

NAME: EKUNDAYO OLUWATOBI FAVOUR
MATRIC NO: 18/ENG01/010
DEPARTMENT: CHEMICAL ENGINEERING
COURSE CODE: ENG 224
COURSE TITLE: STRUCTURED COMPUTER PROGRAMING
ASSIGNMENT ANSWERS

1.

- Conceptualization
This involves having a concept or an idea on how to solve a problem and in this case, we are to develop the software that interacts with the irrigation system of the farm.
- Specification
Here, we divide the system into modules, we can divide it into the hardware or the software module. The hardware module involves the physical items we use in creating effects in the machine while the software module constitutes the instructions that make up the effects of the machine. The software and hardware modules will be given in number 2 below
- Design
The designing of a system involves breaking the step by step method of how the system will flow. We can use several tools, but the frequently used tools are; algorithm, flowchart and state diagram.
- Implementation
This is when we carry out the application (writing out the codes). We perform the software using a programming language either the high level language or the low level language.
- Testing and debugging
This basically deals with testing the software and removing errors.
- Release and update which is based on the user feedbacks.

2. Hardware

- Sprinkler
This is a device to irrigate agricultural crops, lawns, landscapes e.t.c. They are also used for the cooling of airborne dust. With this, we are able to apply water to the a very large portion of the farmland.
- Pipe system

This is a system of pipes used to convey water from one area of the farmland to another area.

- Sensor

We have the soil moisture sensor and the soil temperature sensor. The soil moisture sensor is to measure the volumetric water content in the soil while the soil temperature sensor is to measure the degree of hotness or coldness of the soil.

Software

- GUI (Graphical User Interface)

We have the pushbutton, text button, dialog box e.t.c. These are various commands that are to issue or assign various functions to the software.

- Timer

This is a specialized type of clock used for measuring specific time intervals. There are two types of timer, one which counts upwards from zero and another which counts downwards from a specified time interval.

- Error detection

This refers to the techniques used to detect errors in the software. Error detection minimizes the probability of passing incorrect data in the software.

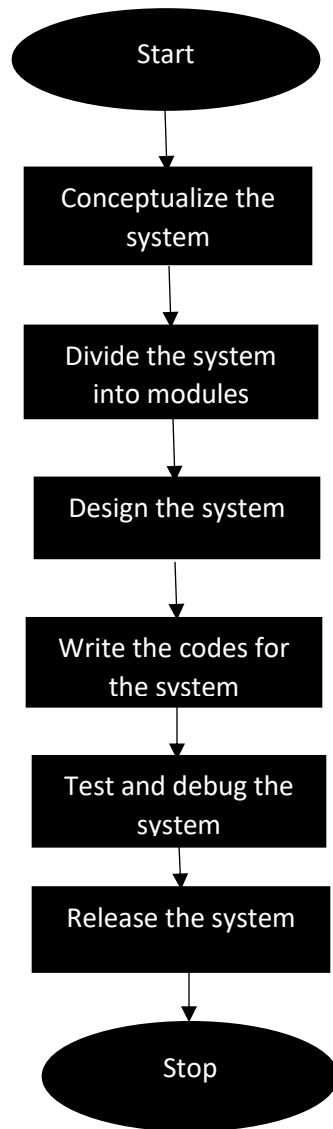
- Access control

This is a security technique that regulates who or what can view or use the software resources in a computing environment.

3. (a) Algorithm

- Start
- Conceptualize the system
- Divide the system into modules
- Design the system
- Write the codes for the system
- Test and debug the system
- Release the system
- Stop

(b) Flowchart



4.

