**SOFTWARE CONSTRUCTION (PRACTICALS) – SPRING 2013**

**EXPERIMENT 1 – INTRODUCTION TO COMPILING AND READING**

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| **DATE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_** | | **Students Names: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | |
| **Marks Obtained: \_\_\_\_\_\_\_\_** | | **COURSE: BESE 16 \_\_\_\_\_** | |
| **Deadline: 1400 hrs 4th Feb 2013** | | **Instructor: Engr. Umar Mahmud** | |
|  | **Instructions**   * This is Syndicate effort. Only **TWO** students per syndicate are allowed. Write your remarks next to the space provided. * Plagiarism is strictly forbidden. * Submit hard copy of the report before deadline. Marks will be deducted for late submissions. | |  |
| 1. | **Objectives:**   1. Learning the compilation process 2. Reading and Writing files 3. Reading URLs | |  |
| 2. | **Time Required:** 3 hrs | |  |
| 3. | **Programming Language:** Java/C++/C#/Assembly language | |  |
| 4. | **Software Required:**   1. Windows OS 2. C++/Java Compiler 3. MASM | |  |
| 5. | **Compiler:** Complier is software that transforms source code written in a programming language to a machine readable code. For example the code   1. B80200 is a machine code that is equivalent of MOV AX,2 2. Similarly 050400 is a machine code that is equivalent of ADD AX,4 3. The C++ style code for the same code would be int x= 2+4; | |  |
| 5. | Using Assembly language, write a code that adds 2 and 4 and displays the result. Create the code file, and compile the file into an executable using the MASM tool. Write the steps of compilation for MASM. | | (1) |
| 5. | Discuss why do you think a compiler is needed? | | (1) |
| 6. | Compiler steps are : -  http://people.aero.und.edu/%7Ewenchen/course/6210/figure/system.gif | |  |
| 7. | Write one compiler for the following languages.   1. C++, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. Java, \_\_\_\_\_\_\_\_\_\_\_\_\_ 3. Assembly language, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | (1) |
| 8. | **Reading Files Example** | |  |
| 9. | **Reading Files:** Create a TXT file using Notepad/WordPad and insert the following data in separate lines: -   1. Your Full Name 2. Date of birth 3. Hometown 4. Email address   Display the contents of the only the text file here : - | | (1) |
| 10. | Write code for Point 9 by creating a function that displays your first name and the email address only. Write the function and the output here: - | | (1) |
| 11. | Update the code in Point 10 by creating a function that displays the total number of characters, the total number of blank spaces and the total number of lines in the text file. Write the attributes here: - | | (1) |
| 12. | **Reading a URL:** To read from a URL a Java class will be used.The code is as under: -  **import java.net.\*;**  **import java.io.\*;**  public class URLConnectionReader {  public static void main(String[] args) throws Exception {  URL oracle = new URL("http://www.w3schools.com/xml/note.xml");  URLConnection yc = oracle.openConnection();  BufferedReader in = new BufferedReader(new InputStreamReader(  yc.getInputStream()));  String inputLine;  while ((inputLine = in.readLine()) != null)  System.out.println(inputLine);  in.close();  }  } | |  |
| 13. | Create a program that reads from a URL and display in console. Discuss what kind of information is displayed.  (<http://docs.oracle.com/javase/tutorial/networking/urls/readingWriting.html> ) | | (1) |
| 14. | **Writing a File:** Write a function that reads two strings compares their length and writes the longer string in another file with file name **yourname.txt**. Write the function here as well as show contents of the output file as screen shot here. | | (1) |
| 14. | What did you learn in this experiment? | | (2) |