



WORKSHEET 14

School: Ba Sangam College
Subject: Computer Studies

Year / Level: 12
Name of Student: _____

Strand	3 – Programming
Sub strand	3.1 Steps involved in programming
Content Learning Outcome	Describe six steps involved in programming

STEP 3 PROGRAM CODE

Coding is the actual writing of the program by using a Programming language. Here, you use the logic that you develop in the program design step to actually write the program i.e. you write the program using a pencil and paper or you type it using a keyboard – forming the letters, numbers and symbols that make up the program.

A Good Program

Some qualities of a good program are:

- It should be reliable i.e. it should work under most conditions.
 - It should catch obvious and common input errors.
 - It should be well documented and understandable by programmers other than the person who wrote it.
- The best way to code an effective program is to write a structured program using the different logic structures.

Testing Process

Several methods have been devised for finding and removing syntax and logical errors. They are as follows:

- a. Desk Checking** – a programmer proof reads a printout of the program, checking line by line for syntax and logic errors and making the necessary corrections.
- b. Manual Testing with Sample Data** - Both correct and incorrect data is run through the program – manually, not with a computer, to test for correct processing results.
- c. Attempt at Translation** – running a program using a translator program to identify syntax errors.
- d. Testing Sample Data on the Computer** - Sample data is used to test the correct execution of each program statement to check if the correct outputs are delivered by the program.
- e. Testing by a Select Group of Potential Users** - This is sometimes called beta testing. This is usually the final step in testing a program where potential users (skilled) try out the program and provide feedback. These feedbacks are then used

y the programmer to make those important and final changes to the program.

Language

Another important decision to make in this step is the selection of the programming language. There are many programming languages for microcomputers – the more popular ones have been BASIC, Pascal, C# and the more recent and currently the popular choice for programmers, C++, Java, JavaScript, Visual Basic, and Python. It is usually the programmers' choice of what programming language he is going to use.

STEP 4 PROGRAM TEST

In this step, the program is debugged – tested for syntax and logic errors and these errors corrected

Bugs

A **bug** is an error that stops your code working as expected. There are **two** main types of bug that can occur in a program:

- **Syntax error**

This happens when the rules of the language have been broken, eg by mis-spelling a command. Syntax errors usually stop the code from running. Languages like Scratch provide code in ready-written blocks, so you won't make many syntax errors.

- **Logic error**

This means your code runs, but doesn't do what you expect. Unfortunately, it's still possible to make logic errors in Scratch.

Finding and fixing these errors in a program is known as **debugging**.

Activity

1. Discuss two qualities of a good programmer (2 marks)

2. List 5 methods of finding and removing syntax and logic errors (5marks)

3. What is a bug? (2marks)

4. Differentiate between syntax and logic errors (2marks)

5. What is debugging? (2marks)
