

## Appendix 1 - Basic Flowchart Activities

The following activities are the basic SpeedCode functions:-

- **To set the contents of a variable** – set the contents of a variable with a fixed value of your choice.
- **To enter some data into a variable** – to enter some data into a specified variable..
- **To display the contents of a variable** – to display the contents of the required variable.
- **To copy the contents of a variable** – to copy the contents of a (source) variable to another (target) variable.
- **To display a note** – to display the contents of a note.
- **To enter a password** – to enter a password.
- **To enter data using a menu** – there are three basic menu types.
  - **Basic fixed text menu** – fixed contents for display, from which a selection is made.
  - **Basic menu fed by a list of data** – the data for this menu type is not fixed but is generated by the system during normal operation.
  - **Active menu** – this menu type appears like a basic menu, but the operator, by clicking on any selected line, may activate either a supplementary fixed menu, or, enter some data manually, or, implement the “smart” contents of a flowchart as previously created by the designer. Every line of the active menu can have it’s own individual properties. The operator has no awareness of what is happening in the background but simply interacts with the system to supply and read information.
- **To enter/run a formulae** – to specify the contents of a formulae. The data is contained within numeric variables that are connected within the formulae by a family of arithmetic operators (+, -, \*, /, square root, etc, etc).
- **To compose/run a block of text** – this flowchart activity allows the designer to create the layout of a block of text, based on any combination of run time data (contained in variables) with sections of text, including punctuation.
- **To print a report script** – to define the name of a, previously written script, for printing. SpeedCode report scripts are able to interact with run time data such as the contents of variables, as well as Multi Function Menus (which are spreadsheet like activities). SpeedCode report scripts also have the ability to make decisions within themselves! – which means a huge amount off customisation is available.
- **Data type conversion** – to convert one variable type to another (eg, number to text).
- **File handling functions** – to generate external text files on your hard drive, These may contain written documents or to transfer data to external software packages.
- **List handling functions** – lists may be fixed but are usually generated during normal operation of your program. There are many functions to help you handle lists.
- **String handling functions** – strings of text can be any alphanumeric string of characters, For example “ABC”, “TY45q”, etc. There are many functions to help you handle strings.
- **Time and date functions** – time and date handling functions
- **Select and call an operation flowchart** – to select and call an operation flowchart. An operation flowchart is one that is associated with a specific manufacturing operation, machine tool or labour resource
- **Call a global flowchart** - to call a global flowchart from any position within the SpeedCode flowchart system.

## Appendix 2 - Intermediate Flowchart Activities

The following activities are of intermediate power:-

- **Comprehensive external database management** - several flowchart activities allow you to fetch, update, insert, or delete records from an external database, such as MS Access.
- **Multi function menu group (MFM)** – these powerful flowchart functions actually consists of a family of activities that work together to provide an interactive data display and entry sub-system. When displayed on the screen an MFM consists of three main sections:-
  - **Spreadsheet style rows data display** – this section consists of rows of data displayed to the operator.
  - **A menu of actions** – superimposed over the spreadsheet, this menu consists of any number of titles, each linked to its own flowchart, which allows the operator to select, and implement, some action that may be required
  - **A summary display of information** - superimposed over the spreadsheet, this menu like display shows any information that the designer requires
- **Lookup tables** – SpeedCode contains a system of lookup tables, used to hold information that rarely changes, such as technical data about products, etc.

### **Appendix 3 - Advanced Flowchart Activities**

PERT Planner – this single cell, planning flowchart activity performs a **critical path analysis** on the plan defined by the designer or operator, and is a complete PERT planning system. The critical path is the time taken to perform a sequence of flowcharts at run time. This duration is likely to vary from job to job because each job may well result in a different route through the flowcharts, or, different data being assigned. This duration may be in a variety of time units e.g. weeks, days, hours, etc, and may be used to plan out projects as well as to calculate product delivery times, etc. The original plans may be created by either the designer or the operator.

- **Project planning**
- **Delivery times for complex customised products**
- **Materials scheduling**

In reality, this system could be designed from scratch with SpeedCode flowcharts, but because its functionality is very common to many people it makes sense to provide it, ready-made, as a single flowchart activity cell. This is obviously immensely powerful.

## **Appendix 4 – Planned Enhancements**

The following, very powerful flowchart activities are currently under design. In reality, all these systems could be designed from scratch with SpeedCode flowcharts, but because their functionality is very common to many people it makes sense to provide a ready made range of these commonly used functions, each as a single flowchart activity cell. They each have properties that can be set by the designer, and each may be called in many different situations and ways. They all support the regular SpeedCode flowcharting system so that they may each be further customised by using your own purpose designed flowcharts.

- **Order/Order Lines tree structure** – this single cell flowchart activity is a fully functional order/order line tree. From this the operator may add new orders and order lines, or view/modify/update/delete any existing orders/order lines.
- **Stock Management** – this single cell flowchart is a fully functional stock management system. From this the operator may manage the stock levels for all standard parts and materials and their allocation.
- **Purchase Orders advisor** – this single cell flowchart activity presents the operator with a purchase orders advisor. This system gathers information from orders, stock management and planning (as described above); the advisor then creates a list, and schedule, of required materials for manufacturing. This list is then interactively formed into a list of suggested purchase orders ready to be passed to your purchasing department.

## Appendix 5 –Decisions

**Decision** cells in SpeedCode are incredibly powerful. They allow you to build true decision making abilities into your program so different routes can be taken through your program, depending on what information you enter.

For example, a **decision** cell might be “is the length greater than 500mm?”. SpeedCode will examine the contents of the variable called “LENGTH” and if it is greater than 500mm then SpeedCode will perform the appropriate activities, whereas if the length is less than 500mm then a different set of activities will be performed.

There are three different types of **decision** available:-

**If condition is true then do this else do something else**

Examples-

**If COLOUR = Red is true then ..... else .....**

In this case if the colour is Red then the appropriate activities for Red will be used, but if the colour is not red then another route will be taken

**If LENGTH > 500mm is true then ..... else .....**

In this case if the length is greater than 500mm then the appropriate activities will be used, but if the length is not greater than 500mm then another route will be taken

**Do while condition is true**

Example-

**Do while DEPTH < 100mm is true**

In this case the depth (eg off a hole being dug) is continuously being measured. The activities will be continuously be repeated (keep digging with the shovel) until the correct depth has been reached.

**Do until condition is true**

Example-

**Do until DEPTH = 100mm is true**

This case is slightly different to the “Do while” decision in that the hole is continuously being dug until the final depth of 100mm is reached.

These three types of **decision** cells are so flexible that you will find they cover all of the decision-making that your flowcharts require.

## Appendix 6 - Data and Variables

- Information, or data, flows throughout SpeedCode by a system of variables. For example, a variable called “COLOUR” might contain the value “Red”.
- The values contained within these variables could have been inserted using many of the SpeedCode **Activities**, such as selection from a menu, manual entry from an operator, or fetched from a lookup table or database.

