# CIS 285 TERM PROJECT

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# Abstract:

E-guard is an essential, useful software that is responsible for monitoring the kid's activities as searching for bad stuff, accessing unhealthy websites, chatting using unhealthy words… E-guard keeps track of the kid' activities and recognizes if it's healthy or not according to a 3rd party server that publishes and updates unhealthy websites. Once e-guard identify suspicious activity it blocks them and notifies their parents with the activity their kid was doing with a screenshot of it.

# Requirements:

Functional requirements:

1- The E-Guard shall
allow parents to check web activity, keystroke, chat, email, IM, and launched application.

1.1 Give parents access to their kid's web activity.

1.2 Give parents access to their kid's keystroke.

1.3 Give parents access to their kid's chat.

1.4 Give parents access to their kid's IM.

1.5 Give parents access to their kid's launched apps.

2-The E-Guard shall keep a local DB of unhealthy websites and synchronize

the DB with the remote server daily. (Note: Remote server is maintained by a 3rd party service vendor who publishes and updates unhealthy websites. It is their responsibility to create and maintain the remote server. Your job is to copy its DB to your local drive daily)

2.1 check if there are any updates in the server daily.

2.2 update the local database daily.

3-The E-Guard shall block unhealthy websites

3.1 Get the unhealthy websites from the DB

3.2 Block those websites

4-The E-Guard shall remove unhealthy words from search engines (note: it is 3rd party's responsibility to create and maintain common unhealthy keywords)

4.1 Get the unhealthy words from the DB

4.2 remove unhealthy results from search engines.

5-Once suspicious activity is identified, the E-Guard shall take a snapshot of

the screen and notify parents by email and text message. The suspicious

activities include trying to browse unhealthy websites, nasty words appearing

in email/chat/IM or typing blocked keywords in search engines.

5.1 E-guard shall automatically identify all suspicious activities.

5.2 E-guard will take a snapshot of the suspicious activity.

5.3 The e-guard shall automatically notify the parents of the suspicious activities.

5.4 The notification shall specify exactly where the suspicious activity is, in addition to the snapshot.

5.5 the parent can view the snapshot.

6-The E-Guard shall allow parents to configure the setting. The setting includes, blacklist, whitelist, blocked keyword, internet time control, Categories to be blocked (it is 3rd party's responsibility to create and maintain the website categories), etc.

6.1 give parents the ability to configure the settings.

6.2 parents can configure blacklist, whitelist, blocked keyword, internet time control, and blocked categories

7-Only authorized users to have access to the configuration and uninstall.

7.1 create a list of authorized users.

7.2 allow authorized users to access the configuration.

7.3 allow authorized users to uninstall E-guard.

7.4 block any attempt from unauthorized users to access the configuration or uninstall the software

Non-functional diagram: E-guard shall update the data base every 24 hours

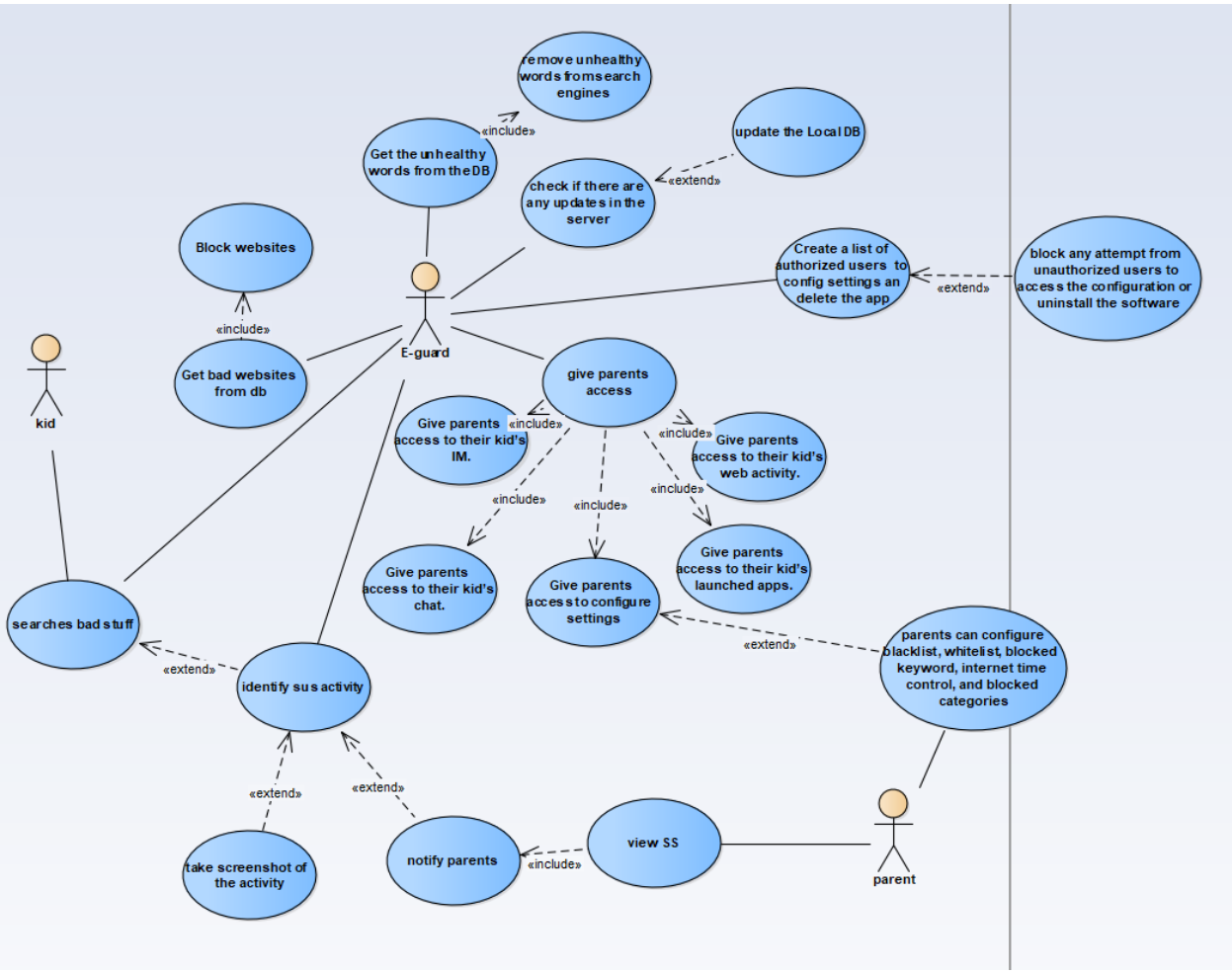
# Use case diagram:

The use case diagram has 3 actors e-guard, kid, and parent.

E-guard is responsible to update the data base, then block any activity by the kid that matches the data in the DB and notifies the parents with the activity where the parents can view this notification.

E-guard also gives access to parents to their kid's activity as well as gives permission to them to configure the settings, e-

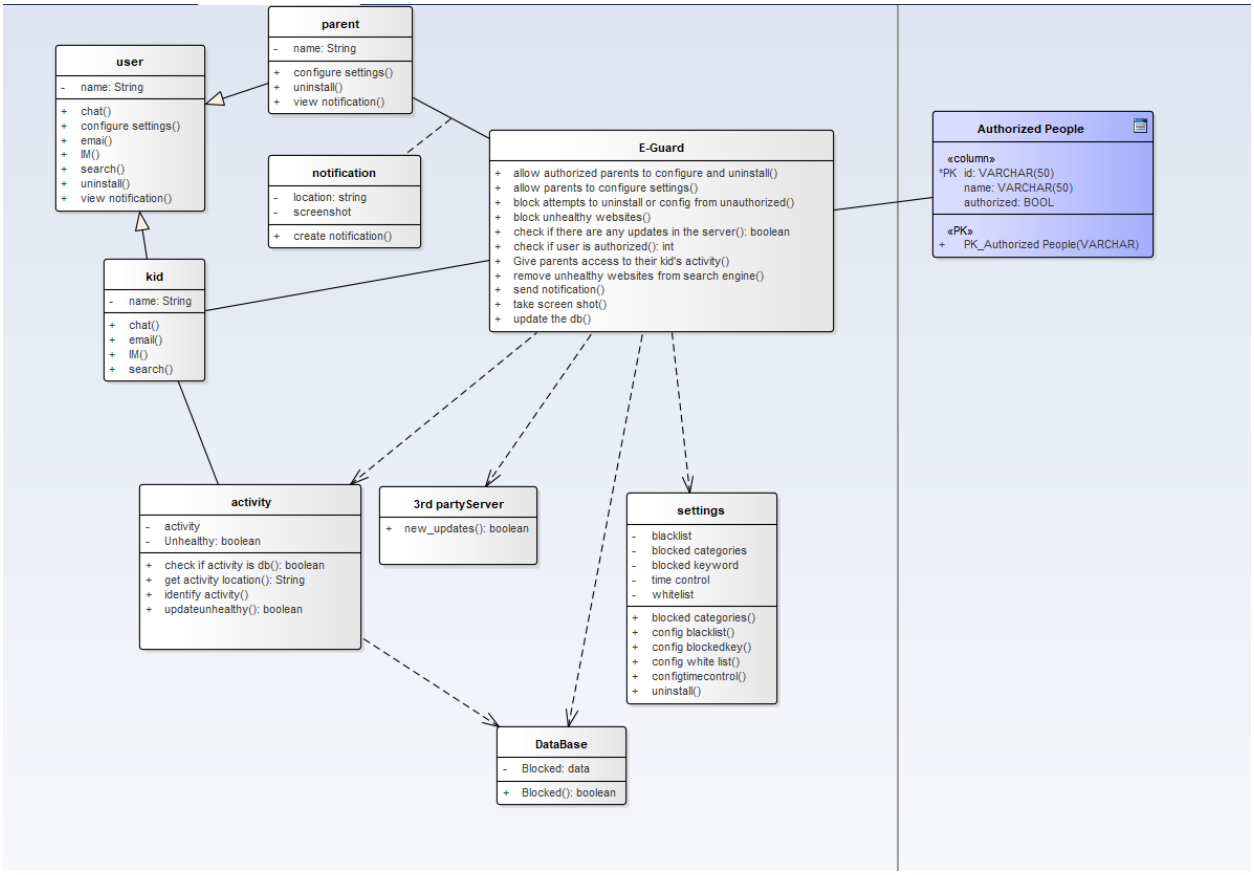
guard creates a list of authorized people to config the settings and uninstall the app, in case any unauthorized user tries to access those settings it blocks him.




# Class diagram:

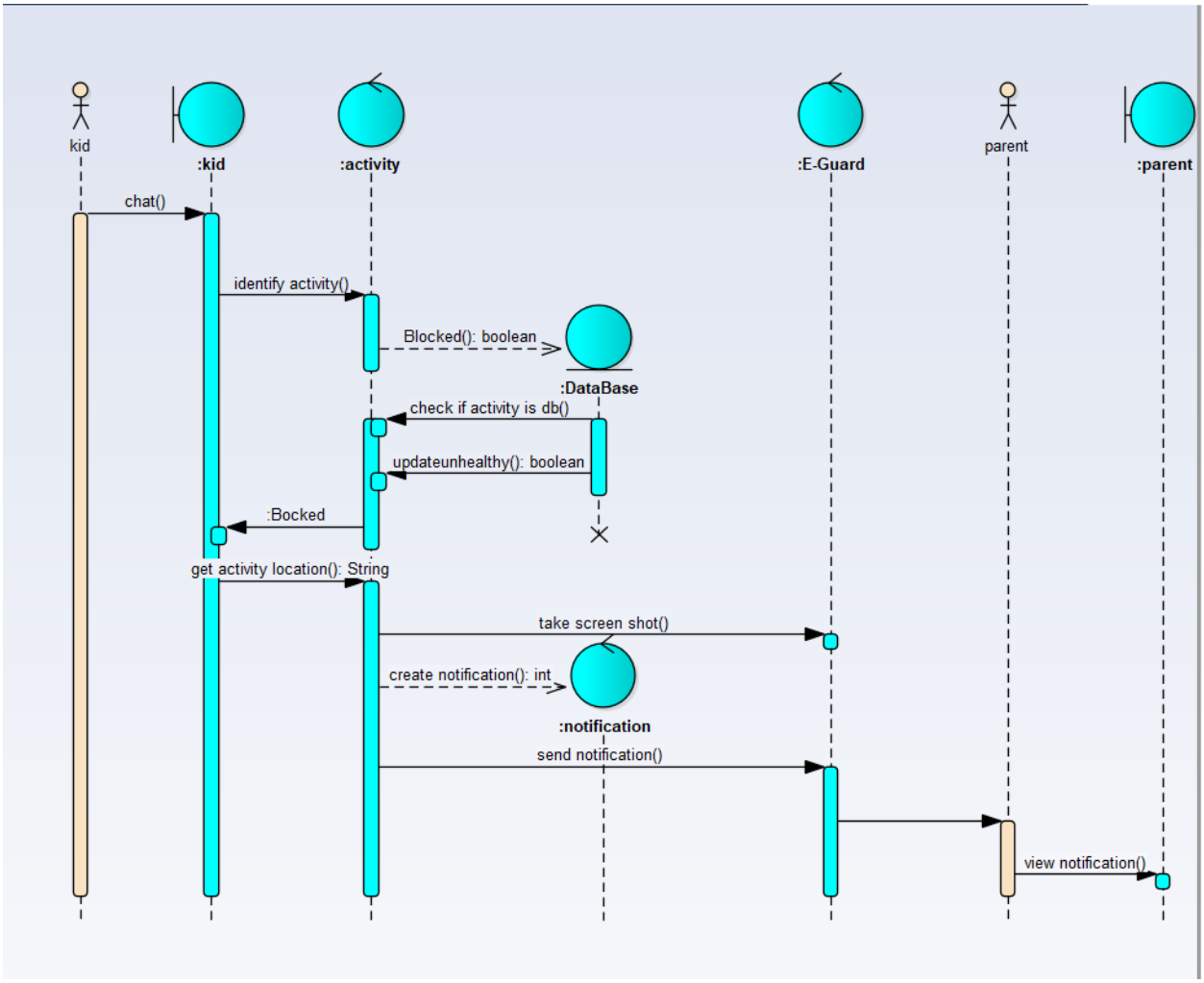
Both parents and kid classes inherit user class, kid can chat-email-im-search, however parent can config settings-uninstall-view notification. Activity class is associated with kid class as the activity comes from the kid's methods, the activity class has method that checks if an activity is suspicious. E-guard depends on the activity class as well as settings class

and the db. We associated with e-guard a table that carries the authorized people.

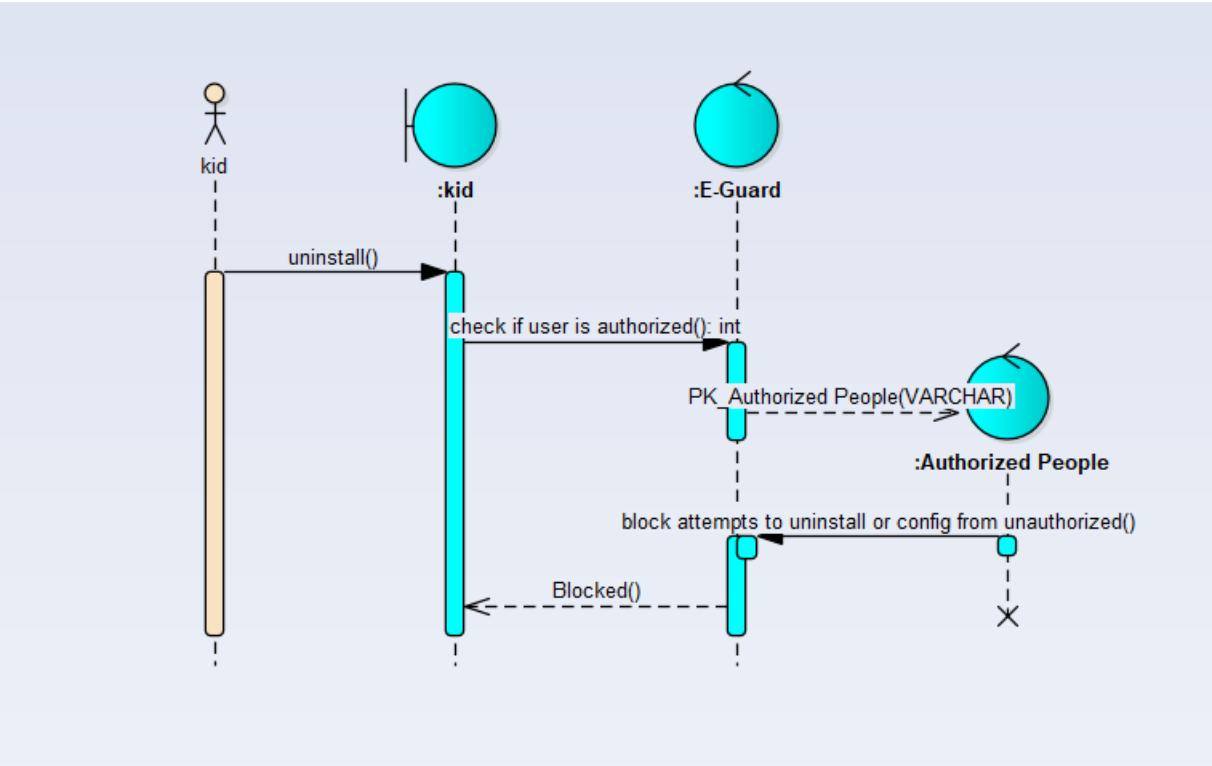



# Sequence diagram:

A kid chats with his friends using unhealthy words the activity class uses its method identify activity to get the activity then it sends it to the data base class that check if the word is in the Db and update the attribute unhealthy to be true then activity class blocks the kid action. After that activity gets the activities' location and sends it to e-guard that takes screenshot, notification class creates notification, then e-guard send it to parents who can view it.


kid
:kid
:activity
:E-Guard
parent
:parent
chat()
identify activity()
Blocked(): boolean
:DataBase
check if activity is db()
updateunhealthy(): boolean
:Bocked
get activity location(): String
take screen shot()
create notification(): int
:notification
send notification()
view notification()

Kid tries to uninstall e-guard, e-guard then checks when the user is authorized or not where e-guard uses authorized people table to see if the user is listed, if not found e-guard blocks the kid's action




# State diagram:

Settings state diagram:

To configure blacklist, config blacklist method is selected after that you can save &close

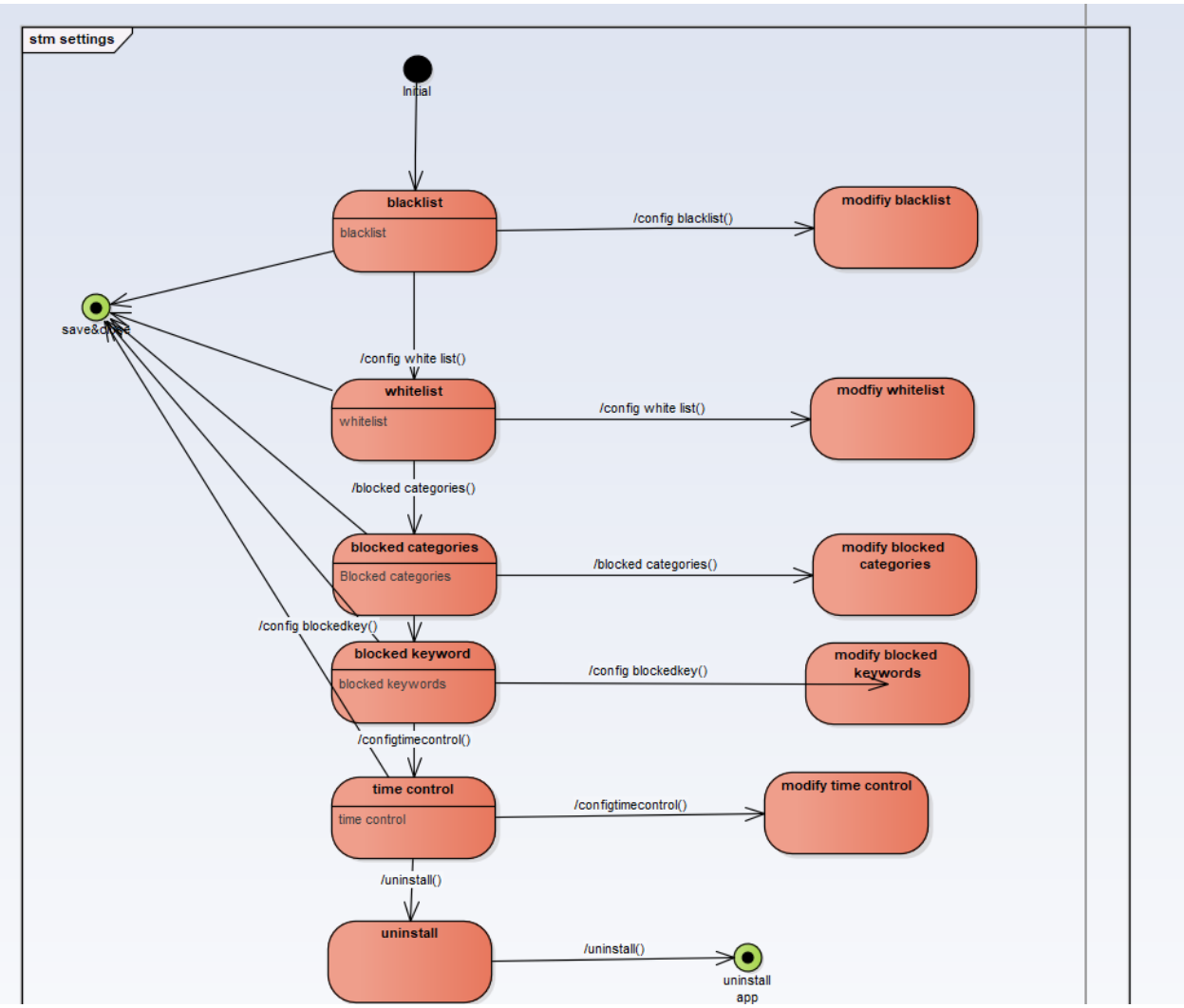
To configure whitelist, config whitelist method is selected after that you can save &close

To configure blockedcategories, config blocked categories method is selected after that you can save &close

To configure blockedkeywords, config blocked keywords method is selected after that you can save &close

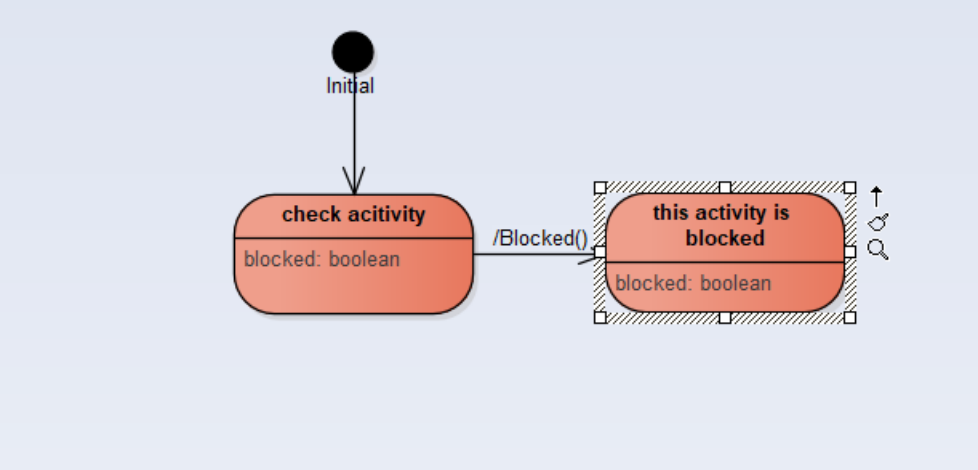
To configure time control, configtimecontrol method is selected after that you can save &close

To uninstall app, uninstall method is selected .



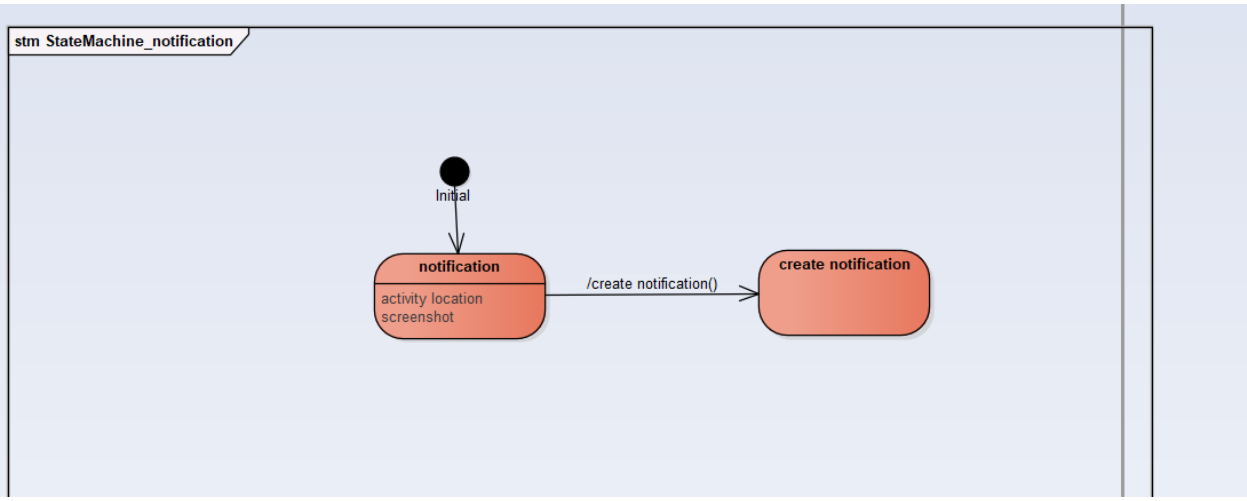
# Activity state diagram:

To check weather activity is blocked or not, Blocked method is selected



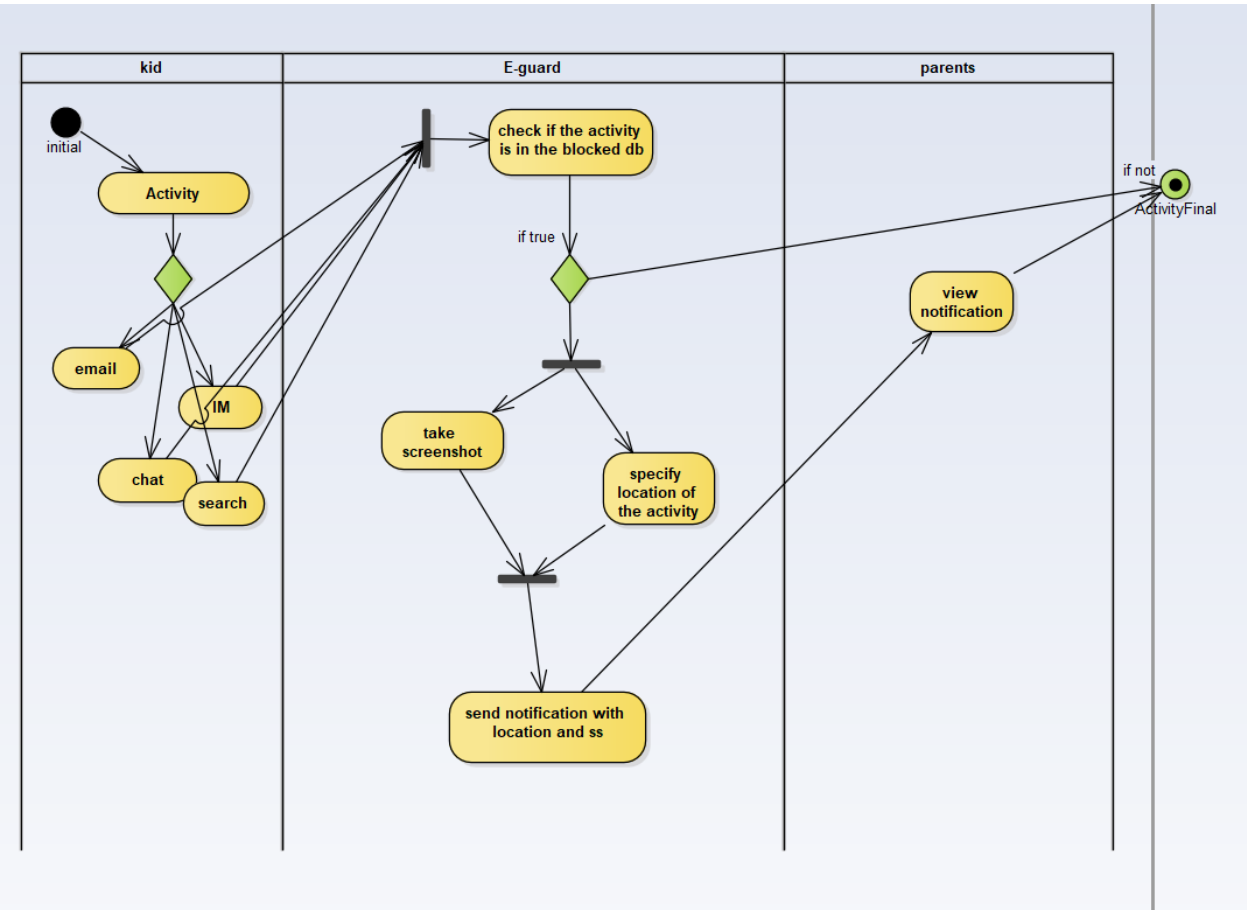

# notification state diagram:

To create a notification, create notification method is selected

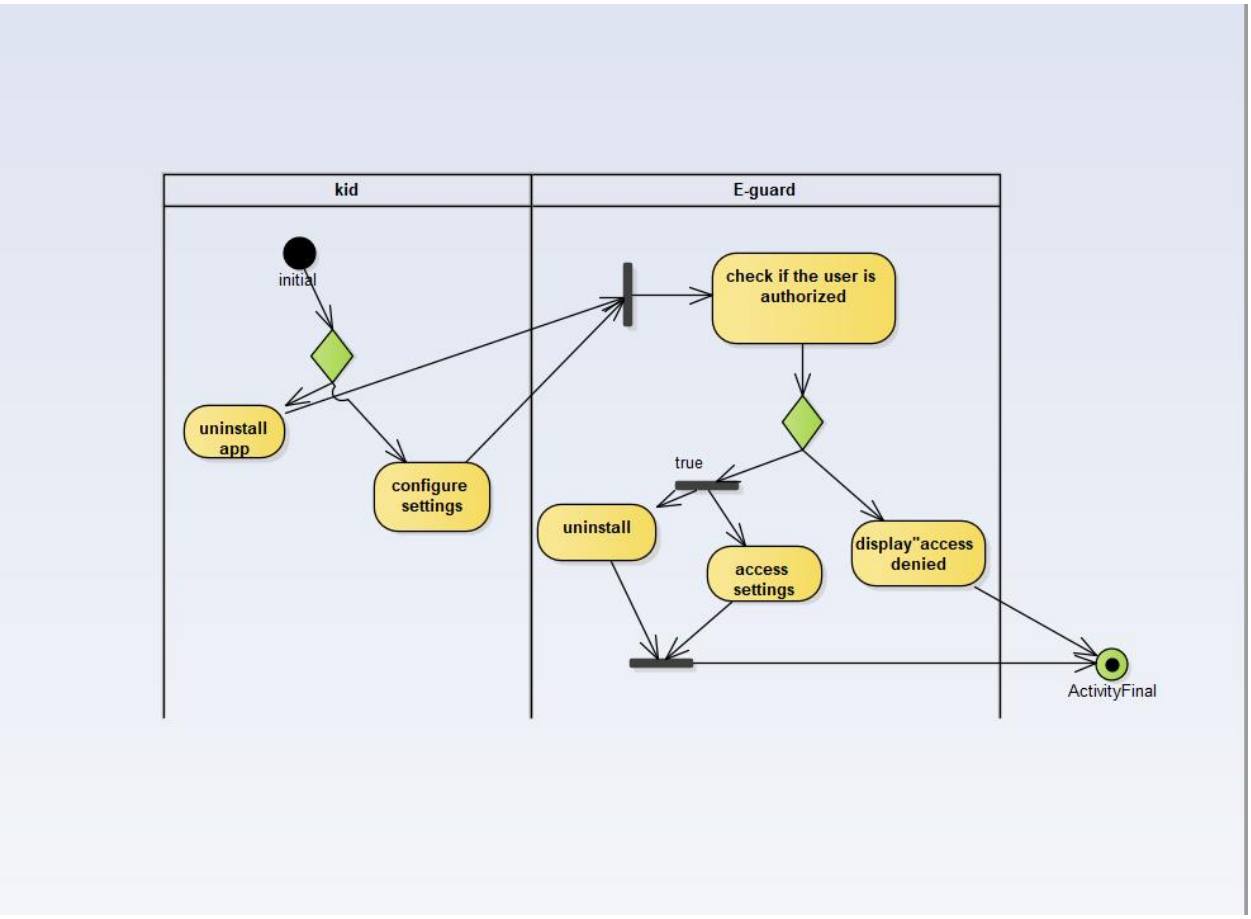


# Activity diagram:

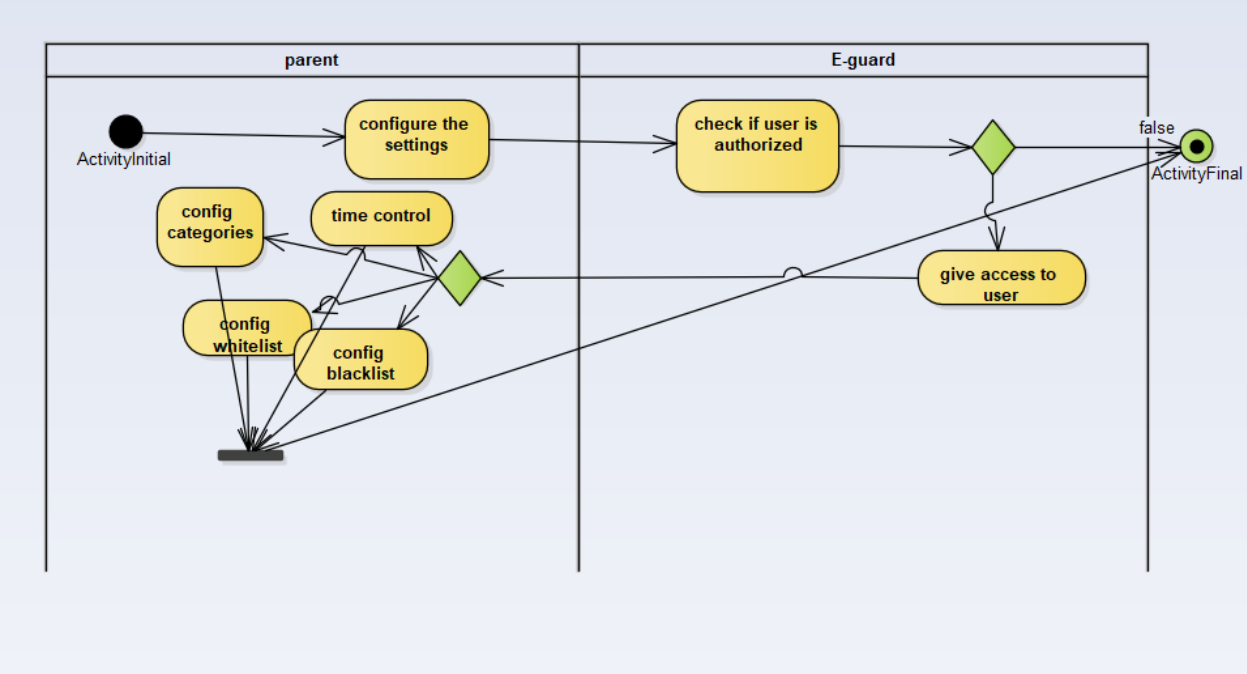
Kid chooses to either email to IM or chat or search whatever he selects e-guard checks if it is in Db of sus activities or not if not the activity is done else, location of activity is specified a e-guard takes a ss and sends it to parents where they can view it



Kid chooses to uninstall or configure settings, in either cases e-guard checks if he is an authorized user if yes, e-guard allows him to continue with action else a message" access denied" is displayed

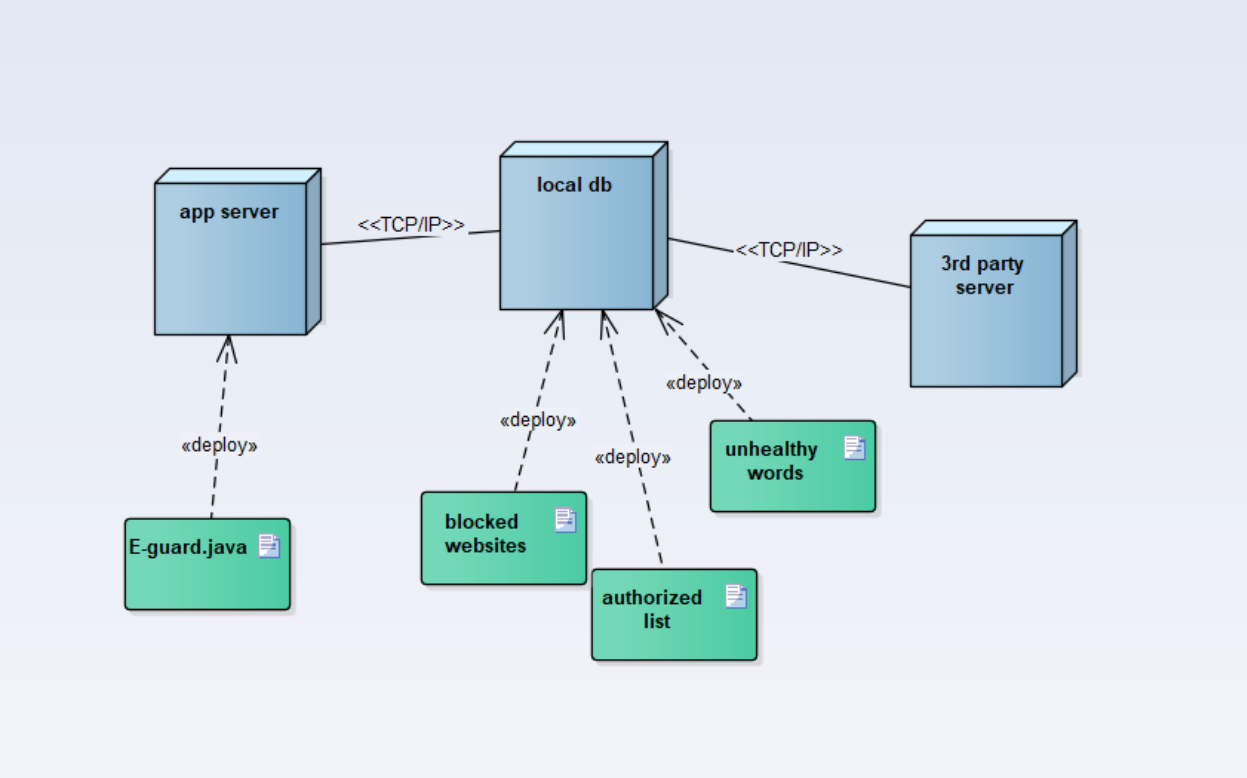


Parent chooses to configure settings, e-guard checks if he is an authorized user if yes, e-guard allows him to continue, parent has the option to config time control, categories, whitelist, blacklist.



# Deployment diagram:

The source code of e-guard is deployed to the app server, blocked websites, authorized list and unhealthy words are stored in the local db, 3rd party server supplies the local db with the unhealthy websites.



# Requirements model:

Requirement model explains the relations between the software's requirements.