Project #1: State Machines (due week 3).

 (80%) Have at least 4 NPCs doing something interesting. At least 2 state machines, with at least 10 states among them. Use at least 5 of the following **(-10% for each missing, list in readme.txt the file and line number of each that you use to get credit!):** Substates, a Global Message Response other than MSG\_Reset or MSG\_MouseClick, SendMsgDelayedToState, PopState, ReplaceStateMachine, PushStateMachine, PopStateMachine, RequeueStateMachine, data passed in msg, MarkForDeletion, SendMsgBroadcastToList, OnPeriodicTimeInState, or a persistent state variable such as DeclareStateInt. 

 (20%) Draw a UML diagram of the state machines you create. (-5% for each missing: Proper starting state indicator, labeled transitions, labeled states) (-5% for each missing state, -10% for each missing state machine). **Turn in hardcopy on paper.** 

 (Extra Credit 5%, no more than 15% per student) First to find a particular significant bug in the State Machine Language engine (not the entire project). E-mail me at [steve.rabin@gmail.com](mailto:steve.rabin@gmail.com). 

 (Extra Credit 5%) Take your largest state machine and **replace every SML macro** with the code it represents from statemch.h (use the debug version). Make sure it compiles and runs. Format the code nicely (how you would normally format/indent code, except for macros that have \_\_LINE\_\_). **Turn in both the macro version and the pure code version (make it an #ifdef in the file, defaulted to the no macro version).** 

 (Extra Credit 5%) Answer the questions about persistent state variables (see PowerPoint lecture for details on questions). 

 Turn in: Place in directory "Project1" All code, resource files, and exe (-5% if I can't double click exe and run). (-5% for large unnecessary files: ".ncb" or ".sdf" file, hidden subversion directories/files, anything from the Debug/Release dir that isn't the exe) 

 Turn in: Create a readme.txt. In a readme.txt, write one paragraph about what you implemented, one paragraph explaining directions (if needed), one paragraph about your experience working on this project (problems, insights, difficulty, number of hours spent, etc). List the 10 features you chose to implement and which file and line number I can find each one (-5% for each missing or each missing listing). Describe any attempted extra credit. 

 Turn in: UML diagrams. In hardcopy on paper (or electronically in e-mail along with project if late). 

 Turn in: Late projects should be e-mailed to [steve.rabin@gmail.com](mailto:steve.rabin@gmail.com). Rename the .exe to .ex\_ or else gmail won't deliver the attachment. Turn in late hardcopy UML diagrams at the following class.

**Note**

1. The framework supports VS2012, VS2013 and VS2015.
2. By default the framework uses VS2013. You can change the setting via:

Project->Property->Congiguration Properties->General->Platform Toolset

1. After you finish the project. Please **change “vs\_version” variable in Build.bat file** for the version of Visual Studio you use. (2012 for VS2012, 2013 for VS2013, 2015 for VS2015)
2. Double click Build.bat to build the project and place executable in “StateMachine” folder. Then test your executable to make sure it runs and does not crash. (TA will use this script to build your project)
3. Change your executable file name to the name of your project. (So when TA build your project the executable does not get overwritten.)
4. Before submission, **double click Clean.bat to remove all unnecessary files**.
5. Do not change “StateMachine” folder name.

**Checklist**

1. Executable is in **release** mode.
2. Have at least 4 NPCs doing something interesting.
3. Have at least 2 state machines.
4. Have at least 10 states among all state machines.
5. Have at least 5 **different** features noted above.
6. Drew or print out a hardcopy of your state machine UMLs to turn in.
7. UML: Used proper starting state indicator (warning: different indicators for state and substate).
8. UML: Labeled all transitions (arrows) and states.
9. Wrote one paragraph about what you implemented in the readme.txt.
10. Wrote one paragraph explaining directions in the readme.txt.
11. Wrote one paragraph about your experience on the project in the readme.txt.
12. Listed the 5 features with file/line number in the readme.txt.
13. Listed what extra credit you attempted (if any) in readme.txt.
14. Submitted on the network (“Submit”) folder **BEFORE** 6:00PM.
15. **DO NOT ZIP THE PROJECT.**
16. All code and resource files were in “Project1” folder.
17. Changed “vs\_version” variable in Build.bat file for the version of Visual Studio you used. (make sure you can build project using Build.bat)
18. Did you test the exe runnable without the debugger? Test it by double clicking the exe to run (NOT IN THE DEBUGGER).
19. Did you remove all unnecessary files? Include but not limit to: the debug folder, release folder, ipch folder, ncb file, sdf file, and all subversion files. (Use Clean.bat)