“Hello World” using NIOS II processor

follow steps below:

1. Create project. Project name and top level design.
2. Open Qsys. Import Nios II processor first, which check the economical type of that. Then add On Chip Memory. At the end add Jtag Uart.
3. Connect clock and reset of IPs.
4. Connect *data master* and *instruction master* to *s1* port of an On Chip Memory.
5. Connect data master to *avalon_jtag_slave.*
6. Configure Nios II IP. *Reset Vector* and *Exception Vector* will assign to On Chip Memory.
7. If there exist conflicts on base addresses, go to *System* tab and use *Assign base address*.
8. Save and generate Qsys system.
9. In Quartus, add *.qip* file which is created by Qsys. *<top level module>/ synthesis/ <top level module>.qip*
10. Now, Synthesis the system by Quartus, to find all unplanned pins and set them to appropriate pins of board.
11. Go to assignment editor. Double click on *To* tab to open Node Finder.
12. Change *Filter* to *Pins: unassigned pins*. Then click *List* button to see pins below. Then include all pins selected to right part and click *Ok*.
13. Change *Assignment Name* to *Location*. Then give each pin proper value.
14. Compile project.
15. Run the *Nios II Software Build Tools for Eclipse* which seats in *Tools* tab.
16. Change Workspace Launcher to current project directory.
17. Right click on left, click *New* and then *Nios II Application and BSP from Template*.
18. Add *.sopcinfo* file.
19. Select a name for C project. Then choose simple template for it.
20. It makes for you two folders. Application Folder and Board Support Package Folder.
21. Right click on Application Folder and *Build Project*.
22. Connect board to PC.
23. Go to Quartus Programmer to program the board.
24. Right click on *Application Folder* and *Run as* and *Nios II Hardware*.
25. Now *Run Configuration* page will open. Go to *Target Connection* and click *refresh connection*. So the usb blaster should be found. Check two options of *Ignore System Id*.
26. Run :))

* when we change our system in quartus, we should right click on *BSP folder* and in section of *Nios II* click *generate BSP*.
* solving memory overflow problem by reducing libraries by this link