... record... algorit...	

Sce...
1.
2.

Sce...

sd Answer current Question

: user — : 20Q_server — : 20Q_algorithm

1 : submits(button_click,answer)
2 : saves(button_click)
3 : answer = button_click
4 : display(answer)
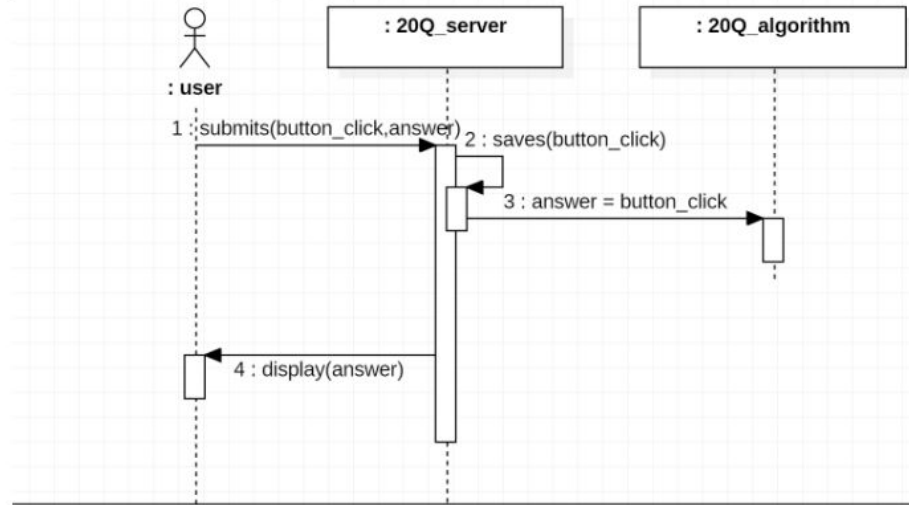
Object Acted Upon

Statistical Records

Statistical Records

User

20Q server

Homescreen

UC8: Play 5 additional rounds

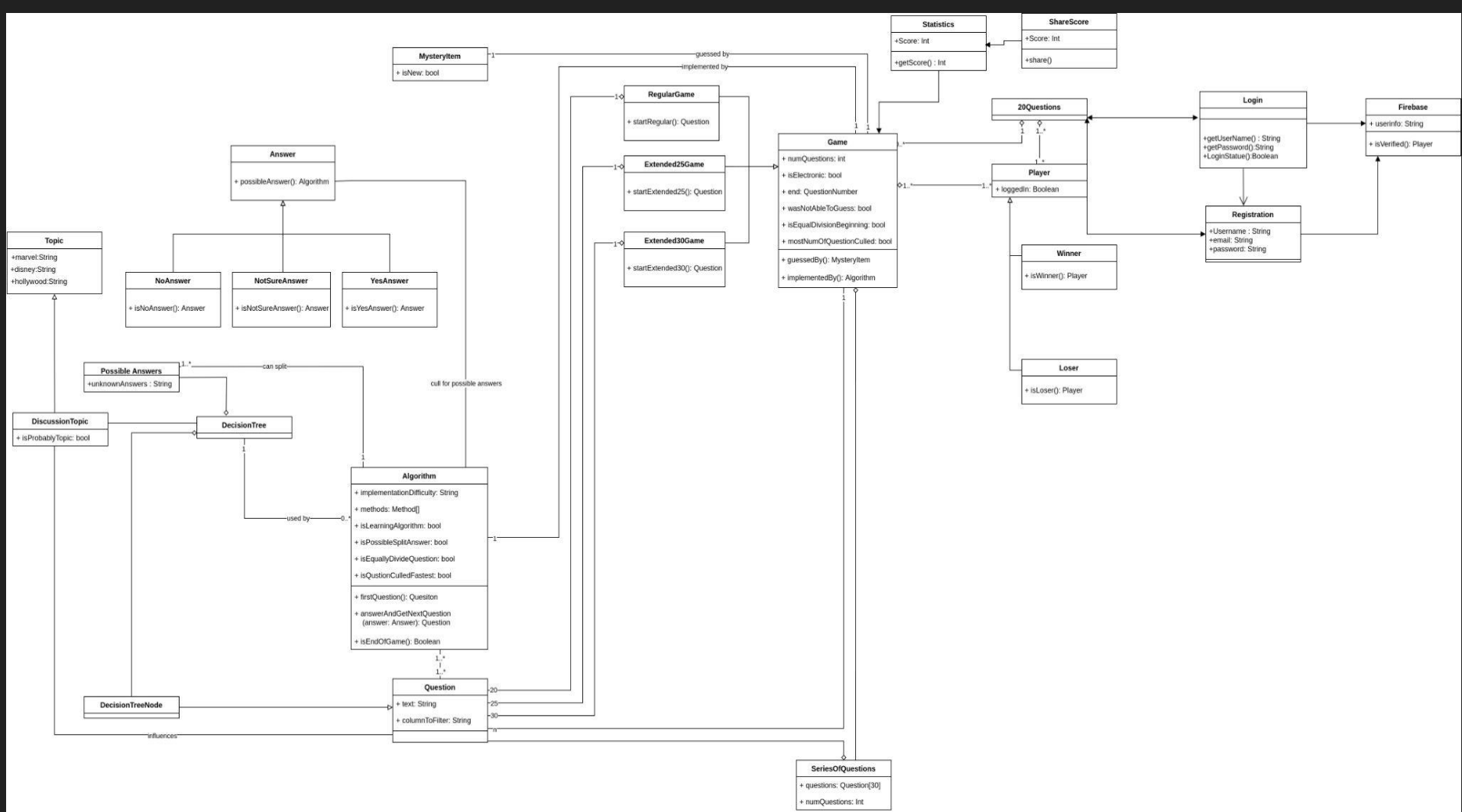| Actor: User	System: 20Q
	0. The user answers the 20th question and the system is still not sure what the user is indicating.
1. TUCBW: The user sends a request to extend the game to 20Q.	2. The game leaves the end of the game sequence.
3. TUCEW: The user plays up to 5 additional questions.	

Statistics
+Score: Int

+getScore() : Int

ShareScore
+Score: Int

+share()

MysteryItem
+ isNew: bool

guessed by
implemented by

Login
+getUserName() : String
+getPassword():String
+LoginStatue():Boolean

Firebase
+ userinfo: String

+ isVerified(): Player

20Questions

RegularGame
+ startRegular(): Question

Extended25Game
+ startExtended25(): Question

Extended30Game
+ startExtended30(): Question

Answer
+ possibleAnswer(): Algorithm

Game
+ numQuestions: int
+ isElectronic: bool
+ end: QuestionNumber
+ wasNotAbleToGuess: bool
+ isEqualDivisionBeginning: bool
+ mostNumOfQuestionCulled: bool
+ guessedBy(): MysteryItem
+ implementedBy(): Algorithm

Player
+ loggedIn: Boolean

Registration
+Username : String
+email: String
+password: String

Winner
+ isWinner(): Player

Loser
+ isLoser(): Player

Topic
+marvel:String
+disney:String
+hollywood:String

NoAnswer
+ isNoAnswer(): Answer

NotSureAnswer
+ isNotSureAnswer(): Answer

YesAnswer
+ isYesAnswer(): Answer

Possible Answers
+unknownAnswers : String

can split

DiscussionTopic
+ isProbablyTopic: bool

DecisionTree

cull for possible answers

Algorithm
+ implementationDifficulty: String
+ methods: Method[]
+ isLearningAlgorithm: bool
+ isPossibleSplitAnswer: bool
+ isEquallyDivideQuestion: bool
+ isQustionCulledFastest: bool

+ firstQuestion(): Quesiton
+ answerAndGetNextQuestion
  (answer: Answer): Question
+ isEndOfGame(): Boolean

used by

DecisionTreeNode

influences

Question
+ text: String
+ columnToFilter: String

SeriesOfQuestions
+ questions: Question[30]
+ numQuestions: Int

Design

```kotlin
fun answerCurrentQuestion(answer: Answer) {
    /*
    Adjusts algorithm state based on answer supplied.
    This step should only be used for yes/maybe/no questions

    Filters all items in dataset
    Assign potentialAnswers
    If many potentialAnswers is many:
        Assign next currentQuestion, property, and filter pool of properties
     */

    // early exit for the do almost nothing case
    if (answer == Answer.NOTSURE) {
        // update question
        updateCurrentProperty()
        updateCurrentQuestionFromProperty()
        return
    }

    if (potentialAnswers == AnswerState.ManyAnswers) {
        // filter dataset property names to only include ones that are distinct
        dataset.usablePropertyNames.remove(currentProperty)
        dataset.usablePropertyNames = dataset.usablePropertyNames.filter { pname: String ->
            dataset.allItems.all { it: SingleItem
                it.propertyValues[dataset.propertyNames.indexOf(pname)] == dataset.allItems.first().propertyValue
            }
        }.toMutableList()

        // update question
    potentialAnswers = when(dataset.allItems.size) {
        0 -> AnswerState.NoAnswer
        1 -> AnswerState.OneAnswer
        else -> AnswerState.ManyAnswers
```

```kotlin
@Entity(tableName = "user")
data class User(
    @PrimaryKey val uid: Int, // uid = User ID
    @ColumnInfo(name = "username") val username: String,
    @ColumnInfo(name = "password") val password: String
)

// game data: only saved after the game is completed
// partial games are not saved
@Entity(tableName = "savedgame")
data class SavedGame(
    @PrimaryKey val gid: Int, // gid = game ID
    @ColumnInfo(name = "time_completed_seconds") val time_completed_seconds: Int, // raw seconds s
    @ColumnInfo(name = "time_completed_formatted") val time_completed_formatted: String, // Gregor
    @ColumnInfo(name = "questions_and_answers") val questions_and_answers: String, // comma-separa
    @ColumnInfo(name = "did_win") val did_win: Boolean,
    @ColumnInfo(name = "num_questions") val num_questions: Int,
    @ColumnInfo(name = "username") val username: String
)
```

app | Google Pixel 3 | Git:

Commit to main

HomeActivity.kt | SavedGame.kt | SavedGameRecyclerAdapter.java | activity_home.xml | sample_data.kt | saved_game_row_item.xml

Code | Split | Design

Default Changelist
☐ Unversioned Files 1 file
    ☐ google-services.json ~/AndroidStudioProjects/20Questions3/app

```
 97
                        :androidx.recyclerview.widget.RecyclerView
 99            android:id="@+id/home_savedgames_recyclerview"
100            android:layout_width="match_parent"
101            android:layout_height="150dp"
102            app:layout_constraintTop_toBottomOf="@id/home_top_content"
103            app:layout_constraintBottom_toTopOf="@+id/home_bottom"/>
104        <!--TODO: we should populate the recycler view with the
105                  user's most recent high scores. And the user should
106                  be able to share any one of those high scores -->
107
108        <LinearLayout
109            android:id="@+id/home_bottom"
110            android:layout_width="match_parent"
111            android:layout_height="wrap_content"
112            android:orientation="horizontal"
113            android:gravity="center"
114            app:layout_constraintTop_toBottomOf="@id/home_savedgames_recyclerview"
```

☐ Amend

user and savedgame model 🖉
↳works!!!

Commit | Commit and Push...

androidx.constraintlayout.widget.ConstraintLayout › androidx.recyclerview.widget.RecyclerView

Git: | Log: origin/main | Console

Branch: origin/main | User: All | Date: All | Paths: All

HEAD (Current Branch)
▼ Local
    🏷 main
▼ Remote
    ▼ 📁 origin
        ⌥ arwa
        ⌥ login
        ⌥ main
        ⌥ manish

	modified QuestionnaireActivity	Jacob Valdez	Yesterday 9:27 PM
	Merge pull request #2 from JacobFV/login	Mohammed Alam*	Yesterday 8:36 PM
	deleted the homepage.xml	origin/login Mohammed Alam*	Yesterday 8:33 PM
	deleted the homepage.java	Mohammed Alam*	Yesterday 8:32 PM
	deleted by mistake	Mohammed Alam*	Yesterday 8:31 PM
	removed homepage	Mohammed Alam*	Yesterday 8:25 PM
	Add files via upload	Mohammed Alam*	Yesterday 8:20 PM
	removed MainActivity.java	Jacob Valdez	Yesterday 5:03 PM

Select commit to view changes

Commit details

TODO | Problems | Git | Terminal | Build | App Inspection | Run | Logcat | Profiler

Event Log | Layout Inspector

Pushed 3 commits to origin/main (moments ago)

101:37 | LF | UTF-8 | 4 spaces | main

Unwatch ▾   1   ☆ Star   0   ⑂ Fork   0

main ▾   ⑂ 4 branches   ⬩ 0 tags

Go to file   Add file ▾   🟣   ⬇ Code ▾

About

No description, website, or topics provided.

JacobFV user and savedgame model works!!!   21c56ff   5 minutes ago   ⏱ 44 commits

.idea	user and savedgame model works!!!	5 minutes ago
app	user and savedgame model works!!!	5 minutes ago
gradle/wrapper	Init	2 months ago
.gitignore	Init	2 months ago
LICENSE	Initial commit	
README.md	Update README.md	
build.gradle	data model	
gradle.properties	Init	
gradlew	Init	
gradlew.bat	Init	
settings.gradle	Init	

📖 Readme

⚖ MIT License

Releases

Who has access

PUBLIC REPOSITORY   👁
This repository is public and visible to anyone.

Manage

DIRECT ACCESS   👥
3 have access to this repository. 2 collaborators. 1 invitation.

Manage access   Invite a collaborator

README.md

20Questions

Mohammed Alam, Arwa Jafferji, Jacob Valdez, Manish Phuyal

This is our CSE 3311 - 001 Summer 2021 Semester Project.

TODOs:

- Mohammed Alam: merge login into main branch
- Arwa Jafferji: make all previous games listed in scores activity and lin
- Jacob Valdez: write algorithm and implement in questionairre activity
- Manish Phuyal: push latest commits that you showed Jacob on Frida

☐   Select all   Type ▾

🔍 Find a collaborator...

☐	arwajafferji	Awaiting arwajafferji's response	Pending Invite 📋	🗑
☐	Mohammed Alam	hasib-9200 • Collaborator		🗑
☐	mphuyal1	Collaborator		🗑

=filter%...

Alam, Mohammed Hasibul can you please commit your Android manifest file?

Alam, Mohammed Hasibul do the firebase features rely on credentials that are only stored on your computer?

Alam, Mohammed Hasibul Yesterday 9:50 PM
The firebase feature will work if you activate that on your android studio.

I am still making changes, will update soon.

Yesterday 9:54 PM
> **Alam, Mohammed Hasibul**
> The firebase feature will work if you activate that on your android studio.

What do you mean? It looks like you have to sign in to firebase using your Google account. I do not have your Google account credentials. Can we call?

(I don't think I'd be a good idea to share your Google password anyway)

📞 Call started   Yesterday 9:57 PM

MP **Phuyal, Manish** Yesterday 10:24 PM
Team3.object@gmail.com
ObjectOriented

📞 Call ended 31m 45s   Yesterday 10:29 PM

Today

9:09 AM 👍 1
I've restructured much of the code: we no longer need firebase. Android provides an API that manages saving data for us. I have implemented the database interface in our project. See the code for details

It's on the main branch. There are no errors

Jafferji, Arwa, 🟡 **Phuyal, Manish** ✏️   Chat   Files   +

...va   Yesterday 4:46 PM 👍 1

Yesterday 4:54 PM
I've merged my Manish's code into the main branch and pushed it to GitHub. It will take me some more time than I was anticipating to finish the questionnaire game. I will be working later this evening and tomorrow. It will be done before the presentation practice at 2:00 tomorrow

...nish Yesterday 4:57 PM
...m

Yesterday 5:49 PM
Alam, Mohammed Hasibul Will you be integrating the login Branch this evening? The reason I ask is, I will be working on the app on all evening after 8 PM so I can integrate the login Branch for you

I have no idea why my voice dictation keyboard capitalizes Branch

...ammed Hasibul Yesterday 6:45 PM
...be done before 8.30pm

...ammed Hasibul Yesterday 8:38 PM
...ed the login branch to the main branch.

...nish Yesterday 9:10 PM
...question guys

so i am in main activity and i have some arraylist holding some values, now i intent to another activity and from that i pass some different value to the main activity and intent back to it, and i am not able to hold the previous values of the array list in the main activity, i could not figure out how to save those values of previous activity, anyone have any idea what should be used

Type a new message

Screen 1 (Home)

Home

20 Questions

Your last score was

MOST RECENT SCORE
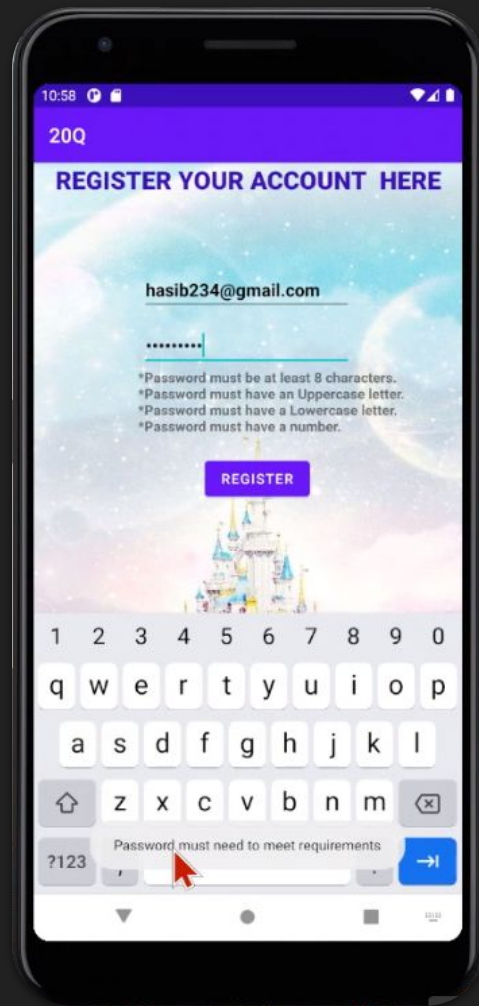
▶ PLAY!   📤 SHARE

All scores:

You won! Aug 9, 2021 10:00am 20Q
Jacob won! Aug 9, 2021 10:05am 20Q
Jacob lost! Aug 9, 2021 11:00am 20Q
Jacob lost! Aug 9, 2021 11:35am 20Q

Copyright © 2021 by (Team Name) ⓘ MORE INFO

Screen 2 (Register)

10:58

20Q

REGISTER YOUR ACCOUNT HERE

hasib234@gmail.com

••••••••

*Password must be at least 8 characters.
*Password must have an Uppercase letter.
*Password must have a Lowercase letter.
*Password must have a number.

REGISTER

1 2 3 4 5 6 7 8 9 0
q w e r t y u i o p
a s d f g h j k l
z x c v b n m ⌫

?123

Password must need to meet requirements

Screen 3 (App info)

← App info   🔍 ❓

20 Questions

↗ Open   🗑 Uninstall   ⚠ Force stop

Notifications
~0 notifications per week

Permissions
No permissions requested

Storage & cache
16.58 MB used in internal storage

Mobile data & Wi-Fi
No data used

Advanced
Screen time, Battery, Open by default

Assumptions and Constraints

Assumptions and Constraints

- Character has to exist/be well known
- Assume character is in the database
- Assume user is not changing their selected character
- Assumed that game works with only yes or no
- Assume that it will be a fairly quick game
- Only have one dataset

Future Expansion

Future Expansion

- Does not require much maintenance
- Update firmware

GAME OVER

Thank you for playing