AMath 483/583 — Lecture 3 — April 1, 2011	Notes:		
Today:			
• Unix			
Mercurial examples			
Mandau			
Compiled languages, Fortran 90			
R.J. LeVeque, University of Washington AMath 483/583, Lecture 3, April 1, 2011		R.J. LeVeque, University of Washington	AMath 483/583, Lecture 3, April 1, 2011
Bash shell	Notes:		
The shell is the program that prints a prompt in a terminal			
window, reads what you type in, executes commands.			
bash is one commonly used shell.			
Each time a new shell is started (e.g. by opening a new terminal), the commands in <b>\$HOME/.bashrc</b> are executed.			
HOME is an environment variable that is set automatically for			
you.			
[~] aspen% printenv HOME /Users/rjl			
[~] aspen% echo \$HOME			
/Users/rjl			
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Setting your prompt	Notes:		
ç ş			
\$ PS1='[\W] \h% ' [~] aspen%			
Note $\setminus W$ means last part of working directory, $\setminus h$ is machine name.			
[~] aspen% cd hg/uwamath583s11			
[uwamath583s11] aspen% pwd			
/Users/rjl/hg/uwamath583s11			
[uwamathoossii] aspen%			
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Environment variables	Notes:
<pre>\$ export CLASSHG=\$HOME/hg/uwamath583s11 \$ cd \$ pwd /Users/rj1 \$ cd \$CLASSHG \$ pwd </pre>	
/Users/rj1/hg/uwamath583s11 Exporting an environment variable makes it available to certain jobs you start from the shell.	
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Environment variables	Notes:
<pre>tb c ist all your environment variables:     \$ printenv     TERM=xterm=color     SHELL=/bin/bash     CDPATH=.:*     USER=rjl     CLASSHG=/Users/rjl/hg/uwamath583s11     HOME=/Users/rjl     FC=gfortran     MATLABPATH=.:/Users/rjl/matlab     PTHONPATH=.:/Users/rjl/python     etc</pre>	R.J. LeVeque, University of Washington AMath 483/583, Lecture 3, April 1, 2011
<pre>\$ cd \$ mkdir newproject \$ cd newproject /Users/rjl/newproject \$ hg init \$ ls \$ ls -a # show hidden files .// .hg/ \$ cat &gt; file1.txt First line Second line ^D \$</pre>	
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hg demo	Notes:
<pre>\$ hg add file1.txt adding file1.txt</pre>	
\$ hg status A file1.txt	
<pre>\$ hg commit -m "First commit to this repository" file1.txt committed changeset 0:eb3222dd0b4f</pre>	
<pre>\$ hg status # show only files that have changed \$</pre>	
\$ hg status -A   # show status of all files C file1.txt	
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hg demo	Notes:
<pre>\$ vi file1.txt # change the file</pre>	
<pre>\$ cat file1.txt # print out the file First line New Second line Added Third line</pre>	
\$ hg status M file1.txt	
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hg demo	Notes:
<pre>\$ hg diff diff -r eb3222dd0b4f file1.txt  a/file1.txt Thu Mar 31 20:48:55 2011 -0700 +++ b/file1.txt Thu Mar 31 20:53:00 2011 -0700 @@ -1,2 +1,3 @@ First line -Second line +New Second line +Added Third line</pre>	
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hg demo	Notes:
<pre>\$ hg commit file1.txt \     -m "changed 2nd line, added 3rd" file1.txt committed changeset 1:ff67e66ed5b0 \$ hg log file1.txt changeset: 1:ff67e66ed5b0 tag: tip user: Randy LeVeque <rjl@uw.edu> date: Thu Mar 31 20:54:57 2011 -0700 files: file1.txt description: changeset: 0:eb3222dd0b4f user: Randy LeVeque <rjl@uw.edu> date: Thu Mar 31 20:48:55 2011 -0700 files: file1.txt description: changeset: file1.txt</rjl@uw.edu></rjl@uw.edu></pre>	R.J. LeVeque, University of Washington AMath 483/583, Lecture 3, April 1, 2011
ha domo	Netoo
<pre>\$ pwd /Users/rjl/newproject \$ cd \$ hg clone newproject newbranch updating to branch default resolving manifests getting file1.txt 1 files updated, 0 files merged, 0 files removed, 0 file \$ cd newbranch /Users/rjl/newbranch \$ ls file1.txt</pre>	R.J. LeVegue, University of Washington AMath 483/583, Lecture 3, April 1, 2011
	Netee
<pre>\$ pwd /Users/rjl/newbranch \$ vi file1.txt \$ cat file1.txt First line New Second line Changed Third line \$ hg commit -m "changed a file in the branch" file1.txt committed changeset 2:ddde02c30d03 \$ cd/newproject \$ cat file1.txt First line New Second line Added Third line</pre>	
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hg demo	Notes:
<pre>\$ cd - /Users/rjl/newbranch \$ hg push pushing to /Users/rjl/newproject searching for changes 1 changesets found adding changesets adding manifests adding file changes added 1 changesets with 1 changes to 1 files \$ cd - /Users/rjl/newproject \$ hg update resolving manifests getting file1.txt 1 files updated, 0 files merged, 0 files removed, 0 file</pre>	
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hg demo	Notes:
<pre>\$ vi file1.txt \$ cat file1.txt First line Changed Second line and got rid of third \$ hg status M file1.txt \$ hg revert file1.txt saving current version of file1.txt as file1.txt.orig reverting file1.txt \$ cat file1.txt First line New Second line Changed Third line</pre>	R.J. LeVeque, University of Washington AMath 483/583, Lecture 3, April 1, 2011
ha domo	Notoo
<pre>\$ hg status \$ hg revert -r0 file1.txt reverting file1.txt \$ cat file1.txt \$ cat file1.txt First line Second line \$ hg status M file1.txt ? file1.txt.orig \$ hg commit -m "After reverting to revision 0" file1.txt committed changeset 3:5de4f8a71915</pre>	

hg demo     Notes:       To remove a directory and all subdirectories:     4 cd       4 cd     5 cd       5 cd     6 cd       8 cd     1 is matchanch       1 is matchanch     Notes:				
To remove a directory and al subdirectories:       9 ed         9 ed       1 model month         1 model month       1 model month         9 ed model month       1 model m	hg demo	Notes:		
Image: Second				
S cd S rm = f naktranch       S ld medicanch         S ld medicanch       S ld medicanch         Ist medicanch       Medicanch         Ist ddf       Medicanch         Ist ddf       Medicanch         Medicanch       Medicanch         Ist ddf       Medicanch         Ist ddff       Medicanch				
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<sup>1</sup> is newbranch: is: newbranch: ·-rf means recursively, force (without asking)           • Lance, based of Martines asking)             • Lance, based of Martines           • Martines asking of Martines             • A Lance, based of Martines           • Martines asking             • A Lance, based of Martines           • Martines             • A conset, based of Martines           • Martines             • S in a of f = cons           • Martines             • Martines           • Martines             • Martines           • Martines             • Martines           • Martines             • Mart	\$ cd \$ rm -rf newbranch			
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	IS: newpranch: No such IIIe or directory			
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Matching and memory of end of details using a finite detail of the details of th	B L LoVenue University of Washington AMath 483/583 Lecture 3. April 1. 2011		R I LeVeque University of Washington	AMath 483/583 Lecture 3 April 1 2011
hg demo       Notes:         \$ cd newproject /Users/r11/newproject       \$ show disk usage /Like / indy/atore /2 K / indy/atore /2 K / indy/atore /2 K / indy/atore /2 K / indy       \$ show disk usage /Like / indy/atore /2 K / indy/atore /2 K / indy         Could eliminate all history by /2 for			The Leveque, enversity of washingten	Awain 400/000, 200/000, 200/000, April 1, 2011
<pre>\$ cd newproject //Jears/rj1/newproject \$ du -h . # show disk usage 4.0K ./.hg/store j2K ./.hg/store j2K ./.hg/store j2K ./.hg 60K .</pre> Could eliminate all history by § rm -rf .hg Warning: It's gone, unless you have a clone somewhere. R1.Leteau. Useredy of Wateriger Auto: 40300, Lecuse 1, 4pril ; 2011 Notes: Note: Note: Note: Note: S ng diff command Note: Note: S ng diff -rj -rj 0 demoil.f90   more To see the changes from previous version: § hg diff -rj 0 rilo demoil.f90   more To see the changes from previous version: § hg diff -rj 0 rilo demoil.f90   more To see if any changes were made since then: § hg diff -rj 0 rilo demoil.f90   more tip means most recent committed version. R lateau base were made since then: § hg diff -rj 0 rilo demoil.f90   more tip means most recent committed version. R lateau base were made since then: S hg diff -rj 0 rilo demoil.f90   more tip means most recent committed version. R lateau base were made since then: S hg diff -rj 0 rilo demoil.f90   more tip means most recent committed version. R lateau base has the log most of the demoil for the de	hg demo	Notes:		
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<pre>//Users/rjl/newproject § du =h . # show disk usage 4.0K/.hg/store 52K/.hg 60K Could eliminate all history by § rm =rf .hg Warning: It's gone, unless you have a clone somewhere. RL Lakege University of Warnington Adden 483583. Lackue 3. April 1, 2011 RL Lakege University of Warnington Adden 483583. Lackue 3. April 1, 2011 Notes: Notes: Note changeset 10:54971910d50a has the log message "Fixed a bug: Gropt of change n to m in declaration". (Kumber 10: s clone-dependent!) To see the changes from previous version:</pre>	\$ cd newproject			
<pre>\$ du -h . 4 show disk usage 4.0K</pre>	/Users/rjl/newproject			
20x       ./. Ing/store         32x       ./. Ing         60x       .         Could eliminate all history by       \$ rm -rf .hg         Warning: It's gone, unless you have a clone somewhere.       RJ LeWear, University of Warnington       Attain 483550, Lecture 3, April 1, 2011         Ng diff command       RJ LeWear, University of Warnington       Attain 483550, Lecture 3, April 1, 2011         Now try:       \$ cd SCLASSHG/codes/fortran       \$ hg log demoi.f90   more         Lists all the hg changesets in which file <i>demoi.f90</i> was changed.       Note changeset 10:54971910d50a has the log message         "Fixed a bug: forgot to change no to m in declaration". (Number 10: is clone-dependent!)       To see the changes from previous version:         \$ hg diff -r9 -r10 demoi.f90   more       To see if any changes were made since then:         \$ hg diff -r10 tip demoi.f90   more       tip means most recent committed version.         % hg diff -r10 tip demoi.f90   more       tip means most recent committed version.         % hg diff -r10 tip demoi.f90   more       tip means most recent committed version.	\$ du -h . # show disk usage			
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\$ rm -rf .hg         Warning: It's gone, unless you have a clone somewhere.         RJ LeWeye, University of Washington         Auth 483583, Lecture 3, April 1, 2011         RJ LeWeye, University of Washington         Auth 483583, Lecture 3, April 1, 2011         RJ LeWeye, University of Washington         Auth 483583, Lecture 3, April 1, 2011         RJ LeWeye, University of Washington         Auth 483583, Lecture 3, April 1, 2011         Note classes         \$ ocd \$CLASSHG/codes/fortran \$ hg log demo1.f90   more         Lists all the hg changesets in which file demo1.f90 was changed.         Note changeset 10:54971910d50a has the log message "Fixed a bug: forgot to change n to m in declaration". (Number 10: is clone-dependent!)         To see the changes from previous version: \$ hg diff -r9 -r10 demo1.f90   more         S hg diff -r10 tip demo1.f90   more         To see if any changes were made since then: \$ hg diff -r10 tip demo1.f90   more         Livegue, University of Washington         Auth 483582, Lecture 3, April 1, 2011	Could eliminate all history by			
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hg diff command       Now try:         \$ cd \$CLASSHG/codes/fortran       \$ hg log demol.f90   more         Lists all the hg changesets in which file demol.f90 was changed.       Note changeset 10:54971910d50a has the log message         "Fixed a bug: forgot to change n to m in declaration".       (Number 10: is clone-dependent!)         To see the changes from previous version:       \$ hg diff -r9 -r10 demol.f90   more         To see if any changes were made since then:       \$ hg diff -r10 tip demol.f90   more         to means most recent committed version.       \$ hg diff -r10 tip demol.f90   more	B.J. LeVenue. University of Washington AMath 483/583. Lecture 3. April 1. 2011		R.J. LeVeque, University of Washington	AMath 483/583. Lecture 3. April 1, 2011
hg diff command       Notes:         Now try:       \$ cd \$CLASSHG/codes/fortran         \$ hg log demol.f90   more       Eists all the hg changesets in which file <i>demol.f90</i> was changed.         Note changeset 10:54971910d50a has the log message "Fixed a bug: forgot to change n to m in declaration". (Number 10: is clone-dependent!)         To see the changes from previous version:       \$ hg diff -r9 -r10 demol.f90   more         To see if any changes were made since then:       \$ hg diff -r10 tip demol.f90   more         tip means most recent committed version.       R diff -r10 tip demol.f90   more				
Now try:       \$ cd \$CLASSHG/codes/fortran         \$ hg log demol.f90   more         Lists all the hg changesets in which file demol.f90 was changed.         Note changeset 10:54971910d50a has the log message "Fixed a bug: forgot to change n to m in declaration". (Number 10: is clone-dependent!)         To see the changes from previous version:         \$ hg diff -r9 -r10 demol.f90   more         To see if any changes were made since then:         \$ hg diff -r10 tip demol.f90   more         tip means most recent committed version.         BJ Levage. University of Washington	hg diff command	Notes:		
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Lists all the hg changesets in which file <i>demo1.f90</i> was changed. Note changeset 10:54971910d50a has the log message "Fixed a bug: forgot to change n to m in declaration". (Number 10: is clone-dependent!) To see the changes from previous version: \$ hg diff -r9 -r10 demo1.f90   more To see if any changes were made since then: \$ hg diff -r10 tip demo1.f90   more tip means most recent committed version. BJ. LeVeque, University of Washington Math 483/583, Lecture 3, April 1, 201	<pre>\$ cd \$CLASSHG/codes/fortran \$ hg log demol.f90   more</pre>			
Note changeset 10:54971910d50a has the log message         "Fixed a bug: forgot to change n to m in declaration". (Number 10: is clone-dependent!)         To see the changes from previous version:         \$ hg diff -r9 -r10 demo1.f90   more         To see if any changes were made since then:         \$ hg diff -r10 tip demo1.f90   more         tip means most recent committed version.         RJ. LeVeque, University of Washington	Lists all the hg changesets in which file <i>demo1.f90</i> was changed.			
To see the changes from previous version:       \$ hg diff -r9 -r10 demo1.f90   more         To see if any changes were made since then:       \$ hg diff -r10 tip demo1.f90   more         tip means most recent committed version.       RJ. LeVeque, University of Washington         AMath 483/583, Lecture 3, April 1, 2011       RJ. LeVeque, University of Washington	Note changeset 10:54971910d50a has the log message "Fixed a bug: forgot to change n to m in declaration". (Number 10: is clone-dependent!)			
\$ hg diff -r9 -r10 demo1.f90   more         To see if any changes were made since then:         \$ hg diff -r10 tip demo1.f90   more         tip means most recent committed version.         BJ. LeVeque, University of Washington         AMath 483/583, Lecture 3, April 1, 2011         RJ. LeVeque, University of Washington	To see the changes from previous version:			
To see if any changes were made since then:       \$         \$ hg diff -r10 tip demo1.f90   more         tip means most recent committed version.         RJ. LeVeque, University of Washington       AMath 483/583, Lecture 3, April 1, 2011         RJ. LeVeque, University of Washington       AMath 483/583, Lecture 3, April 1, 2011	\$ hg diff -r9 -r10 demol.f90   more			
\$ hg diff -r10 tip demo1.f90   more         tip means most recent committed version.         R.J. LeVeque, University of Washington         AMath 483/583, Lecture 3, April 1, 2011         R.J. LeVeque, University of Washington	To see if any changes were made since then:			
tip means most recent committed version.           R.J. LeVeque, University of Washington         AMath 483/583, Lecture 3, April 1, 2011         R.J. LeVeque, University of Washington         AMath 483/583, Lecture 3, April 1, 2011	\$ hg diff -r10 tip demo1.f90   more			
	tip means most recent committed version. R.J. LeVeque, University of Washington AMath 483/583, Lecture 3, April 1, 2011		R.J. LeVeque, University of Washington	AMath 483/583, Lecture 3, April 1, 2011

hg diff command	Notes:
To see if any changes were made in working copy compared to tip:	
\$ hg diff demol.f90   more	
<pre>\$ hg diff   more # shows diffs in all files</pre>	
To check status of files in working version:	
<pre>\$ hg status  # for entire clone \$ hg status .  # for this directory \$ hg status -amr  # added, modified, removed \$ hg status *.f90  # only for .f90 files \$ hg help status  # for more options</pre>	
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Using xxdiff in hg	Notes:
Modify the file .hg/hgrc, to add:	
[extensions] hgext.extdiff =	
(Put in \$HOME/.hgrc to apply in all directories.)	
Then you can do:	
\$ hg extdiff -p xxdiff -r9 -r10 demo1.f90	
Might want to add to .bashrc:	
alias hgd = "hg extdiff -p xxdiff"	
Then you can do:	
\$ had -r9 -r10 demo1.f90	