**EK327 Final project**

**Documentation Report**

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**About the Game**

Our final project is a physics based game. The fact that the best games in the app market take a minuite to understand but a lifetime to master motivates us to come up with the idea of creating this game. Users can take a small break from work or study and divert their attention to another intersting thing, hence tlit screen mechanis was applies to make the game be interative and absorbing.

To play the game, you tile the phone to roll the call to avoid the holes that are controlled internally and spawn at random locations on the screen. You can choose to play from 3 difficulty levels. The distribution of the holes change every 3 seconds and you are not allow to stay in the same place for more than 3 seconds(you will automatically fail since you are cheating☺). You are able to see the guide page when you play the game for the very first time. There are 3 pages to teach you what to do with this game and you are not going to see them again after your first use. When you fail the game, you press “Restart” to actually restart the game, “Exit” will just lead to the place where you fail. To keep track of your achievement, you can check you histroy scores at “ScoreBoard” on the GameHomePage. There is actually have a bug here, the score board supposes to refresh every time when you fail the game, however, for some reasons, it doesn’t really record you score every time, it fails sometimes.

**Developing the Game**

Game programming is little different from the regular programming in servel ways. For on thing, it is very graphisc intensice. Pictures with png fromat including the green ball, “Don’t d”, “p That”, “Level 1” “New Record” and ect. were imported under the drawable package. Also, the biggest problem and the most important part is defintely how to simulate gracvity, how to keep track of the ball, user history record and the coordinates of the hoels. We don’t worry about the exact physics of gravity here, what concerns us here is that the ball should look under the influence of gravity. Two classes werer created as models: HoleCoordinate, to get the position of the holes we need; UserData, to get the users’ score. And the user data has something to do with the adaptor. The adaptor serves as a build bridge between our AdapterView and the underlying data for that. Since our adaptor fails to capture every single scores, there might be something wrong with these classes.

Another problem is to make sure holes are relatively evently distributed and avoid holes accumulat together in the same place and , to achieve that, the screen was divided by cross into four area, and there are five holes in each area, plus a hole at the centre point of the coordinate. Besides, this is where the ball coming from, and also this hole will move to the ball whenever you stay in the same place. for more than 3 seconds. As we can see, this centre hole is very important that develpers don’t want to remove it even it is annoying. Plus, The ball coming from the place that is a little under that centre hole, that’s why the instructions say use want to tilt the phone a little bit to start the game. This actually make this game easy to fail at the first second if the used don’t realize they should tile the phone, and this is our weakpoint and should be improved if time allows.

To change the number of holes in the code, in “private int holesize = 21”, you can change the size to any number that is the multipe of 4+1, otherwise the function will fail to work