Lesson Plan

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CTE Area: Programming and Web Development
Unit of Instruction: Flow Charting
Topics of Instruction: Flow Charts

Standards/Competency:

Massachusetts Vocational Technical Education Framework
Information Technology Services Occupational Cluster
Programming & Web Development

2.B.03.02   Design program logic using graphical techniques such as flow charts or storyboards.

Goals:

The goal of this lesson is to familiarize students with the terminology and symbols of how charting and to have them develop the ability to develop simple flow charts.

Objectives:

- Students will be able to identify flow chart symbols.
- Students will be able create a flow chart to represent a common, everyday activity.

Vocabulary:
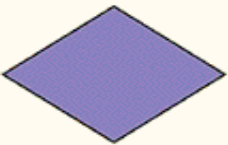
variable	data type	procedure	parameter
conditional	iteration	flowchart	pseudocode

Content:

Name	Symbol	Use in flowchart
Oval		Denotes the beginning or end of a program.
Flow line	⟶	Denotes the direction of logic flow in a program.
Parallelogram		Denotes either an input operation (e.g., INPUT) or an output operation (e.g, PRINT).
Rectangle		Denotes a process to be carried out (e.g., an addition).
Diamond		Denotes a decision (or branch) to be made. The program should continue along one of two routes (e.g., IF/THEN/ELSE).

Activity:

Students will grouped in pairs for the flow chart activity. Each group will be given one of the following tasks for which they must complete a flowchart.

- Self-checkout at the supermarket
- Making a sandwich
- Doing a load of laundry
- Drawing a flowchart
- Taking a picture
- Cleaning a bedroom.

Teaching Strategies: After group work, students will present their flowcharts for evaluation by the class. Independent work will be given for homework.

Assessment Methodology:

Formative assessments are in the form of Socratic questions that are asked during the introduction of material and also by evaluation of student developed flow charts.

Resources:

The following materials are required for the delivery of this lesson:
- Computer loaded with Microsoft PowerPoint connected to an LCD projector.
- Flow Chart PowerPoint Presentation

References:

The following websites:

How-To Site: http://asq.org/learn-about-quality/process-analysis-tools/overview/flowchart.html
Create Flow Charts Online: https://www.draw.io/