Save High Score

Calculation

For each level in the game there is a high score. The score is calculated by the the number of cookies the player collects along the way and if the player makes it to the finish line an extra time bonus will be received; the faster it takes to complete the level, the higher score the player will acquire.
*Formula used to calculate the score: (40/time)^3.0*1000 + cookies*100.*

cookies - The number of cookies the player has collected.
time - The time which took the player to reach the finish line.
40 - 40 seconds is the average time it takes to reach the finish line at any level.
3.0 - 40 / time will be powered to three in order to create a greater span between the player's times on different rounds.
1000 - The number which the product of the time will then be multiplied by to create a time bonus around 1000 points. (Times faster than 40s will generate a higher point and slower times a lower point than 1000.)
100 - The point for each collected cookie.

Note that if the player does not make it to the finish line the player will only acquire a score based on the number of collected cookies.

Storage

The high scores are stored in a local file on the users SD-card. Every time a new game is created a *Player* class reads from the file containing the high scores and save this in a list named *highScores*. If there are no high scores stored yet the list is initiated with zero at each position, representing the levels, of the list. In short, level 1 has it's high score at position zero and so forth.
With this logic it is essential to initiate all levels with a high score of zero even if the level has not been played. For example, if the player played level three first it will be stored at position zero, thus, being incoherent.

Saving to file

As the application is running and viewed on the screen all new high scores are updated in the *highScores* list in the *Player* class. When the player quits the game using the exit button in the main menu the scores are written to the local file *io.txt* on the SD-card. On the other hand, If the player exist the application using the phones home button, the game is not actually terminated, just paused and the high scores will remain in the *highScores* list in the *Player* class. But when one chose terminates the application using the android OS the high scores will be lost since they have not been written to a file.

The application does not terminate when using our exit button in the main menu, it just pauses the game and takes the user to the phone's home screen. It has been read that one can not / should not terminate an android application invoked in the code but rather let the android OS manage that task. Thus, it is still unclear how to call the *save()* method when the game has terminated completely.