APPLICATION REQUIREMENTS:

In this programming assignment you will have a chance to either use Mobile Media API (MMAPI) to create a seamless music player or use the MIDP 2.0 standard 2D gaming API to create a Bluetooth based multi player game. You can select one of the two programming assignments and do that assignment. However, remember that irrespective of what assignment you choose you are still responsible for knowing the programming API for both MMAPI and Gaming as future assignments may need you to understand both API. 5% additional credit will be given to students who do both assignments. Come on, Challenge yourselves!!

1. Seamless Media Player:

Develop a media player using MMAPI API. The media player connects to a HTTP server to download music. Traditionally HTTP is not meant for streaming applications, but it is nonetheless used extensively for streaming. One problem with HTTP is that the client application waits for the entire media stream to be downloaded before it starts playing the media. This may increase the user perceived latency. One solution is to split the media into multiple small chunks and store the chunks in media server. Your assignment is to connect to the HTTP server and get multiple clips one at a time. But you will start playing the first clip immediately after downloading the clip. Then in the background you continue to download the second clip and seamlessly stitch the second clip while playing the first clip. So the end user does not know that the media he/she is listening/watching is actually several small chunks. Similar to the Assignment#2 you will have to locally cache clips so when the user wants to play the media another time you can avoid network traffic. You can use any 5 video clips from any HTTP server (do some googling).

Extra Credit 2%: Seamless Media Player with Bluetooth

As an add-on to the seamless music player you can stream the media from one device to another device using Bluetooth. In effect one device downloads and stitches the music and streams the bytes to a second device using Bluetooth which then plays the music.
2. Bluetooth Based Mobile Car Racing Game:
Develop a simple two player car racing game using Bluetooth. One device becomes a 
master game console. At the start of the game the master device (Player 1) starts the 
game. The options at the game start are shown. Player 1 selects background (Tiledlayer) 
used for racing and the car model (Sprite). Player 1 uses Bluetooth to share his/her 
background TileLayer information and the car mode information to Player 2. Player 2 then 
selects the same background but uses a different car model (Sprite). Player 1 then 
communicates the screen coordinates of where Car1 is located on the device screen. 
Player 2 then uses this information to display Car 1 on his screen and then moves his own 
Car 2. Player 2 then sends his new Car location coordinates to Player 1 who will then use 
that to advance Player 1’s game. Now let the two players move on the screen without 
collisions using collision detection.

Extra Credit 2%: Car Racing on Road
As an add-on create the tiledlayer from a road image and use collision detection to make 
sure that the car always stays on a road surface and never allow the car to leave the road.

MINIMUM REQUIRED FEATURES:
Connect to any HTTP music streaming service ( one simple example: 
http://java.sun.com/products/java-media/mma/media/test-wav.wav ) . Don’t worry if you 
are stitching five different music clips. The purpose is to demonstrate the concept of 
stitching.

If you are doing the gaming assignment you are required to use TiledLayer, Sprite API.

SUBMISSION / DEMONSTRATION:
Demonstrate your application to TA/grader.

EXTRA INFORMATION:
You MUST finish up the coding independently. However, you are encouraged to discuss 
the general issues of this assignment with other students in the class, and you need to 
share the N95 devices among each other for test purpose. 
If you plan to do both the assignments you are welcome to collaborate with one 
other person in the class and do the second assignment as a pair. But remember 
that both students in the group are required to do one assignment independently. If 
the second assignment is done as a pair you will get half the extra credit.

GRADING:
Seamless Player: 100%
Car Racer: 100%