**BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI**

**DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION SYSTEMS**

**Compiler Construction (CS F363)**

**II Semester 2022-23**

**Compiler Project (Stage-2 Submission)**

**Coding Details**

**(April 12, 2023)**

**Group number \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_4\_\_\_\_\_\_\_\_\_\_\_\_(Write your group number here)**

*Instruction: Write the details precisely and neatly. Places where you do not have anything to mention, please write NA for Not Applicable.*

1. IDs and Names of team members ID:\_\_\_\_\_\_\_2020A7PS0033P\_\_\_\_\_\_\_\_\_Name:\_\_\_\_\_\_\_\_\_Rachit\_Agrawal\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ID:\_\_\_\_\_\_\_2020A7PS0971P\_\_\_\_\_\_\_\_\_\_Name:\_\_\_\_\_\_\_\_Deepam Desai\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ID:\_\_\_\_\_\_\_2020A7PS0123P\_\_\_\_\_\_\_\_\_\_Name:\_\_\_\_\_\_\_\_Aryan Desai\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ID:\_\_\_\_\_\_\_2020A7PS0083P\_\_\_\_\_\_\_\_\_\_Name:\_\_\_\_\_\_\_\_Jaysheel Shah\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ID:\_\_\_\_\_\_\_2020A7PS0979P\_\_\_\_\_\_\_\_\_\_Name:\_\_\_\_\_\_\_\_Ramakant Pandurang Talankar\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Mention the names of the Submitted files ( Include Stage-1 and Stage-2 both)

1\_\_AST.c\_\_\_\_\_\_\_\_\_\_\_\_ 7\_\_\_hash\_table.c\_\_\_\_\_ 13\_\_\_parser.c\_\_\_\_\_\_\_\_ 19\_symbol\_table\_def.h\_\_

2\_\_AST.h\_\_\_\_\_\_\_\_\_\_\_ 8\_\_\_hash\_table.h\_\_\_\_\_ 14\_\_\_parser.h\_\_\_\_\_\_\_ 20\_symbol\_table.c\_\_

3\_\_ASTdef.h\_\_\_\_\_\_\_\_\_\_\_\_ 9\_\_\_lexer.c\_\_\_\_\_\_\_\_\_\_\_ 15\_\_parserDef.h\_\_\_\_\_ 21\_symbol\_table.h\_\_\_\_

4\_\_driver.c\_\_\_\_\_\_\_\_\_\_\_\_ 10\_\_\_lexer.h\_\_\_\_\_\_\_\_\_\_\_ 16\_\_stack.c\_\_\_\_\_\_\_\_\_ 22\_tokenDef.h\_\_\_\_\_\_

5\_\_grammar.txt\_\_\_\_\_\_\_\_ 11\_\_\_lexerDef.h\_\_\_\_\_\_\_\_ 17\_\_stack.h\_\_\_\_\_\_\_\_ 23\_\_treeAdt.c\_\_\_\_\_\_\_\_

6\_\_hash\_table\_def.h\_\_\_\_ 12\_\_\_makefile\_\_\_\_\_\_\_\_\_ 18\_\_stackDef.h\_\_\_\_\_\_\_ 24\_treeAdt.h\_\_\_\_\_\_\_

25 \_\_\_\_treeAdtDEF.h\_\_\_\_ 26\_\_\_testcase1.txt\_\_\_\_\_ 27\_\_\_testcase2.txt\_\_\_\_\_ 28\_\_\_testcase3.txt\_\_\_\_\_

29\_\_\_testcase4.txt\_\_\_\_\_ 30\_\_\_testcase5.txt\_\_\_\_\_ 31\_\_\_testcase6.txt\_\_\_\_\_ 32\_\_\_testcase7.txt\_\_\_\_\_

33\_\_\_testcase8.txt\_\_\_\_\_ 34\_\_\_testcase9.txt\_\_\_\_\_ 35\_\_\_testcas10.txt\_\_\_\_\_ 36\_\_\_documentation.docx\_\_\_

1. Total number of submitted files: \_\_\_\_36\_\_\_\_ (All files should be in **ONE** folder named exactly as Group number)
2. Have you mentioned names and IDs of all team members at the top of each file (and commented well)? (Yes/ no) \_\_\_Yes\_\_\_\_ [Note: Files without names will not be evaluated]
3. Have you compressed the folder as specified in the submission guidelines? (yes/no)\_\_\_\_\_Yes\_\_\_\_\_\_
4. **Status of Code development**: Mention 'Yes' if you have developed the code for the given module, else mention 'No'.
   1. Lexer (Yes/No): \_\_\_\_\_\_\_\_\_Yes\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Parser (Yes/No):\_\_\_\_\_\_\_\_\_Yes\_\_\_\_\_\_\_\_\_\_\_\_
   3. Abstract Syntax tree (Yes/No):\_\_\_\_\_Yes\_\_\_\_\_\_
   4. Symbol Table (Yes/ No):\_\_\_\_\_\_Yes\_\_\_\_\_\_\_\_\_\_\_
   5. Type checking Module (Yes/No):\_\_\_\_\_\_\_\_\_No\_\_\_\_\_\_
   6. Semantic Analysis Module (Yes/ no):\_\_\_\_No\_\_\_\_\_(reached LEVEL \_\_\_\_ as per the details uploaded)
   7. Code Generator (Yes/No):\_\_\_\_\_No\_\_\_\_\_\_\_\_
5. **Execution Status**:
   1. Code generator produces code.asm (Yes/ No):\_\_\_\_\_\_\_\_\_No\_\_\_\_\_\_\_\_\_\_
   2. code.asm produces correct output using NASM for testcases (C#.txt, #:1-11): \_\_\_\_\_\_\_No\_\_\_\_\_\_\_
   3. Semantic Analyzer produces semantic errors appropriately (Yes/No):\_\_\_\_No\_\_\_\_\_
   4. Static Type Checker reports type mismatch errors appropriately (Yes/ No):\_\_\_No\_\_\_\_\_\_
   5. Dynamic type checking works for arrays and reports errors on executing code.asm (yes/no): \_\_\_\_\_\_\_\_\_No\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   6. Symbol Table is constructed (yes/no)\_\_\_Yes\_\_\_and printed appropriately (Yes /No):\_\_\_\_\_Yes\_\_\_\_\_
   7. AST is constructed (yes/ no) \_\_\_\_Yes\_\_\_\_and printed (yes/no) \_\_\_\_Yes\_\_
   8. Name the test cases out of 21 as uploaded on the course website for which you get the segmentation fault (t#.txt ; # 1-10 and c@.txt ; @:1-11):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_None\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. **Data Structures** (Describe in maximum 2 lines and avoid giving C definition of it)
   1. AST node structure\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_The data structure of the parse tree node is modified and attributes like syn, inh, list\_syn, list\_inh are added along with rule\_numbers in the AST node.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Symbol Table structure:\_\_\_\_\_The symbol table struct consist\_of hash\_array of size 53,parent of symbol table, the start scope , end scope, module\_name, nesting level.The hasharray is of type st\_entry which i the structure of name,type,its symbol\_table pointer,next entry,own symbol table pointer.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* 1. array type expression structure:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. Input parameters type structure:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  3. Output parameters type structure:\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  4. Structure for maintaining the three address code(if created) :\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Semantic Checks:** Mention your scheme NEATLY for testing the following major checks (in not more than 5-10 words)[ Hint: You can use simple phrases such as 'symbol table entry empty', 'symbol table entry already found populated', 'traversal of linked list of parameters and respective types' etc.]
   1. Variable not Declared :\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. Multiple declarations: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. Number and type of input and output parameters:\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. assignment of value to the output parameter in a function \_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   5. function call semantics:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   6. static type checking :\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   7. return semantics:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   8. Recursion :\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   9. module overloading:\_\_\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   10. 'switch' semantics :\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   11. 'for' and 'while' loop semantics: \_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   12. handling offsets for nested scopes:\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   13. handling offsets for formal parameters:\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   14. handling shadowing due to a local variable declaration over input parameters:\_\_\_\_\_Not implemented\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   15. array semantics and type checking of array type variables: \_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_

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* 1. Scope of variables and their visibility :\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. computation of nesting depth:\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Code Generation:
   1. NASM version as specified earlier used (Yes/no):\_\_\_\_\_\_\_\_\_\_No\_\_\_\_\_\_\_\_\_\_\_
   2. Used 32-bit or 64-bit representation:\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. For your implementation: 1 memory word = \_Not implemented\_\_(in bytes)
   4. Mention the names of major registers used by your code generator:

* For base address of an activation record: \_\_\_Not implemented\_
* for stack pointer:\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_
* others (specify):\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_
  1. Mention the physical sizes of the integer, real and boolean data as used in your code generation module

size(integer): \_\_\_Not implemented\_\_\_\_\_(in words/ locations), \_\_\_Not implemented\_(in bytes)

size(real): \_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_(in words/ locations), \_\_Not implemented\_\_(in bytes)

size(boolean): \_\_\_Not implemented\_\_\_\_\_(in words/ locations), \_\_Not implemented\_(in bytes)

* 1. How did you implement functions calls?(write 3-5 lines describing your model of implementation) \_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* 1. Specify the following:
     + Caller's responsibilities:\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
     + Callee's responsibilities:\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. How did you maintain return addresses? (write 3-5 lines): \_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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* 1. How have you maintained parameter passing? How were the statically computed offsets of the parameters used by the callee? \_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  2. How is a dynamic array parameter receiving its ranges from the caller? \_\_\_Not implemented\_\_\_\_
  3. What have you included in the activation record size computation? (local variables, parameters, both): \_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  4. register allocation (your manually selected heuristic) :\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  5. Which primitive data types have you handled in your code generation module?(Integer, real and boolean):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  6. Where are you placing the temporaries in the activation record of a function? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Compilation Details**:
   1. Makefile works (yes/No):\_\_\_Yes\_\_\_\_\_
   2. Code Compiles (Yes/ No):\_\_\_Yes\_\_\_\_\_\_\_
   3. Mention the .c files that do not compile:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_None\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   4. Any specific function that does not compile:\_\_\_\_\_None\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   5. Ensured the compatibility of your code with the specified versions [GCC, UBUNTU, NASM] (yes/no)\_\_\_\_\_Yes\_\_\_
2. Execution time for compiling the test cases [lexical, syntax and semantic analyses including symbol table creation, type checking and code generation] :
   * 1. t1.txt (in ticks) \_\_\_\_\_\_\_1008\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and (in seconds) \_\_\_\_\_\_\_0.0001\_\_\_\_\_\_\_\_\_\_\_\_\_
     2. t2.txt (in ticks) \_\_\_\_\_\_\_\_\_\_\_\_\_1405\_\_\_\_\_\_\_\_ and (in seconds) \_\_\_\_\_\_\_\_0.00014\_\_\_\_\_\_\_\_\_\_\_\_
     3. t3.txt (in ticks) \_\_\_\_\_\_\_1810\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and (in seconds) \_\_\_\_0.00018\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
     4. t4.txt (in ticks) \_\_\_\_\_\_\_1538\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and (in seconds) \_\_\_\_\_\_\_0.00015\_\_\_\_\_\_\_\_\_\_\_\_\_
     5. t5.txt (in ticks) \_\_\_\_\_\_\_2873\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and (in seconds) \_\_\_\_\_\_\_0.00028\_\_\_\_\_\_\_\_\_\_\_\_\_
     6. t6.txt (in ticks) \_\_\_\_\_\_\_3550\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and (in seconds) \_\_\_\_\_\_\_\_\_0.00035\_\_\_\_\_\_\_\_\_\_\_
     7. t7.txt (in ticks) \_\_\_\_\_\_\_4775\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and (in seconds) \_\_\_\_\_\_\_\_0.000478\_\_\_\_\_\_\_\_\_\_\_\_
     8. t8.txt (in ticks) \_\_\_\_\_\_\_4497\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and (in seconds) \_\_\_\_\_0.00045\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
     9. t9.txt (in ticks) \_\_\_\_\_\_\_4275\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and (in seconds) \_\_\_\_\_\_0.000427\_\_\_\_\_\_\_\_\_\_\_\_\_\_
     10. t10.txt (in ticks) \_\_\_\_\_\_\_\_1406\_\_\_\_\_\_\_\_\_\_\_\_\_ and (in seconds) \_\_\_\_\_\_0.00014\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. **Driver Details**: Does it take care of the **TEN** options specified earlier?(yes/no):\_\_\_Yes\_\_\_\_\_
4. Specify the language features your compiler is not able to handle (in maximum one line)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_All Features Handled\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Are you availing the lifeline (Yes/No): \_\_No\_\_\_\_\_\_
2. Write exact command you expect to be used for executing the code.asm using NASM simulator [We will use these directly while evaluating your NASM created code]

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Not implemented\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Strength of your code**(Strike off where not applicable): (a) correctness (b) completeness (c) robustness (d) Well documented (e) readable (f) strong data structure (f) Good programming style (indentation, avoidance of goto stmts etc) (g) modular (h) space and time efficient
2. Any other point you wish to mention: \_\_\_\_No\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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1. Declaration: We, \_\_\_\_Rachit Agrawal, Deepam Desai, Aryan Desai, Jaysheel Shah, Ramakant Talankar\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (your names) declare that we have put our genuine efforts in creating the compiler project code and have submitted the code developed only by our group. We have not copied any piece of code from any source. If our code is found plagiarized in any form or degree, we understand that a disciplinary action as per the institute rules will be taken against us and we will accept the penalty as decided by the department of Computer Science and Information Systems, BITS, Pilani. [Write your ID and names below]

ID:\_\_\_\_\_\_\_2020A7PS0033P\_\_\_\_\_\_\_\_\_Name:\_\_\_\_\_\_\_\_\_Rachit\_Agrawal\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ID:\_\_\_\_\_\_\_2020A7PS0971P\_\_\_\_\_\_\_\_\_\_Name:\_\_\_\_\_\_\_\_Deepam Desai\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ID:\_\_\_\_\_\_\_2020A7PS0123P\_\_\_\_\_\_\_\_\_\_Name:\_\_\_\_\_\_\_\_Aryan Desai\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ID:\_\_\_\_\_\_\_2020A7PS0083P\_\_\_\_\_\_\_\_\_\_Name:\_\_\_\_\_\_\_\_Jaysheel Shah\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

ID:\_\_\_\_\_\_\_2020A7PS0979P\_\_\_\_\_\_\_\_\_\_Name:\_\_\_\_\_\_\_\_Ramakant Pandurang Talankar\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_12th April’23\_\_\_\_\_ Group number \_\_\_\_\_\_\_\_\_4\_\_\_\_\_\_\_\_

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Should not exceed 6 pages.