R · I · T	Rochester Institute of Technology Golisano College of Computing and Information Sciences Department of Information Sciences and Technologies

4002-XXX
Software Development on Linux Systems
Exam and Practical

Name: _____ **Section:** _____

Part 1 Matching:

Match the terms on the left to their definitions on the right

1. Libre _____

A. Free as in Freedom
No Restrictions; Free to use, modify & distribute

2. Gratis _____

B. Free as in Beer
No price; Not free to use, modify & distribute

R · I · T	Rochester Institute of Technology Golisano College of Computing and Information Sciences Department of Information Sciences and Technologies

Match the terms on the left to their definitions on the right

Licenses		Definitions
3. GPL	_____	**A. Distribute with proprietary software as long as open source code is attributed; No implication you wrote the code or that it was endorsed by the foundation that made this license**
4. LGPL	_____	**B. Distribute with proprietary software as long as open source code is attributed; No implication of open source developers, organization or software endorsement**
5. Apache	_____	**C. Distribute modified code as long as derivative is compatible with the original license; No linking to proprietary software**
6. BSD	_____	**D. Distribute modified code if license is compatible with original; Distribute with proprietary software as long as open source code is included with license; Grants patent rights code under a patent**
7. CDDL	_____	**E. Distribute modified software as long as the open source code is included with its license; Distribute with software of any license as long as the open source code is included with its license**
8. Eclipse	_____	**F. Distribute modified source code as long as derivative is compatible with the original license; Can link with proprietary software, but all changes must be provided under original license**
9. MIT	_____	**G. Distribute modified code as long as it uses the original license; Distribute with proprietary software if the open source code is attributed with its license; Distribute under any license as long as the original files are preserved and each file is marked as the original license; Not allowed to distribute executables without the source code and license**
10. MPL	_____	**H. Distribute modified code if license is the same; Can distribute with proprietary software if the open source code is attributed; Licenses each file individually**

R · I · T	Rochester Institute of Technology Golisano College of Computing and Information Sciences Department of Information Sciences and Technologies

Match the terms on the left to their definitions on the right

Creative Commons License		**Definitions**
11. Attribution	_____	**A. Must use verbatim; No modifications or by-products**
12. Noncommercial	_____	**B. Must credit author/licensor as license requires**
13. No Derivatives	_____	**C. Must distribute derivatives under exact same license**
14. Share Alike	_____	**D. Must be used only for noncommercial purposes**

R · I · T	Rochester Institute of Technology Golisano College of Computing and Information Sciences Department of Information Sciences and Technologies

Match the terms on the left to their definitions on the right

Business Approach		**Definitions**
15. Donations	_____	**A. Offering a free version and a paid proprietary version**
16. Merchandise	_____	**B. Coexistence through a mutual agreement with another party**
17. Freemium/ Open Core	_____	**C. Requires non-profit status and can have inconsistent income**
18. Partner/ Referral	_____	**D. Offsetting cost through promotion of another product; Maintains non-profit status**
19. Advertising	_____	**E. Selling items to consumers to promote your project and increase income; Maintains non-profit status**

R · I · T	Rochester Institute of Technology Golisano College of Computing and Information Sciences Department of Information Sciences and Technologies

Match the terms on the left to their definitions on the right

Business Approach		**Definitions**
20. Service Provider	_____	**A. Offering a service leveraging your open source software**
21. Support Provider	_____	**B. Offering special permission to a buyer to use software outside of the license terms, but within the terms you specify for them**
22. License Exemption	_____	**C. Offering consulting/aid contracts for users of certain software**
23. Business Catalyst	_____	**D. When your software acts as a stimulant for your business approach**

Part 2 Practical:

24. Package Installation

You need to install the following packages

Ubuntu: build-essential
openjdk-6-jdk
libsdl1.2-dev
libsdl1.2-gfx1.2-dev
libsdl1.2-image1.2-dev
libsdl1.2-mixer1.2-dev
libsdl1.2-net1.2-dev
libsdl1.2-ttf2.0-dev
bzr
bzrtools
git-core

Fedora: "Development Tools"
java-1.6.0-openjdk-devel
SDL-devel
SDL_gfx-devel
SDL_image-devel
SDL_mixer-devel
SDL_net-devel
SDL_ttf-devel
bzr
bzrtools
git-core

Note: The colorkey demo is a tutorial that is GNU Free Documentation Licensed and the code is GPL licensed.

25. Build Automation Script

Download practical.tar.gz from MyCourses

You need to write a script called practical.sh that

- **Does not print any output if the command line argument given is - -no-output Note: It should still display the colorkey SDL program when you run the script**
- **Only prints out the architecture build information if the command line argument given is - -only-completion**
- **Prints program output and the architecture build information if there are no command line arguments given**
- **Detects the architecture build and prints "Built for 32 bit" if the architecture is i386 or i686**

  or prints

  "Built for 64 bit" if the architecture is x86_64

  or prints "Unknown architecture" if the architecture was not i386, i686 or x86_64
- **Compiles the Java file**
- **Compiles the Hello.cpp file as Hello**
- **Compiles the colorkey.cpp file as colorkey using the libraries SDL and SDL_image**
- **Declares an array**
- **Stores the execution/output of the Java file, C++ file, SDL C++ file, Perl file and Python file in the array**

  Hint: You need to make each position of the array the execution of one of the executables. This should not give any text output as it is being stored in the array. You should still see the colorkey SDL program when this part runs

EXAMPLE OUTPUT ON NEXT PAGE

R · I · T	Rochester Institute of Technology Golisano College of Computing and Information Sciences Department of Information Sciences and Technologies

Example Output for a 64 Bit System

No Arguments

```
./practical.sh
```

```
Completed Java
Completed SDL
Completed Python
Completed Perl
Completed C++
Built for 64 bit
```

--no-ouput Argument

```
./practical.sh --no-output
```

--only-completion Argument

```
./practical.sh --only-completion
```

```
Built for 64 bit
```

Instructor/TA Sign-Off _____

26. Version Control

Using git or bzr:

- **Setup who you are**
- **Initialize a branch**
- **Commit the program files, images and the script to your branch with the message 'This is my practical commit to version control'**

Hint: You may check your commits with

bzr log

or

git log

Instructor/TA Sign-Off _____

27. Man Pages

Write a man page for your script called practical.1
Note: Remember you can always test your man page with *man ./practical.1*

Your output should look like this:

practical(1) User Manuals practical(1)

NAME
practical – Build automation script for practical

SYNOPSIS
practical[--no-output]

DESCRIPTION
practical 1.1

practical is a build automation script for the practical. It builds all of the practical files and executes them with output.

OPTIONS
--no-output
Does not print any output when the script is run, but still builds and executes the files

-only-completion
Only prints out the build architecture information

BUGS
Contact myUsername@ rit.edu for any bugs in the program

SEE ALSO
gcc(1), g++(1), javac(1), python(1), perl(1)

1.1 Linux Version January 2012 practical(1)

Instructor/TA Sign-Off _____