CSB 353: Compiler Design

LAB 2

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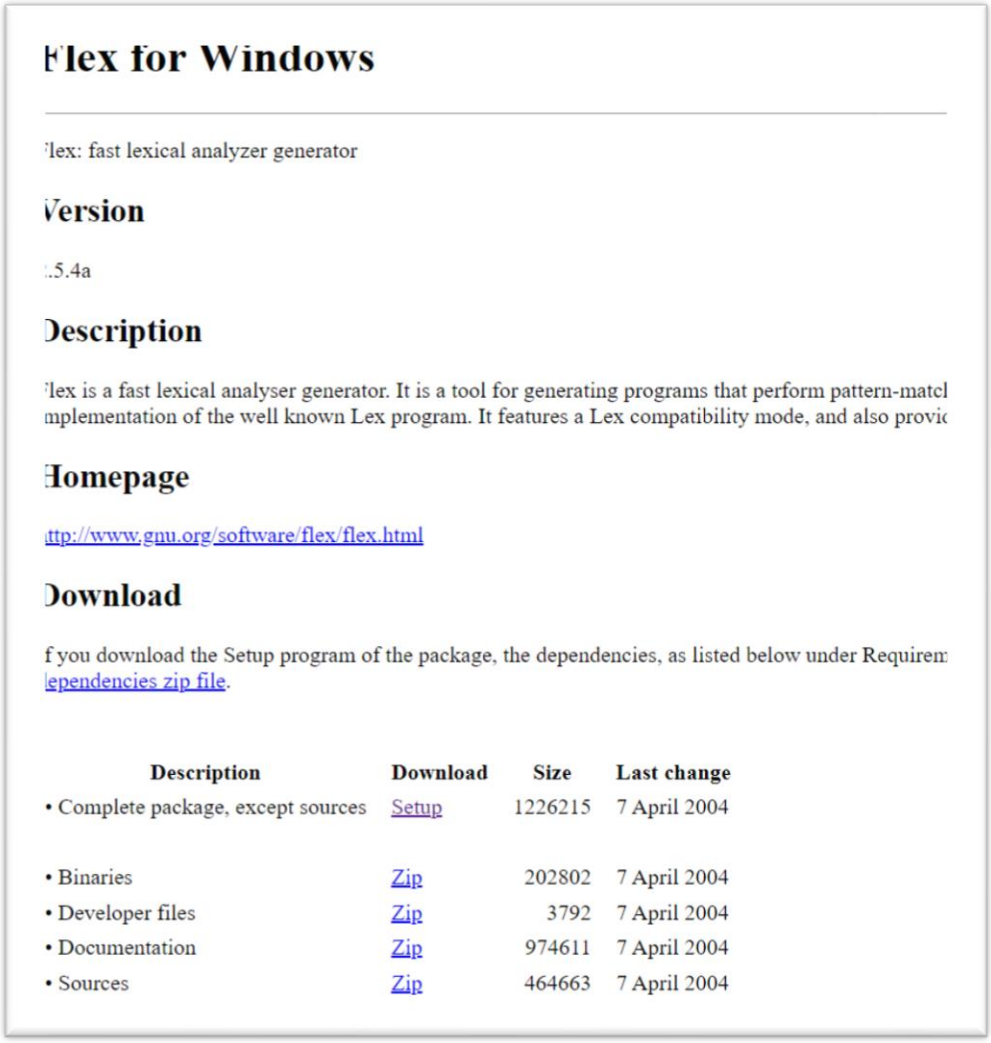
Ques 1. Install Flex.

- Download [FLEX Setup]



Flex for Windows

'lex: fast lexical analyzer generator

Version

.5.4a

Description

'lex is a fast lexical analyser generator. It is a tool for generating programs that perform pattern-matcl
mplementation of the well known Lex program. It features a Lex compatibility mode, and also provic

Homepage

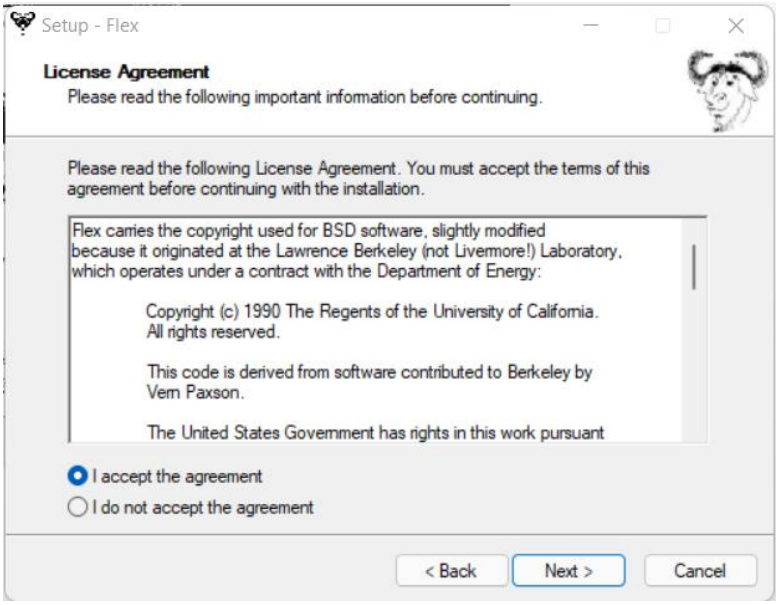
ttp://www.gnu.org/software/flex/flex.html

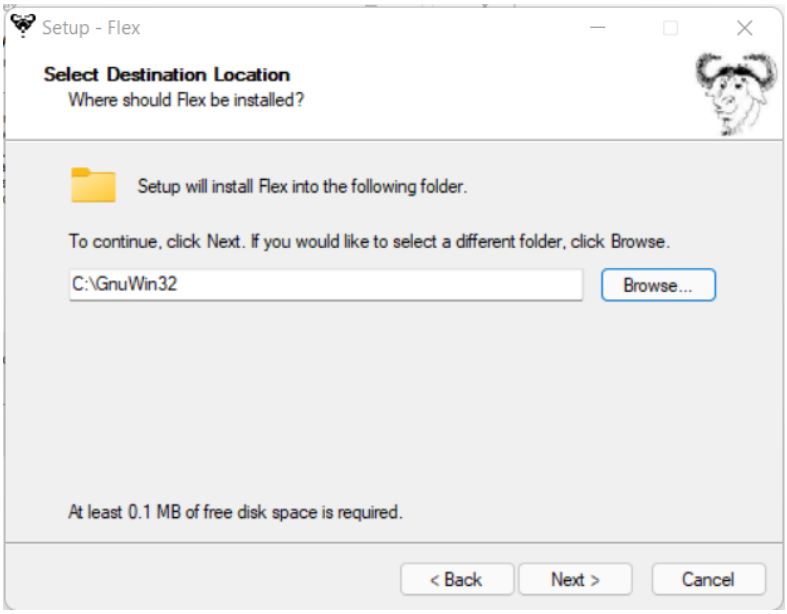
Download

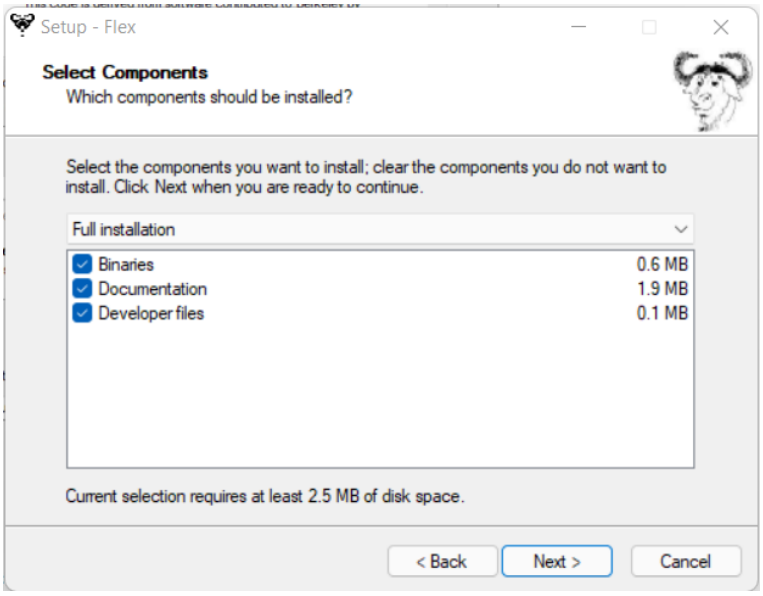
f you download the Setup program of the package, the dependencies, as listed below under Requirem
lependencies zip file.

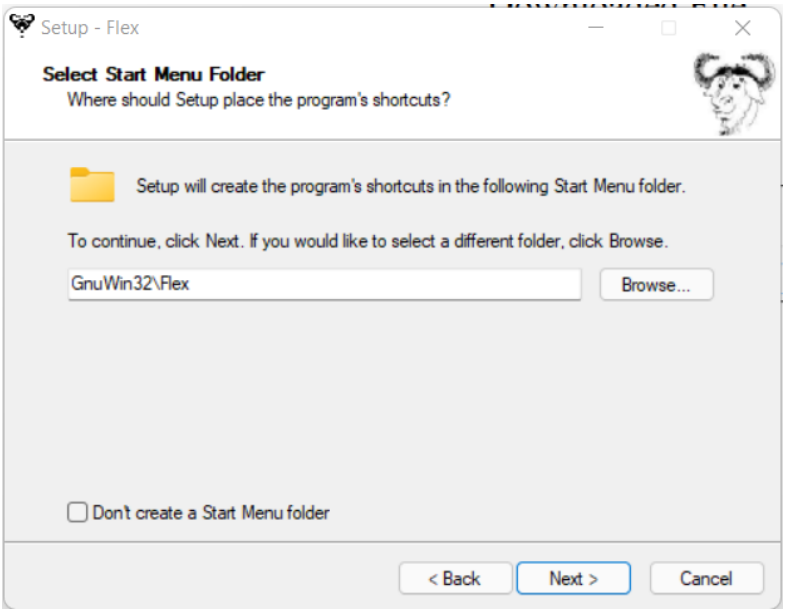
Description	Download	Size	Last change
• Complete package, except sources	Setup	1226215	7 April 2004
• Binaries	Zip	202802	7 April 2004
• Developer files	Zip	3792	7 April 2004
• Documentation	Zip	974611	7 April 2004
• Sources	Zip	464663	7 April 2004

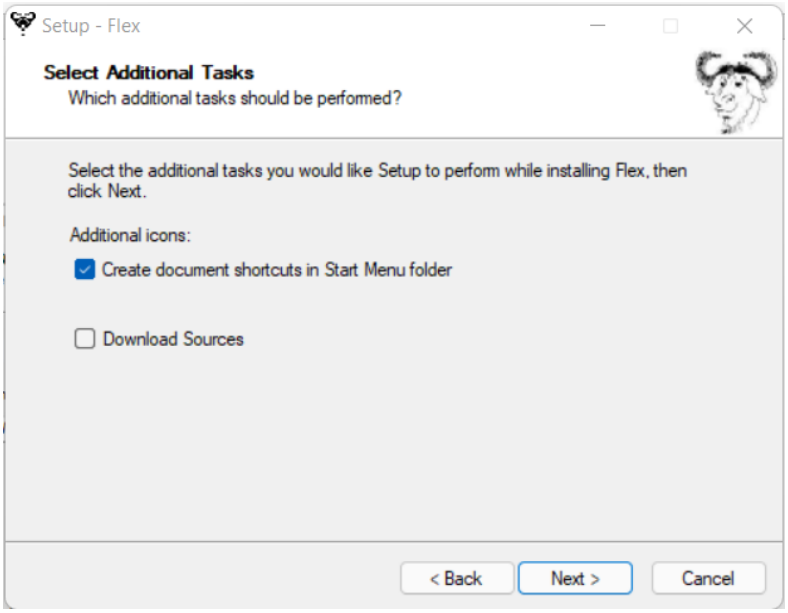
- Run the Installation file

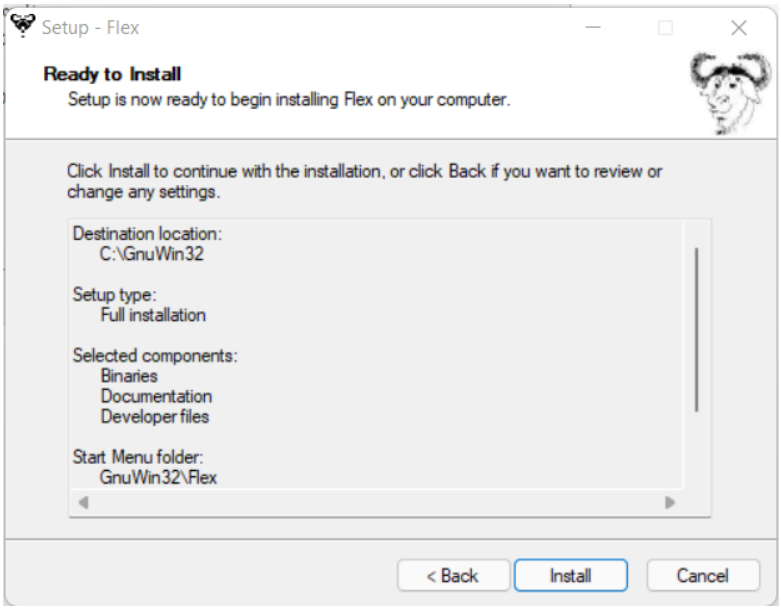

Setup - Flex
License Agreement
Please read the following important information before continuing.
Please read the following License Agreement. You must accept the terms of this agreement before continuing with the installation.
Flex carries the copyright used for BSD software, slightly modified because it originated at the Lawrence Berkeley (not Livermore!) Laboratory, which operates under a contract with the Department of Energy:
Copyright (c) 1990 The Regents of the University of California. All rights reserved.
This code is derived from software contributed to Berkeley by Vern Paxson.
The United States Government has rights in this work pursuant
I accept the agreement
I do not accept the agreement
< Back
Next >
Cancel

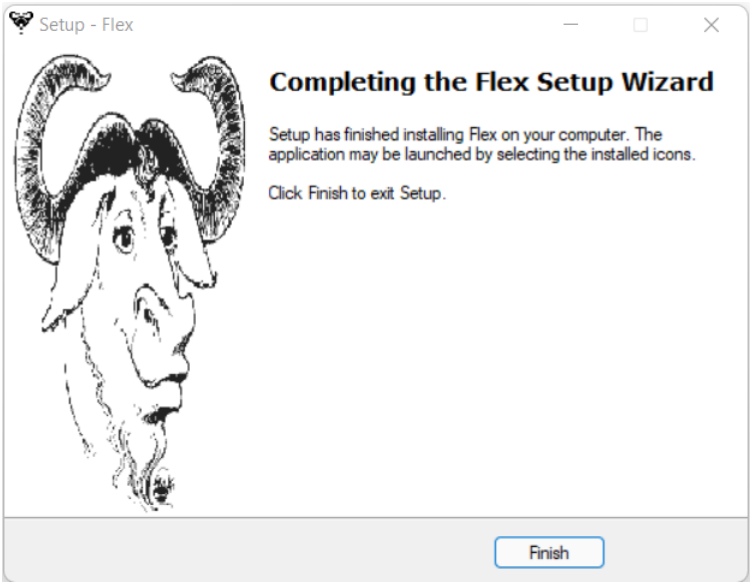

Setup - Flex
Select Destination Location
Where should Flex be installed?
Setup will install Flex into the following folder.
To continue, click Next. If you would like to select a different folder, click Browse.
C:\GnuWin32
Browse...
At least 0.1 MB of free disk space is required.
< Back
Next >
Cancel


Setup - Flex
Select Components
Which components should be installed?
Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.
Full installation
Binaries 0.6 MB
Documentation 1.9 MB
Developer files 0.1 MB
Current selection requires at least 2.5 MB of disk space.
< Back
Next >
Cancel

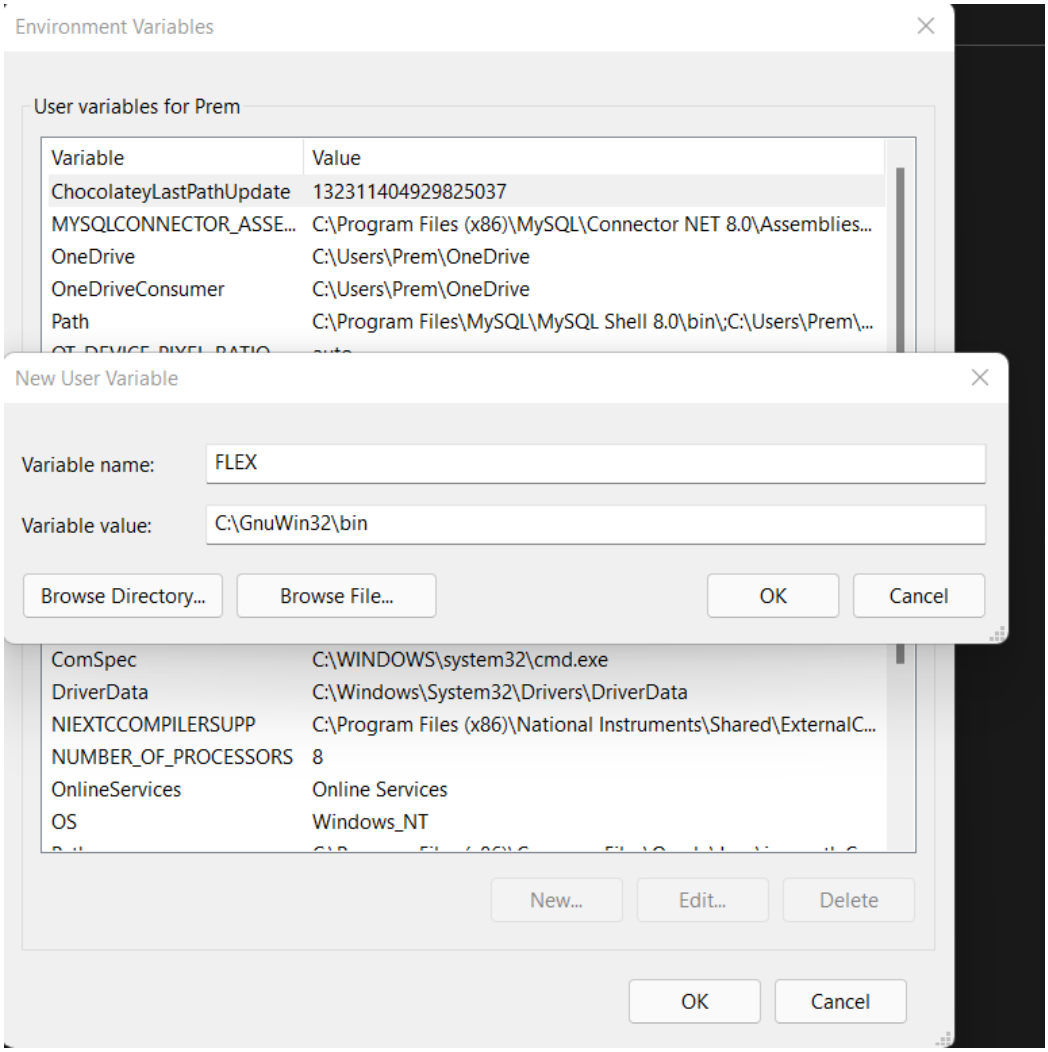

Setup - Flex
Select Start Menu Folder
Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
GnuWin32\Flex
Browse...
Don't create a Start Menu folder
< Back
Next >
Cancel

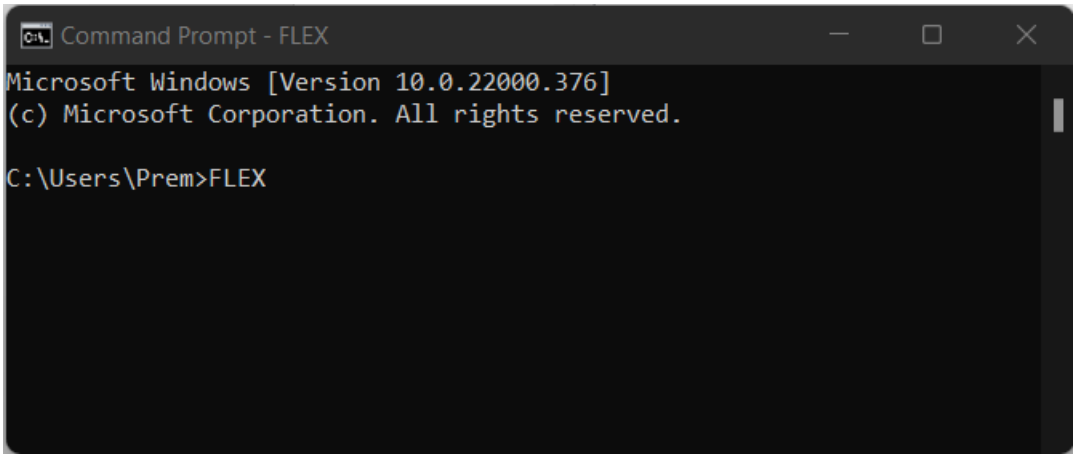

Setup - Flex
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing Flex, then click Next.
Additional icons:
Create document shortcuts in Start Menu folder
Download Sources
< Back
Next >
Cancel


Setup - Flex
Ready to Install
Setup is now ready to begin installing Flex on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Destination location:
C:\GnuWin32
Setup type:
Full installation
Selected components:
Binaries
Documentation
Developer files
Start Menu folder:
GnuWin32\Flex
< Back
Install
Cancel



- Setting Environment Variable for FLEX.




Command Prompt - FLEX
Microsoft Windows [Version 10.0.22000.376]
(c) Microsoft Corporation. All rights reserved.
C:\Users\Prem>FLEX

Ques2. Create a C program using FLEX for generating a Lexical Analyzer to identify the following tokens:

Keywords; Examples-for, while, if etc.

Identifier; Examples-Variable name, function name, etc.

Operators; Examples '+', '++', '-' etc.

Literals; (you may identify, INT, FLOAT, REAL)

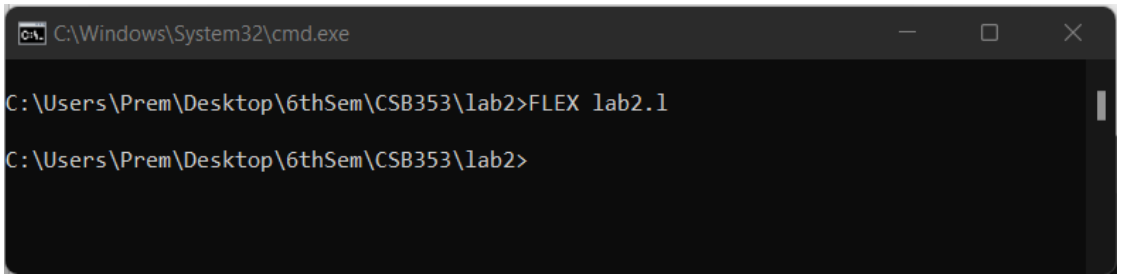
Separators; Examples ',' ';' etc.

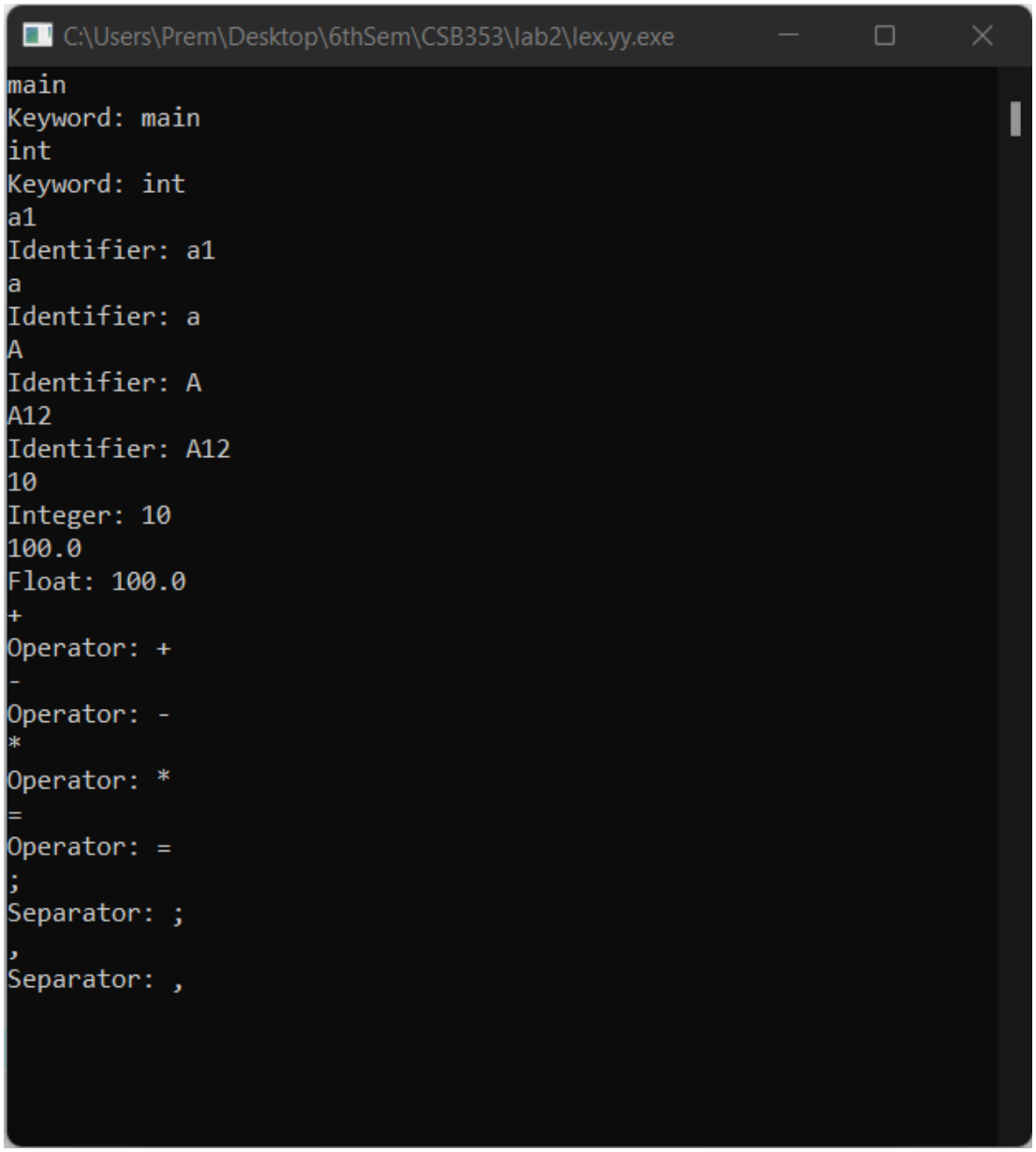
Code:

CSB353 > lab2 > lab2.l

```
DIGIT    [0-9]
ID       [a-zA-Z][a-zA-Z0-9]*
%%
{DIGIT}+    {
            printf( "Integer: %s \n", yytext);
            }

{DIGIT}+"."{DIGIT}*        {
            printf( "Float: %s \n", yytext );
            }

main|int|char|if|else|for|while|break|continue|return        {
            printf( "Keyword: %s\n", yytext );
            }

{ID}        printf( "Identifier: %s\n", yytext );

"+"|"-"|"*"|"/"|">"|"<"|"="   printf( "Operator: %s\n", yytext );


","|";"|"("|")"|"["|"]"|"{"|"}"  printf( "Separator: %s\n", yytext );

"{"[^}\n]*"}"     /* eat up single line comments */

[ \t\n]+          /* eat up whitespace */

.           printf( "Unrecognized character: %s\n", yytext );

%%
main(){
yylex();
}
yywrap(void)
{
return 0;
}
```

Output:


C:\Windows\System32\cmd.exe
C:\Users\Prem\Desktop\6thSem\CSB353\lab2>FLEX lab2.l
C:\Users\Prem\Desktop\6thSem\CSB353\lab2>


C:\Users\Prem\Desktop\6thSem\CSB353\lab2\lex.yy.exe
main
Keyword: main
int
Keyword: int
a1
Identifier: a1
a
Identifier: a
A
Identifier: A
A12
Identifier: A12
10
Integer: 10
100.0
Float: 100.0
+
Operator: +
-
Operator: -
*
Operator: *
=
Operator: =
;
Separator: ;
,
Separator: ,