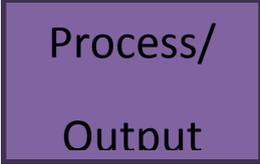
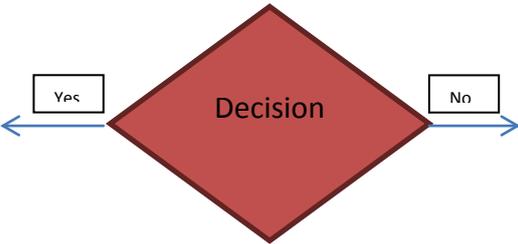


How to create a Flow Chart

Welcome to this theoretical tutorial on **MooICT.com**. In this tutorial we will have a detailed look at the flow chart and how to make one. There are probably more than a million tutorials on this online and sure there are many more to come. We are not aiming to get a PHD in flow chart design so we will keep this simple.

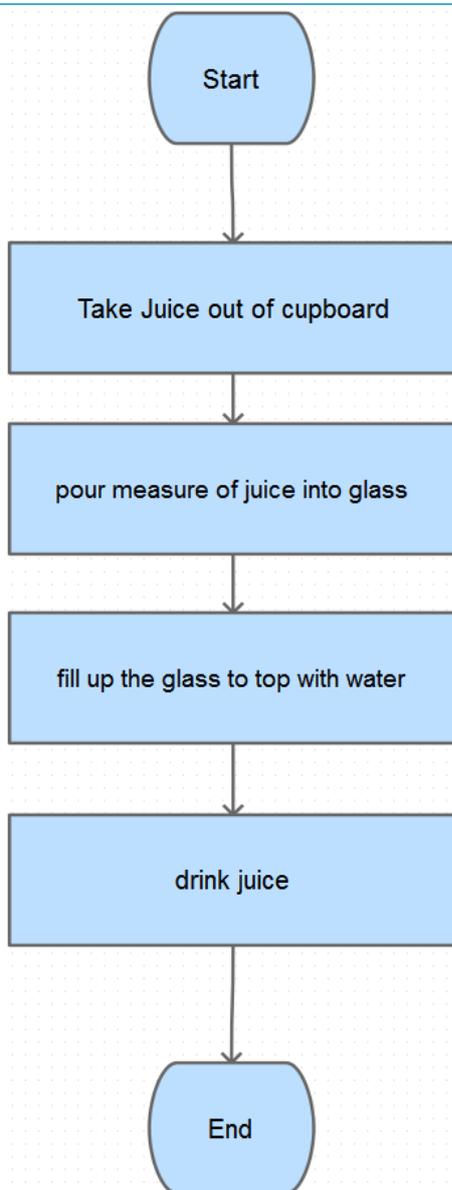
A flow chart has some very simple shapes which are used to visualise a project. Now flow charts are created for HUMANS not for software so we will look at this in detail to ensure we understand and not the machines.

Shape	Description
	This is the start and end ICON in flow charts. In technical terms it's called the terminal. Now on top of the chart you will see the start icon and end of the project will be end one. This icon identifies where the program is starting and where it's ending. All the logic will go between it.
	This is the process icon. Now in this shape it identifies if there is any machine process happens before the next move for example if a user clicks calculate then the process will be do calculation and display result.
	This shape identifies the input from user. So for example we say left button pressed → character move left and so on. So any interaction with the user will be identified in this shape. When learning flow charts this shape doesn't get used often so don't be surprised if you don't see this one around some of the diagrams. Its normal.
	This is the decision shape. In this shape we also have a little extra with it. Just like every decision we made we can think to either do it or not do it. Same here, we check if that decision has been taken then YES or it hasn't then NO. Now since it's a flow chart the information must flow to the next segment so we have to designate some instructions once a decision was reached. For example its raining outside YES take an umbrella or its raining outside NO go outside 😊

Now that we are done with the shapes explanation lets look at some examples here

Example 1

How to make some juice



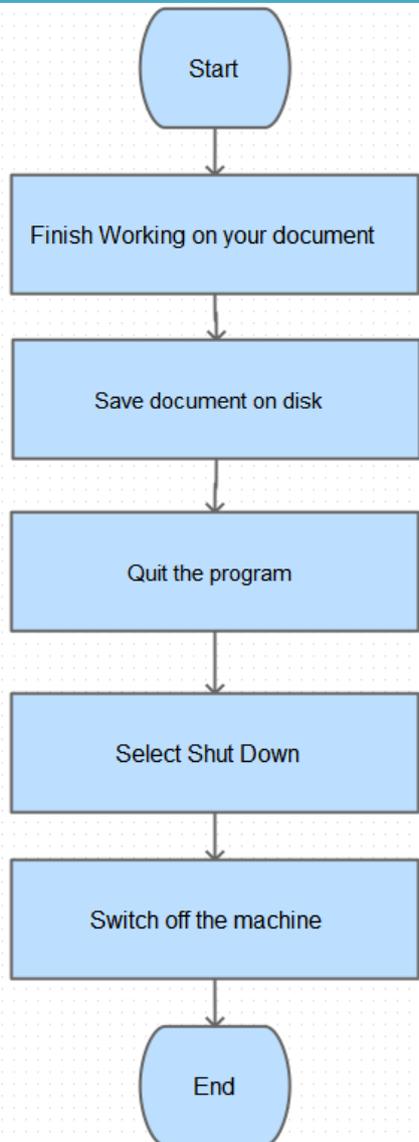
In this flow chart it's showing the process of making juice at home.

1. Start
2. Take juice out of cupboard
3. Pour the juice into glass
4. Fill up glass to top with water
5. Drink juice
6. End

This is a very straight forward example of flow chart. Now you can build a simple program that does this and best part is there is no user interaction so each time the program starts it drinks juice and end. Nice

Example 2

Steps to take before shutting down the pc

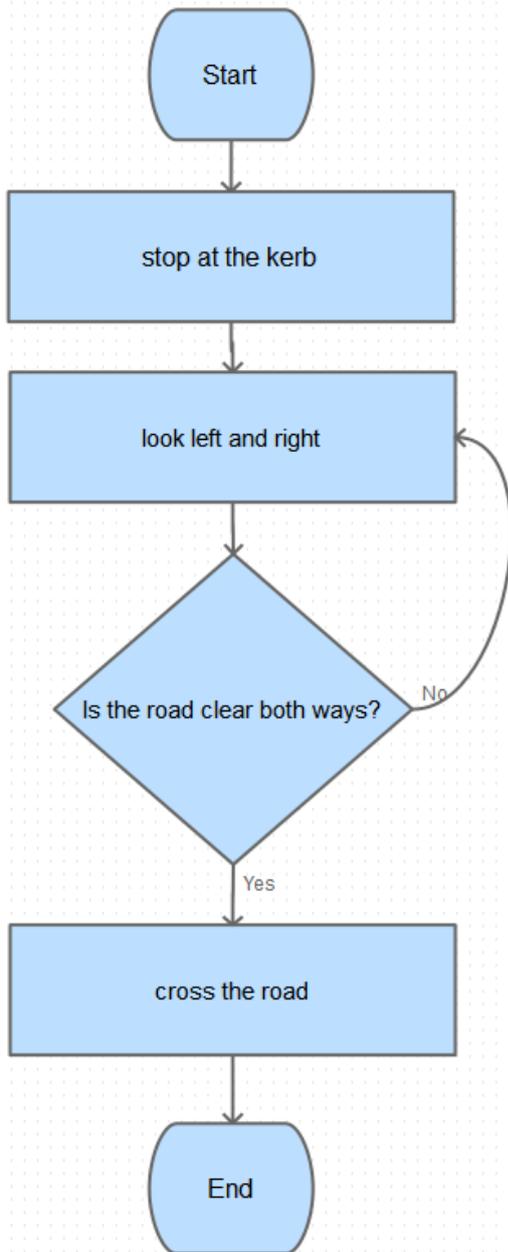


This flow chart illustrates the step we take before shutting the computer down.

1. Start
2. Finish working on the document
3. Save the document on disk very important step
4. Quit the program we are working on
5. Select shut down
6. Finally switch off the machine
7. End

Example 3

Show steps how to safely cross the street

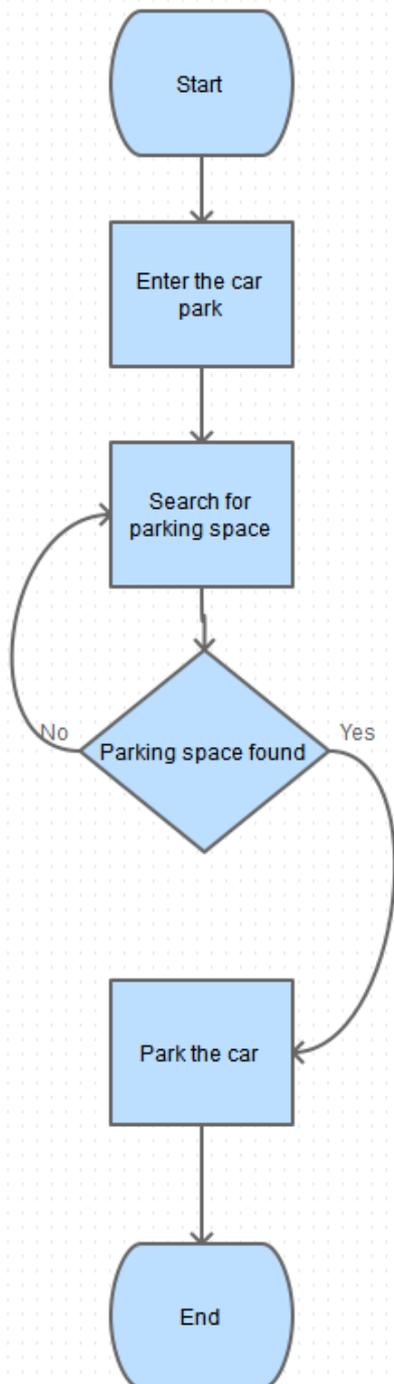


In this flow chart we are using a decision box finally.

1. Start
2. Stop at the kerb of the street
3. Look left and right for any incoming traffic
4. DECISION – is it clear both ways NO – go back to looking left and right. DECISION – is it clear both ways YES
5. Cross the road
6. End

Example 4

Parking the car in a car park



Now let's take a detailed look at this parking the car flow chart.

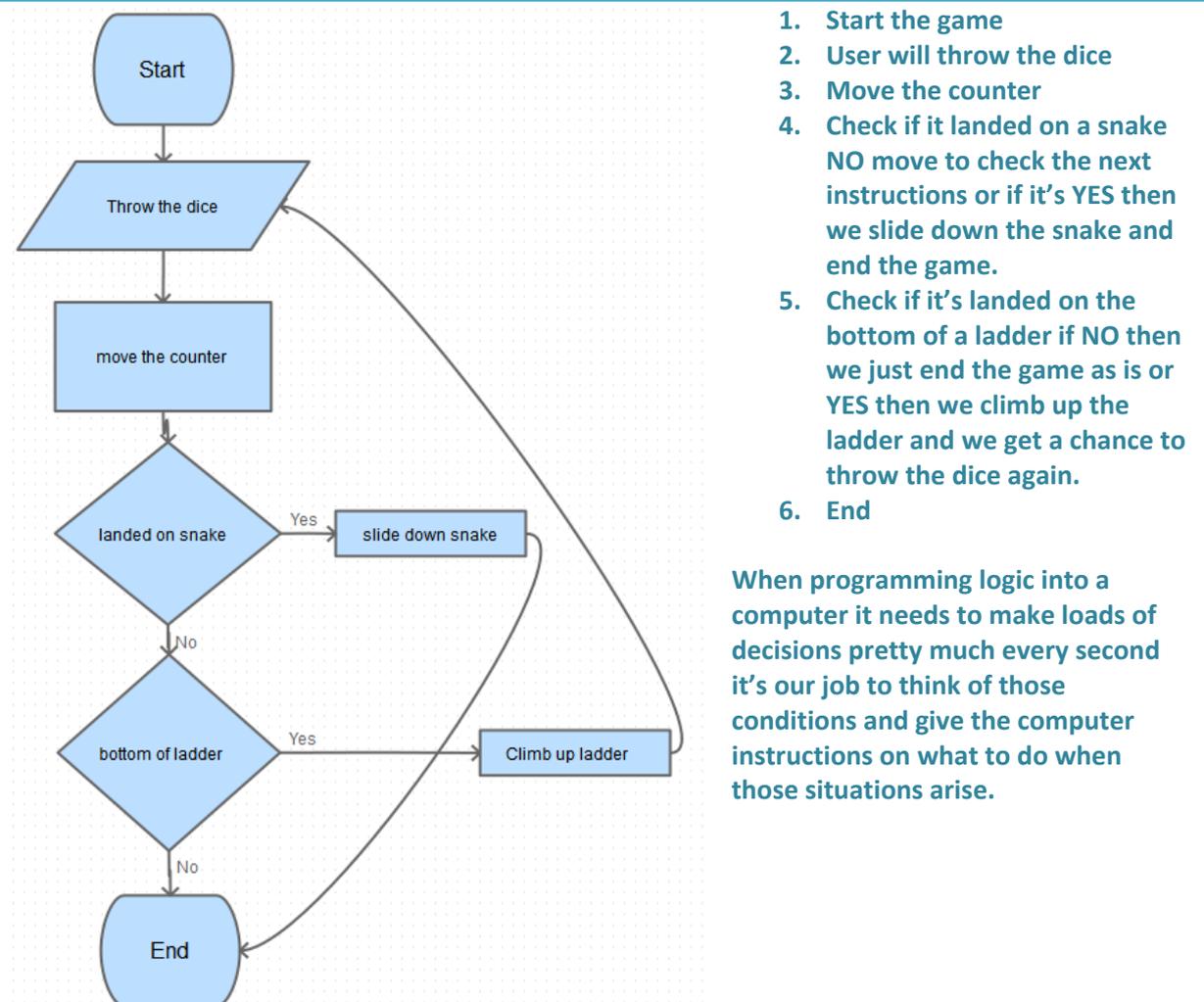
1. We start the application or project
2. We have entered the car park we want to do our shopping in or what ever
3. We will have to drive around for a little to find an appropriate parking space
4. Let's say we found a parking space and we don't like it or its not suitable for the size of the car we SAY NO and we go back to searching for the parking space. Now if we found a parking spot appropriate for the car then we SAY YES.
5. Park the car
6. End of project or application

Once you follow a flow chart through its very simple to understand and implement. Now try this on your own.

Example 5

Show the steps for playing shoots and ladder.

In this example you can see that we are using multiple decision shapes. Its allowed to have as many IF or decisions in your program. Let's see how this one words.

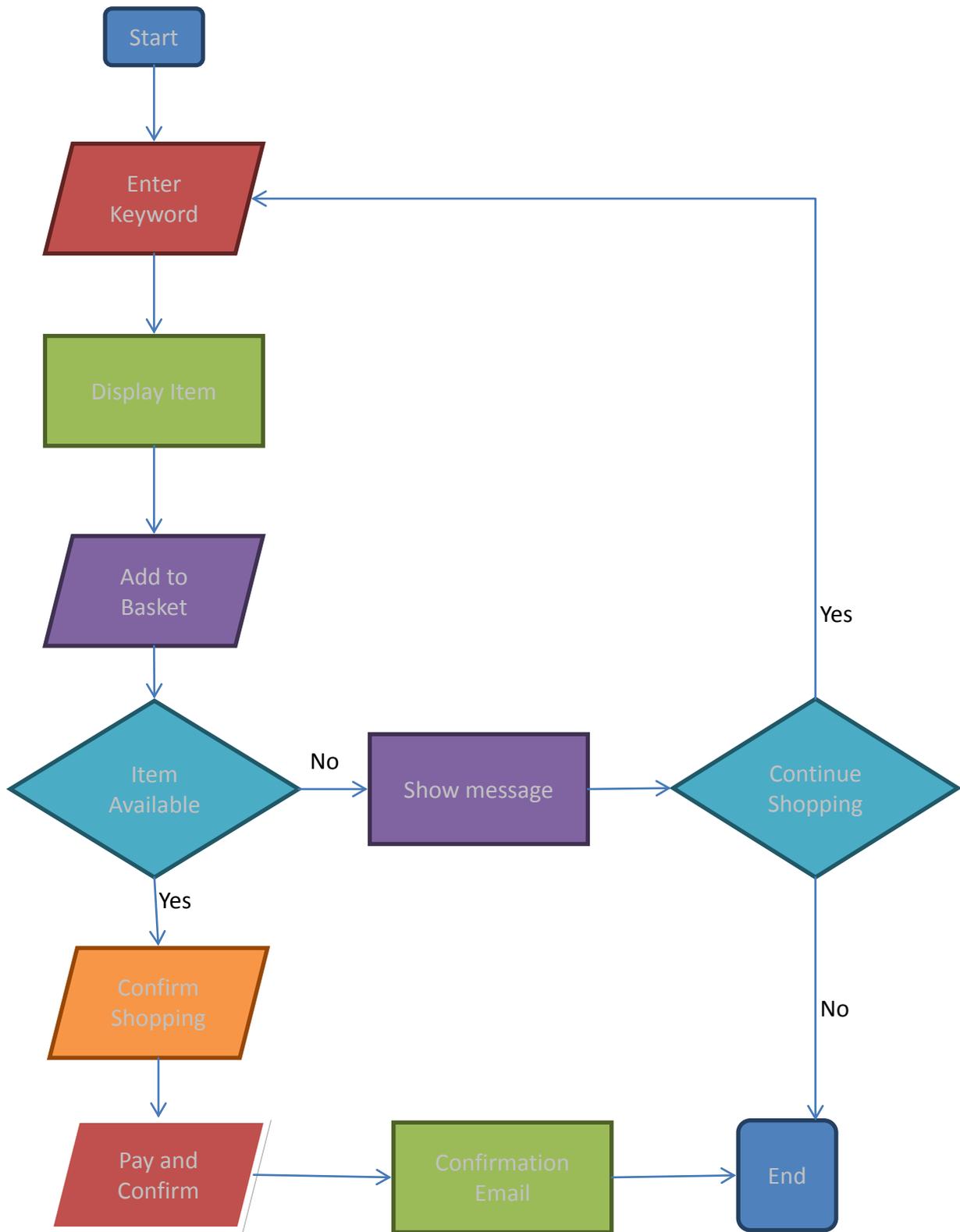


1. Start the game
2. User will throw the dice
3. Move the counter
4. Check if it landed on a snake
NO move to check the next instructions or if it's YES then we slide down the snake and end the game.
5. Check if it's landed on the bottom of a ladder if NO then we just end the game as is or YES then we climb up the ladder and we get a chance to throw the dice again.
6. End

When programming logic into a computer it needs to make loads of decisions pretty much every second it's our job to think of those conditions and give the computer instructions on what to do when those situations arise.

Example 6

Online shopping – Basic Algorithm Flow Chart



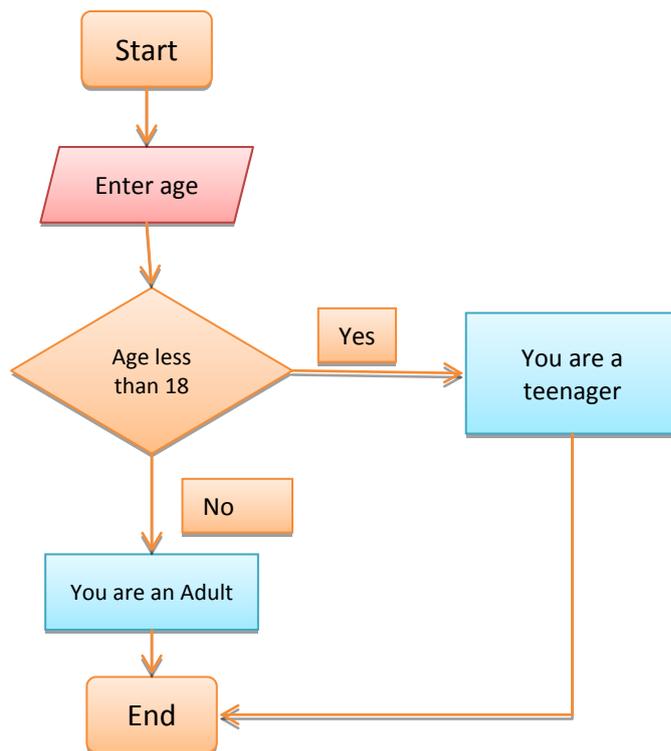
Above is the basic online shopping algorithm you all know too well by now. Lets follow this flow chart down

1. Start the application or website
2. User enters key words to search for a product
3. Display the product from search result
4. Add to basket
- 5. Check if the item is available if YES**
6. Confirm the shopping list
7. Confirm and pay for the item
8. Send a confirmation email to the user
9. END the application
- 10. Check if the item is available If NO**
11. Show message that item is not available
12. Ask if user wants to continue shopping IF yes go back to entering the keywords IF no end the session.

In this example we are using input, process, output and decision all together. Flow charts can make life easier by helping us visualising the data processing models in application design. If this was a real application it would be too simple to create and wouldn't be very effective. We will need to add more process and input for the user and the application for it to be used as a real world application.

Let's take a look at some Code and the flow chart that presents it. Time to link them both together.

Example 7 – Age check with code (C# programming language)



Let's see what the code looks like for this flow chart.

```
int age;  
Console.WriteLine("Enter your age");  
int.TryParse(Console.ReadLine(), out age);
```

This is the top part of the flow chart where the user is asked to enter their age in to this application. Now we don't have to include every line of the code into the flow chart.

```
if (age < 18)  
{  
    Console.WriteLine("You are a teenager");  
}  
else  
{  
    Console.WriteLine("You are an Adult");  
}
```

This is the decision part of the flow chart where the application dictates whether the user is an adult or teenager. Once the user enters their age in to the system it will output accordingly. Notice the IF and ELSE that is presented by the YES or NO in the flow chart.

Here is the code we wrote from the specification of the flow chart.

```
CMD.PYE was started with the above path as the current directory.  
UNC paths are not supported. Defaulting to Windows directory.  
Enter your age
```

```
Enter your age
16
You are a teenager
Press any key to continue . . .
```

```
Enter your age
21
You are an Adult
Press any key to continue . . .
```

Remember

Not every step in the CODE must be in the flow chart, if the output matches the flow chart you are on the right path.