بِسْمِ اللَّهِ الرَّحْمَٰنِ الرَّحِيمِ

Name: Khalil Rahman f/name: M Arif chapter one homework

This homework is directed by ustad Mohamad Hanif Garrani

Class:1st department: ISE

1. A program must be converted to _____ language to be executed by a computer.

a. Assembly

b. Machine

c. High level

d. Very high level

2. _____ is a Logical programming language.

a. PROLOG

b. Python

c. C#

d. Java

3. The program written only using 0's and 1's is

a. PHP

b. High level

c. Python

d. Machine

4. The founder of Python is

a. Charles Babbage

b. Guido van Rossum

c. Dennis Ritchie

d. Larry Wall

5. Python is a compiled language.

a. True

b. False

c. Can't say

d. None of these

6. This programming paradigm emerged to remove the reliance on the GOTO statements.

a. Structured

b. Object-oriented

c. Logical

d. Functional

7. Which Python library is popularly referred to as the HTTP library written for humans.

a. Receive

b. Requests

c. Sockets

d. Send

8. In which phase of SDLC does the software developer analyses whether software can be prepared to fulfill all the requirements of the end user?

a. Design

b. Development

c. Testing

d. Planning

9. This license allows a patent grant for derivative works.

a. BSD License

b. Apache License

c. MIT License

d. CC License

10. A group of people maintain exclusive control over the source code of a software. Such software is called

a. Freeware

b. Shareware

c. Proprietary

d. Adware

Review Questions

1. What is a programming language?

   . A program ming language is a computer language engineered to communicate instructions to a machine. Programs are created through programming languages to control the behavior and output of a machine through accurate algorithms, similar to the human communication process.

2. Briefly explain the steps to install Anaconda.

   Anaconda is a free and open source distribution of the Python programming language for data science and machine-learning related applications such as large-scale data process ing, predictive analytics, and scientific computing, that aims to simplify package man agement and deployment. Package versions are managed by the package management system conda, which makes it quite simple to install, run, and update complex data science and machine learning software libraries like Scikit-learn, PyTorch, TensorFlow, and SciPy. Anaconda Distribution is used by over 6 million users, and it includes more than 250 pop ular data science packages suitable for Windows, Linux, and MacOS. The steps described here work on the Windows 10 OS. Step 1: Go to the link https://www.continnum.io/downloads. You have the option to download the 32-bit or the 64-bit version of either Python 2.7 or Python 3.6 sup ported Anaconda distribution. At the time of writing this book, Anaconda sup ported Python 3.6 version. As and when a new version of Python is released, Anaconda distribution will be updated to newer releases. In this book 64-bit Anaconda distribution supporting Python 3.6 is used to execute programs, so download the same version. Step 2: Click on the executable file of Anaconda Python distribution which you have downloaded and the setup screen will start loading. Step 3: You will get a welcome screen as shown in FIGURE 1.5. Click on Next button.

3. Describe the steps to install PyCharm.

   PyCharm is an Integrated Development Environment (IDE) used for Python programming language. It is developed by the Czech company JetBrains. It provides code analysis, a graphical debugger, an integrated unit tester, integration with version control systems and supports web development with Django web framework. PyCharm is cross-platform, with the availability of Windows, MacOS and Linux ver sions. The Community Edition is released under the Apache License and there is also Professional Edition released under a proprietary license with added features like sci entific tools, web development, Python Web Frameworks, Database and SQL support. PyCharm is designed by programmers, for programmers, to provide all the tools you need for productive Python development. The steps described here works on the Windows 10 OS. Step 1: Go to the link https://www.jetbrains.com/PyCharm/download/. You have the option to download either the PyCharm Professional Edition or the PyCharm Community Edition. If you have purchased a license for Professional Edition then go for it. Otherwise, you can download the Community edition which will suffice most of our requirements. All the programs in this book have been executed using PyCharm Community Edition IDE, so download the same edition. Step 2: Click on the executable file which you have downloaded. You will be pre sented with the PyCharm Community Edition Setup screen. Click on Next button. Step 3: Now you will be presented with Choose Install Location screen. Go with the default destination folder to

install PyCharm Community Edition. Click on Next button. Step 4: Select all the check boxes in the Installation Options screen except for the 32-bit launcher check box (since Windows 10 is a 64-bit OS, you don't need 32-bit launcher) and click on Next (FIGURE 1.10)

4. Outline the advantages and disadvantages of machine language.

   The main advantage of machine language is that it can run and execute very fast as the code will be directly executed by a computer and the programs efficiently utilize memory. Some of the disadvantages of machine language are, • Machine language is almost impossible for humans to use because it consists entirely of numbers. • Machine language programs are hard to maintain and debug. • Machine language has no mathematical functions available. • Memory locations are manipulated directly, requiring the programmer to keep track of every memory location.

5. Why do we need programs? Comment on this.

   Program is the most important part of technology.

6. Outline the advantages and disadvantages of high-level language.

Advantages • Easier to modify, faster to write code and debug as it uses English like statements. • Portable code, as it is designed to run on multiple machines. A compiler is a system software program that transforms high-level source code written by a software developer in a high-level programming language into a low-level machine language. The process of converting high-level programming language into machine language is known as compilation. Compilers translate source code all at once and the computer then executes the machine language that the compiler produced. The gener ated machine language can be later executed many times against different data each time. Programming languages like C, C++, C# and Java use compilers. Compilers can be.

7. Give a brief explanation of the history of Python.

The history of the Python programming language dates back to the late 1980s. Python was conceived in the late 1980s and its implementation was started in December 1989 by Guido van Rossum (FIGURE 1.2) at CWI in the Netherlands as a successor to the ABC programming language capable of exception handling and interfacing with the Amoeba operating system. Van Rossum is Python's principal author, and his continuing central role in deciding the direction of Python is reflected in the title given to him by the Python community. He is the "Benevolent Dictator For Life" (BDFL), which means he continues to oversee Python devel opment and retains the final say in disputes or arguments arising within the community

8. Differentiate between Interpreter and Compiler.

   Compiler read one part of code but interpreter read the code line by line.

9. Mention disadvantages of Assembly language.\

   Machine language is extremely difficult for humans to read because it consists merely of patterns of bits (i.e., 0's and 1's). Thus, programmers who want to work at the machine language level instead usually use assembly language, which is a human-readable nota tion for the machine language. Assembly language replaces the instructions represented by patterns of 0's and 1's with alphanumeric symbols also called as mnemonics in order to make it easier to remember and work with them including reducing the chances of making errors. For example, the code to perform addition and subtraction is,

10. Discuss various steps involved in the software development life cycle.

    In the fist the coding print the result in the first and is was very heavy to work on it.

11. Give a brief description of open source software.

    The term "Open Source" refers to something people can modify and share because its design is publicly accessible. Open source software is software with source code that any one can inspect, modify, and enhance. "Source code" is the part of the software that most computer users don't ever see; it's the code computer programmers can manipulate to change how a piece of software, a "program" or "application" works. Programmers who have access to a computer program's source code can improve that program by adding

12. Explain the different types of licenses under which open source software can be released.

    Attribution. All Creative Commons licenses require that others who use your work in any way must give you credit the way you request, but not in a way that suggests you endorse them or their use. If they want to use your work without giving you credit or for endorsement purposes, they must get your permission first. Beyond that, the work can be modified, distributed, copied and otherwise used. Share Alike. You let others copy, distribute, display, perform, and modify your work, as long as they distribute any modified work on the same terms. Non-Commercial. You let others copy, distribute, display, perform and modify and use your work for any purpose other than commercially unless they get your permission first. No Derivative. You let others copy, distribute, display and perform only original copies of your work. If they want to modify your work, they must get your permission first.