Method of Loci

aka Roman Room, Journey, Memory Palace

Method of Loci sounds scary but "loci" is simply the plural for "locus" which means "place". In this trigger system, you pre-memorize a known route (around your house, office, daily commute etc) with each noted "place" along the way acting as a trigger just waiting to have information associated with it.

It is entirely up to you how detailed you make your route. The trade-off being between level of detail and number of pegs. At the simplest level, you could simply note rooms and place a piece of memorized information in each room. At the next, and most common level of detail, you could go round each room noting what is in there - for a lounge perhaps table, lamp, sofa, window sill, vase, trinket, chair, bookcase (with perhaps more trinkets in front of the books) TV, stereo, coffee table. There's eleven pegs for a single room. For even more pegs per room you could memorize parts of items as pegs (in a similar manner to the Tree of Knowledge link technique), table leg, table top, lamp flex, lamp switch, lamp base, lamp shade etc. (although consider whether it may be easier to simply make the route longer).

You can extend your journey by adding a vast lobby to your initial route and having doors go off to routes around other places that you know well (this is where the term Memory Palace comes from). Your journeys don't even have to be real. Studying astronomy? Create and memorize a fictional observatory and connect it to your lobby. Studying chemistry? Create and join a laboratory instead.

Make sure that you always choose your routes between rooms and around rooms in a consistent manner to keep the peg order the same. For example, you might always go around rooms anticlockwise and not enter from another room any room that is accessible from a hallway or corridor.

If you know that you are going to be memorizing information where you need random access, e.g. you might need to pick out the 57th item without going through all the previous 56 items counting, then create a series of rooms that have exactly ten pegs in them. (Alternatively, mark off the pegs that occur after every five or ten items with the number of items remembered so far but bear in mind that this might use 120 pegs for 100 items if you mark every 5.)

Another way of finding and memorizing a journey these days is Google's Street Map facility. Pick a route, or long road, covered by Street Map connect the start to your lobby. Now go along the route in Street View picking out distinctive areas or items on the left hand side of the road to use as pegs and then come back again looking at the right hand side of the road.

Memory Palaces

A Millennial Metaphor

In the ancient Greek arts of rhetoric, memory was a science. The science has an origin in what is surely myth. The poet Simonides of Ceos was hired by the noble Scopas to attend a formal banquet as a paid performer, singing a poem of praise of his host. As was the custom, Simonides began by first praising a pair of gods. After the performance, Scopas informed the poet that he would only get half of the agreed-upon fee, the other half he should get from the gods who had stolen the limelight.

At that point, a messenger came in and told Simonides that a couple of athletic men on horseback were outside waiting for him. Simonides went outside, but nobody was there. But, while he was outside, the gods destroyed the banquet hall to teach Scopas a few lessons about respect. (The lessons being pay the poet; don't mess with the gods; and, memory palaces are a gift from above.)

The banquet hall was so badly destroyed that none of the diners could be recognized. Simonides was able to remember the exact location of every guest at the banquet, using the principles of the Method of Loci, the science of memory. Later, Cicero (106-43 B.C.) wrote a few pages on the science in his classic work, *De Oratore*. [See *De Oratore, II. lxxxvi. 350-353*]. The definitive treatment in Greek literature, however, is the work of an unknown author previously attributed to Cicero in the classic work *Ad Herennium*.

The principles of the science are fairly simple, at least using our modern hindsight. A person who wished to memorize a large work, say an address after dinner or the closing argument of a legal proceeding, would begin by constructing a memory palace. While novices constructed a palace by going to a real one and memorizing the rooms, the memory palace could just as easily be any structure that can be imagined.

The advantage of starting with a real palace, of course, is that it already exists. The student would carefully walk through the halls, remembering every room. For training (and for examination) the student would go someplace else and then attempt to describe the palace.

The memory palace was the foundation. Once that is in your head, you can begin practicing the science of memory. While the palace never changes, the objects inside of a room certainly can change. The strategy, when presented with a large text to memorize, is to walk into the first room of your memory palace and place the first stanza of your address next to a distinctive object, the second stanza next to another object, and so on.

Rehearsing (or indeed delivering a speech) consists of walking back through your memory palace, remembering each of the distinctive objects in the rooms, and then walking past each object and collecting the stanza of text associated with it.

Spatial positioning of thoughts as an aid to memory turns out to mirror our natural thought processes of cognition. (A good description of this is presented by independent researcher Dr. Robert Skoyles in Chapter 10 of his book *Odyssey*.)

What is fascinating about the arts of memory is how this science, like much of the wisdom of the Greeks, faded from the public view. Memorization was still important, though, and it caught the attention of Thomas Aquinas in *Summa Theologica*, who listed the development of artificial memory and memory-enhancing techniques under the virtue of Prudence. Thomas Aquinas based his work on a few allusions in a surviving work by Aristotle, *De memoria et reminiscentia.* According to St. Thomas, the arts of memory and of placing verse on images is the very essence of remembering: "Man cannot understand without images; the image is a similitude of a corporeal thing, but understanding is of universals which are to be abstracted from particulars." [Quoted in Frances Yates, *The Art of Memory* (University of Chicago Press: 1966), p. 70.]

After the endorsement by Thomas Aquinas, the memory arts became almost a fad. Of particular note was the monk Giordano Bruno, who received intense training in a Dominican convent and later became one of the most famous practitioners of the memory arts. Later burned at the stake for heresy, Bruno left the Dominican order and wandered throughout Europe, telling the secrets of memory to all he could find. In addition to his consultations to itinerant occultists and magicians, Bruno published from 1581 to 1591 a series of books including his landmark *The Shadows of Ideas*.

To me, the arts of memory are always linked to the image of Giordano Bruno letting out the secrets of the memory arts to a mass audience. When I worked with Mike Schwartz, then with the University of Colorado, to put all the International Telecommunication Union standards on the Internet in 1991, we named our machine Bruno, and for a while, 'bruno.cs.colorado.edu' was one of the better known machines on the net. (The story of putting those standards on-line is told in my book *Exploring the Internet*.)

The idea of a shadowy underworld of magicians and outlaws who learned (and practiced) the secret arts inspired an obsession by some of the noted authors of the 20th century. Thomas Pynchon, in particular, used the Giordanistis as the model for the shadowy world of an underground postal service in *The Crying of Lot 49*. Continuing our Giordanisti metaphor, when Marshall Rose and I established "The Phone Company" (tpc.int) in 1991, we named the machine "trystero" and used the posthorn of the Trystero guild as our logo. [For more on tpc.int, there are a series of 5 RFCs on the subject.]

The image of the rebel Giordanistis, medieval hackers, is an appealing one, and certainly fit the culture of the early Internet. But, the images of the memory palace are relevant to the Internet in a more fundamental way. We've created objects such as web pages, mail messages, and all the other things we can find on the net. But, finding those things has become the real challenge.

Placing objects in places to find them again is the very essence of how we navigate the real world. Memory palaces are maps of thoughts and are used to navigate the world of ideas just as cartographic maps are used to navigate the world of things. With our modern computer networks, the imaginary and the real world merge into a new place, the Internet.

Step 1 - Creating your memory palace, and giving it persistence
Creating a memory palace is not the most complicated of things. You can take your pick between creating one completely from scratch, or using a place you are very familiar with as a memory palace, all that matters is for you to be able to recall it very vividly, which is the hardest part. Either way, apply the same techniques to actually give it more personal touches.

Step 2 - Memory hooks, and hooking up memories
Furniture and decoration will play a role in recalling information. That's for now. Everything you've added in the rooms so far is going to be used as what is called "memory hooks". Simply put, memory hooks are all those imaginary items that you set up in the rooms, and that we'll use to store and connect to memories.

Step 3 - Keeping your memory palace in shape
Just like all buildings when they are forgotten, memory palaces can fall down and collapse too - even more so since they're not made of material much more solid than the electricity that fires between your neurons. So how can you keep your palaces in shape? There aren't many around this but here are a few pointers.

Step 4 - Conclusion and reference
As a final note, let me thank you for sticking with me through this Instructable - I hope what you've read there will come in handy should you decide to move past the perplexity zone and try to give it a shot. Here's a selection of links I've stumbled upon while researching on the method of loci and memory palaces for this Instructable.

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1 - Decide on a blueprint for your palace. While a memory palace can be a purely imagined place, it is easier to base it upon a place that exists in the real world and that you are familiar with. A basic palace could be your bedroom, for example. Larger memory palaces can be based on your house, a cathedral, a

walk to the corner store, or your whole town. The larger or more detailed the real place, the more information you can store in the corresponding mental space.

2 - Define a route. If you will need to remember things in a certain order, it is essential that you follow a specific route through your palace, both in the real world and in your mind. Thus, once you've decided what your memory palace is, decide how you will travel through it. If you don't really need to remember things in order, this step is unnecessary, but still useful, as it makes memorizing your palace easier.

3 - Identify specific storage locations in your palace or along your route. When you use your memory palace you will put individual things to be remembered (a number, a name, or a part of a speech that you will be giving, for example), in specific locations. Thus, you need to identify as many locations as you think you will need. Walk through your structure or along your route and really observe it. If your palace is actually a route, such as your drive to work, the storage locations can be landmarks along the way: your neighbor's house, a crossroads, a statue, or a skyscraper, for example. If the palace is a structure, you can put things in the different rooms. Within rooms, you can identify smaller locations, such as paintings, pieces of furniture, and so on. The key is to make sure the locations you choose are distinct from each other so that no location can be mistaken for another.

4 - Memorize your memory palace. For your memory palace to be effective, you need to commit it to memory perfectly. The best way to do this is to actually draw out a blueprint (or a map, if the palace is a route) which shows the landmarks or storage locations you have chosen. Try visualizing the palace when you are not there, and then check your mental image against the map to make sure you have remembered every location and put them in the correct order. Picture the landmarks in as much detail as possible: make sure your mental image includes their colors, sizes, smells, and any other defining characteristics.

5 - Place things to be remembered in your palace. Once you have constructed your palace and have it firmly implanted in your mind, you are ready to use it. Put a manageable amount of information in each place. For example, if your palace is your house, and you are trying to remember a speech, you might place the first few sentences on your doormat and the next few in the keyhole of your door. Don't put too much information in any one place, and if certain things must be kept separate from others, put them in different places. Make sure that you place things along your route in the order in which you need to remember them, if applicable. Use natural finishes such as polished marble flooring and top of the line materials like drapes.

6 - Use symbols. You don't necessarily need to put a whole string of words or numbers in a given location in order to be able to remember it, and trying to do so can be unwieldy and counterproductive. Generally, all you need to store in each location is something that will jog your memory, something that will lead you to the actual idea you're trying to remember. Thus, if you are trying to remember a ship, picture an anchor on your couch. If the ship is the U.S.S. Wisconsin, picture the anchor made out of cheese. Symbols are shorthand and make memories more manageable, but they also can be more effective than picturing the actual thing you are trying to remember.

7 - Be creative. The images you put in your palace should, obviously, be as memorable as possible. Generally, images will be more memorable if they are absurd (out of the ordinary)[see warnings] , or if they are attached to some strong emotion or personal experience. The number 124 is not particularly memorable, but an image of a spear shaped like the number 1, going through a swan (which looks like the number 2), and splitting the swan into 4 pieces is. Yes, it's disturbing, but that's part of what makes it stick in your mind.

8 - Stock your palace with other mnemonics. There are many simpler mnemonics that you can use in combination with the memory palace. As an example, suppose you need to remember a great deal about music composition. As you enter your kitchen, you could see a little boy eating a piece of chocolate fudge, which would evoke the first-letter mnemonic "Every Good Boy Deserves Fudge," which would in turn allow you to recall the order of notes on the lines in treble clef (EGBDF).

9 - Explore your palace. Once you have stocked your palace with evocative images, you need to go through it and look at them. The more you explore your palace, the more easily you will recall its contents on demand. In your mind you want to see James Joyce, for example, sitting on your toilet as if he belonged there and was really an integral part of your bathroom decor.

10 - Use your palace. Once you have memorized the contents of your palace you can recall them simply by mentally walking through it or looking around it. If you need to give a speech, just follow your route in order as you do so. If you need to remember that your girlfriend's birthday is March 16, simply go into your bedroom and see the soldiers "marching" on the bed to the tune of the 80s cult classic "Sixteen Candles." With practice you will be able to start anywhere in your palace or along your route to recall a specific piece of information.

11 - Build new palaces. A memory palace can be reused over and over again if you need only commit things to memory for a short time. Just replace the existing contents with new ones, and you'll soon remember only the new ones. If you need to remember the contents of your palace for a long time, you can keep that palace as it is and create new ones in which to store other information as

needed. If your house contains the phone numbers of everyone you know, you can walk to your workplace if you need to remember the order of a deck of cards.

The Art of Memory

Frances Yates

In classical rhetoric, images and text were mapped onto virtual places to aid the memory of orators. Memory was enormously important to orators because they were expected to deliver long speeches with total accuracy. In fact, memory was of such value that there developed an "art of memory" designed to strengthen the natural memory. Frances Yates explains that this artificial memory depended upon the recollection of images:

The artificial memory is established from places and images . . . A locus is a place easily grasped by the memory, such as a house, an inter-columnar space, a corner, an arch, or the like. Images are forms, marks or simulacra of what we wish to remember. For instance if we wish to recall the genus of a horse, of a lion, of an eagle, we must place their images on definite loci.

Artificial memory was a kind of "inner writing" the orator reviewed while presenting a speech, observing the places and their contents, the images, and recovering the memories for things (the subject matter) that those images represented. The orator used a series of places (the topoi of classical rhetoric in which one "found" arguments, known as inventio) in which he placed one of many sets of images, depending upon the speech he was to remember." . . . the loci remain in the memory and can be used again by placing another set of images for another set of material". These images were to be easily memorized. The anonymous author of the Ad Herennium, a classical rhetoric, discusses which types of images the orator should use in order to best remember them.

. . . ordinary things easily slip from the memory while the striking and the novel stay longer in the mind. . . . We ought, then, to set up images that are not many or vague but active; if we assign to them exceptional beauty or singular ugliness; if we ornament some of them, as with crowns or purple cloaks, so that the similitude may be more distinct to us; or if we somehow disfigure them, as by introducing one stained with blood or soiled with mud or smeared with red paint so that its form is more striking, or by assigning certain comic effects to our images, for that, too, will ensure our remembrance of them more readily. The things we easily remember when they are real we likewise remember without difficulty when they are figments.

Yates adds: "Our author has clearly got hold of the idea of helping memory by arousing emotional affects through these striking and unusual images, of human figures wearing

crowns or purple cloaks, bloodstained or smeared with paint, of human figures dramatically engaged in some activity - doing something". The classical rhetoric instructor did not dictate these images to the students; rather the student was encouraged to form his own images so as to find those that most resonated with his own emotions. The student accompanied the images of human figures with accessories in order to remind him of the topic of his speech. The author of ad Herennium provides an example of one such memory image, used by a defense lawyer to remember the details of a poisoning case.

We shall imagine the man in question as lying ill in bed, if we know him personally. If we do not know him, we shall yet take some one to be our invalid, but not a man of the lowest class, so that he may come to mind at once. And we shall place the defendant at the bedside, holding in his right hand a cup, in his left, tablets, on the fourth finger, a ram's testicles. In this way we can have the memory of the man who was poisoned, the witnesses, and the inheritance.

The cup would remind of the poisoning, the tablets, of the will or inheritance, and the testicles of the ram through verbal similarity with testes - of the witnesses.

This image activates the memory of the orator through metonymy (the tablets for the will) and association (the ram's testicles for the testes, or witnesses). As a method for remembering information, the artificial memory of classical rhetoric prefigures a method of writing in virtual worlds. In a simulated environment, we have the capacity to externalize our memory in a machine; striking images which guide the reader through a web of interconnected spaces may produce spoken or written text. The text is related to the images through metonymy and association. Imagine the memory image described above as a "mapped" image in a virtual (or real) space. When you see the tablets you hear the text of the will; when you see the ram's testicles, you hear the text of the witnesses' stories.

The Memory Palace

The Memory Palace has been used since ancient Rome, and is responsible for some quite incredible memory feats. Eight-time world memory champion Dominic O'Brien, for instance, was able to memorize 54 decks of cards in sequence (that's 2808 cards), viewing each card only once. And there are countless other similar achievements attributed to people using the Memory Palace technique or variations of it. Even in fiction, there are several references to the technique. In Thomas Harris' novel Hannibal, for example, serial killer Hannibal Lecter uses Memory Palaces to store amazingly vivid memories of years of intricate patient records (sadly, it was left off the movie).

Of course, most of us are not in Dominic's memory championship line of business (or in Hannibal's line of business for that matter). But still, the Memory Palace technique is amazingly effective in all kinds of endeavors, such as learning a foreign language, memorizing a presentation you're about to deliver, preparing for exams and many others — even if all you want is to jog your memory.

The Memory Palace technique is based on the fact that **we're extremely good at remembering places we know**. A 'Memory Palace' is a metaphor for any well-known place that you're able to easily visualize. It can be the inside of your home, or maybe the route you take every day to work. That familiar place will be your guide to store and recall any kind of information. Let's see how it works.

Five Steps to Use the Memory Palace Technique

1. Choose Your Palace

First and foremost, you'll need to pick a place that you're very familiar with. **The effectiveness of the technique relies on your ability to mentally see and walk around in that place with ease.** You should be able to 'be there' at will using your mind's eye only.

A good first choice could be your own home, for example. Remember that the more vividly you can visualize that place's details, the more effective your memorization will be.

Also, try to **define a specific route in your palace instead of just visualize a static scene**. So, instead of simply picturing your home, imagine a specific walkthrough in your home. This makes the technique much more powerful, as you'll be able to recall items in a specific order, as we'll see in the next step.

Here are some additional suggestions that work well as Memory Palaces, along with possible routes:

- **Familiar streets in your city.** Possible routes could be your drive to work, or any other sequence of streets you're familiar with.
- **A current or former school.** You can imagine the pathway from the classroom to the library (or to the bar on the other side of the street, if that's the route imprinted on your mind).
- **Place of work.** Imagine the path from your cubicle to the coffee machine or to your boss's office (it shouldn't be hard to choose).

- **Scenery.** Imagine walking on your neighborhood or the track you use when jogging in a local park.

2. List Distinctive Features

Now you need to pay attention to specific features in the place you chose. If you picked a walkthrough in your home, for example, the first noticeable feature would probably be the front door.

Now go on and mentally walk around your Memory Palace. After you go through the door, what's in the first room?

Analyze the room methodically (you may define a standard procedure, such as always looking from left to right, for example). What is the next feature that catches your attention? It may be the central table in the dining room, or a picture on the wall.

Continue making mental notes of those features as you go. Each one of them will be a "memory slot" that you'll later use to store a single piece of information.

3. Imprint the Palace on Your Mind

For the technique to work, **the most important thing is to have the place or route 100% imprinted on your mind.** Do whatever is necessary to really commit it to memory. If you're a visual kind of person, you probably won't have trouble with this. Otherwise, here are some tips that help:

- Physically walk through the route repeating out loud the distinctive features as you see them.
- Write down the selected features on a piece of paper and mentally walk through them, repeating them out loud.
- Always look at the features from the same point of view.
- Be aware that visualization is a just a skill. If you're still having trouble doing this, you may want to develop your visualization skills first.
- When you believe you're done, go over it one more time. It's really important to "overlearn" your way in your Memory Palace.

Once you're confident that the route is stamped on your mind, you're set. Now you have your Palace, which can be used over and over again to memorize just about anything you want.

4. Associate!

Now that you're the master of your palace, it's time to put it to good use.

Like most memory enhancement systems, the Memory Palace technique works with the use of visual associations. The process is simple: you take a known image — called the **memory peg —** and combine with the element you want to memorize. **For us, each memory peg is a distinctive feature of our Memory Palace.**
The memory pegging technique is the same one described in the article *'Improve Your Memory by Speaking Your Mind's Language'*, so if you haven't read it yet, I highly advise you to do so.

As described in that article, there's a 'right way' of doing visual associations:

Make it crazy, ridiculous, offensive, unusual, extraordinary, animated, nonsensical — after all, these are the things that get remembered, aren't they? Make the scene so unique that it could never happen in real life. The only rule is: if it's boring, it's wrong.

Although we can use the technique to memorize tons of information, let's start with something very simple: using our 'Home' Memory Palace to memorize a groceries list. Let's suppose the first item in that list is 'bacon':

Mentally transport yourself to your Memory Palace. The first feature you see in your mind is your home's front door. Now, in a ludicrous way, visually combine 'bacon' with the sight of your front door. How about giant fried bacon strips flowing out from underneath the door reaching for your legs, just like zombies in those B-movies? Feel the touch of the "bacon hands" on your legs. Feel the smell of darn evil bacon. Is that remarkable enough?

Now open the door and keep walking, following the exact same route you defined before. Look at the next distinctive feature, and associate it with the second item to be memorized. Suppose the next item is 'eggs' and the second feature is 'picture of mother-in-law'. Well, at this point you already know what to do… The process is always the same, so just keep mentally associating images until there are no items left to memorize.

5. Visit Your Palace

At this point, you are done memorizing the items. If you're new to the technique, though, you'll probably need to do a little rehearsal, repeating the journey at least once in your mind.

If you start from the same point and follow the same route, **the memorized items will come to your mind instantly as you look at the journey's selected features.** Go from the beginning to the end of your route, paying attention to those features and replaying the scenes in your mind. When you get to the end of your route, turn around and walk in the opposite direction until you get to the starting point.

In the end, it's all a matter of developing your visualization skills. The more relaxed you are, the easier it will be and the more effective your memorization will be.

Final Thoughts

What I like about the Memory Palace (and other pegging methods) is that it's not only extremely effective, but also quite fun to learn and use.

With just a little bit of experience, the lists you memorize using the Memory Palace will stay fresh in your mind for many days, weeks or even more.

Also, have in mind that you can create as many palaces as you want, and that they can be as simple or as elaborate as you wish to make them. Each of them is a "memory bank", ready to be used to help you memorize anything, anytime.

Associating physical locations with mental concepts is the most powerful memory combination I know. Most other memory techniques (supposedly more sophisticated than the Memory Palace) are, at least in part, based on the concept of physical locations being used as memory pegs.

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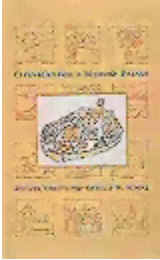
Chambers for a Memory Palace
by Donlyn Lyndon and Charles W. Moore

Chambers for a Memory Palace (MIT Press, 1996). Two distinguished architects adopted the Memory Palace metaphor and wrote a beautiful gem of a book that consists of an exchange of letters on the subject of how we view our world and how we make our world. This is one of the better books on the art of place-making. (Charles W. Moore was one of the most famous teachers of architects, serving among other duties as the Dean of Yale's School of Architecture and is best known for his work on "Sea Ranch" with Donlyn Lyndon and two other architects.)

The Memory Palace of Matteo Ricci
by Jonathan D. Spence

The Memory Palace of Matteo Ricci (Viking, 1994). In 1583, Father Matteo Ricci of the Jesuit order went to China to spread the faith. To try and entice young Confucians to listen to him, Ricci used the Memory Arts as a hook, teaching them the Method Loci so they could pass their examinations. He got a willing audience and became one of the first Western monks to learn Chinese well enough to have an idea about the country he made his home.
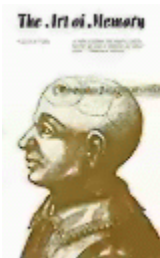
The Art of Memory
by Frances A. Yates

The Art of Memory (University of Chicago, 1974). This book is one of the classic history texts, a scholarly work on a subject that had not received much attention, yet written in a way that it has become a lay classic. Yates was also famous for her biography of Giordano Bruno.