Amadou Bah CS1302 Homework #2 09/06/2016

Chapter 6:

4. Machine starts with its program counter containing A6

|  |  |
| --- | --- |
| Address | Contents |
| A0 | - |
| A1 | 0 |
| A2 | X |
| A3 | Y |
| A4 | W |
| A5 | C2 |
| A6 | 10 |
| A7 | A1 |
| A8 | 11 |
| A9 | A2 |
| B0 | 12 |
| B1 | A3 |
| B2 | 13 |
| B3 | A4 |
| B4 | B1 |
| B5 | A5 |
| B6 | 54 |
| B7 | 32 |
| B8 | 34 |
| B9 | A0 |
| C0 | C0 |
| C1 | 00 |
| C2 | 54 |
| C3 | 21 |
| C4 | 34 |
| C5 | A0 |
| C6 | C0 |
| C7 | 00 |

6. The declarative paradigm already has a predefined algorithm used for problem solving, thus only requires a description of the problem from the user. On the other hand, in the imperative paradigm, where no predefined algorithm is present, the user is required to provide a sequential set of instruction to solve a given problem. The functional paradigm connects multiple smaller units called functions, where one take input from another’s output, to solve a problem. Lastly, the object-oriented paradigm uses units called objects. These objects are well defined entities, with unique attributes, and behaviors; they perform tasks based on these features.

17. The single equal sign (=) is used for assignment such as a value to a variable, whereas the double equal sign (==) is used for comparison.

19.

x = 2

while (x < 8):

...

x = x+1

22.

W = 5

switch (W)

{

case 5 :

Z = 7

break;

case 6 :

Y = 7

break;

case 7 :

X = 7

break;

}

Chapter 7:

15. The goal in coupling is to reduce dependence between smaller divisions (modules) in a large program, and declaring variables public or private determines the degree of this dependence. Private variables decrease dependence, whereas public increases. This is because with public variables, one would find it difficult to identify how the different modules interact with each other; thus, making private variables the preferable option in coupling.

21. Unified Modeling Language or UML is a diagraming technique that depicts the essential features of a program. The term Modeling in UML refers to how this technique uses a graphical approach to outline not only characteristics of and relationships among classes in a complex program, but dependencies and interaction as well.