MUSHROOM CLASSIFICATION:

Larger (macroscopic) fungus

- Subterranean fungi (truffles)
- Above-ground fungi
  - Basidiomycetes
    - Gasteromycetes: puffball, bird nest, stinkhorn, etc.
  - Ascomycetes (cup & flask fungi)
    - Polypore, crust & Jelly fungi (on wood)
    - Coral, tooth & club fungi, etc.

Mushroom like fungi

- Mushrooms with tubes (boletes)
- Mushrooms with gills
Mushrooms are classified on the basis of natural habitat as precised here:

(A) **Humicolous or folicolous (hunus inhabiting)**
   (i) Saprophytic:
   - *Lepista nuda, Volvariella spp,*
   - *Marasmius spp, Polyponus, Tuberaster*
   (ii) Symbiotic:
   - *Boletus, Lactarius, Tricholoma, Tuber* and *Morchella*

(B) **Lignicolous (Wood inhabiting)**
   (i) Saprophytic:
   - *Agrocybe, Pleurotus, Auricularia spp, Lentinus edodes*
   (ii) Parasitic:
   - *Armillaria mellea, Cytaria*

(C) **Coprophilous (Dung inhabiting)**
   - *Agaricus spp, Coprinus spp*
Similarly mushrooms are classified on the basis of taxonomic position as detailed below:

**Classification of Mushrooms**

Mushroom is a fleshy fruiting body of some fungi arising from a group of mycelium buried in substratum. Most of the mushrooms belong to the Sub-Division: Basidiomycotina and a few belong to Ascomycotina of Kingdom-Fungi.

It is reported that there are about 50,000 known species of fungi and about 10,000 are considered as edible ones. Of which, about one hundred and eighty mushrooms can be tried for artificial cultivation and seventy are widely accepted as food. The cultivation techniques were perfected for about twenty mushrooms and about dozen of them have been recommended for commercial cultivation. However, only six mushrooms are widely preferred for large-scale cultivation.

They are:

- Paddy straw mushroom - Volvariella spp.
- Oyster mushroom - Pleurotus spp.
- Button mushroom - Agaricus spp.
- Milky mushroom - Calocybe spp.
- Shiitake mushroom _ Lentinulla spp.
- Jew’s ear mushroom - Auricularia sp.
A. *Agaricus bisporus*: The Button Mushroom

Cap: 3-16 cm, convex to broadly convex or nearly flat in age; dry; smooth or with pressed-down or small scales; white in some varieties, brown in others.

Gills free from the stem; close; pinkish to pinkish brown at first, becoming dark brown to blackish.

Stem 2-8 cm long; 1-3 cm thick; sturdy; more or less equal; smooth or with small scales below the ring; white, often bruising brownish; with a ring that sometimes disappears in maturity.

Flesh white and firm; usually bruising and staining brownish (see top illustration).

Odour and taste pleasant. Chemical Reactions - cap not yellow with KOH.

Spore print brown.

Microscopic Features - spores 5.5-8.5 x 4-6.5 µ; elliptical; smooth. Basidia 2-spored.

B. *Pleurotus* spp.: The Oyster mushroom

The cap of oyster mushroom is tongue shaped, maturing to a shell shaped form, 50-150 mm in diameter, whitish to grey to blue grey in colour.

Flesh is thin and white, margin is occasionally wavy.

Gills are white, decurrent, broadly spaced, stem attached in an off-centred fashion and is short at first and absent in age.

Spores are whitish to lilac grey in mass, mycelium whitish, fast growing rhizomorphic to linear. Basidia tetrapolar, producing 4 haploid spores, heterothallic, clamp connections present. Because of the allergic nature of spores, some sporeless strains have also been developed.

C. *Volvariella* spp.: The Paddy straw mushroom

Mushrooms are white initially, become dark tan in colour as the veil tease and then changes to a pale tan with age.

Fruiting bodies are small when young enveloped by a sheath like universal veil, which soon breaks as fruit bodies mature, leaves an irregular cup-like sack at the base of the stem known as volva.

Cap 5-15 cm broad, egg shaped and expands to campanulate or convex with slight umbo.

Gills are free, white first and soon pinkish.

Spores are pinkish to pinkish brown in mass, 7.5–9 x 4–6 µ in size. Stem 4-20 cm long, solid, smooth and white to yellowish in colour.

Stem base is encased in a thick volva. Basidia are tetrapolar, producing four haploid spores. Primary homothallic, clamp connections are present, form cheilocystidia, pleurocystidia and chalamydospores.
G. Calocybe indica: White milky mushroom

The milky mushrooms are also known as Swatha mushrooms. They are the only mushroom species that is both native to and cultivated in, the hot moist climate of India. Milky mushrooms are called ‘milky’ for their white color. Milky mushrooms are rich in nutrient, have a good shelf life and are the only fungus that can be cultivated in the tropics. Milky mushroom (Calocybe indica) can be grown on wide range of substrates as in case of oyster mushroom. It can be grown on substrates containing lignin, cellulose and hemicelluloses. Substrate should be fresh and dry. Substrates exposed to rain or harvested premature (green color) are prone to various weed moulds which may result in failure of the crop. It can be grown on straw of paddy, wheat, ragi, maize/bajra/cotton stalks and leaves, sugarcane bagasse, cotton and jute wastes, dehulled maize cobs, tea/coffee waste etc., However cereal straw (paddy/wheat) easily available in abundance, is being widely used.

E. Auricularia sp.: Jew’s ear mushroom

Auricularia auricula-judae known as the Jew's ear, (black) wood ear, jelly ear or by a number of other common names, is a species of edible Auriculariales fungus found worldwide. The fruiting body is distinguished by its noticeably ear-like shape and brown colouration; it grows upon wood, especially elder. The fungus can be found throughout the year in temperate regions worldwide, where it grows upon both dead and living wood.

10 TYPES OF COMMON EDIBLE MUSHROOM: --

A mushroom is the fleshy, spore-bearing fruiting body of a fungus, which grows above the ground on soil or on its food source. The most commonly cultivated is the white button mushroom or Agaricus bisporus. They generally have a stem, a cap and gills on the bottom of the cap. It must be known that China is the largest producer of edible mushrooms accounting for over 50 percent of the world's edible mushroom production.

Mushrooms are delicious to eat. It can be added in soups, stews, vegetables and can be topped on your favorite pizza. Generally, all edible mushrooms are:

- Low in sodium, calories and fat
- High in protein and fiber
- Rich in potassium, minerals, copper, selenium, zinc, and magnesium.
- Rich in B-complex vitamins, niacin, riboflavin, and pantothenic acid.
- Rich in cancer-fighting nutrients like polysaccharides and linoleic acid.
- Free of cholesterol etc.

With so many types of mushrooms, the recipes are endless. Here are the most common 10 mushrooms and some of their characteristics.
10 of the most common mushroom types

1. **White button mushroom**

   Also known as: able mushroom, cultivated mushroom, button, table mushroom, and champignon mushroom.

   Agaricus bisporus is an edible mushroom which has two color states while immature – white and brown – both of which have various names. When mature, it is known as portobello mushroom.

   White button mushroom is the immature and white variety. It’s the most common and mildest-tasting from all the mushroom types.

   90 percent of the mushrooms we eat are of this variety. Its flavor is mild, and that makes it more versatile. It can be eaten either raw or cooked and works well in soups, stews, salads, and on pizzas.
2. **Crimini mushroom**

Also known as: when immature and brown, *Agaricus bisporus* may be known as Cremino mushroom, Swiss brown mushroom, Roman brown mushroom, Italian brown mushroom, classic brown mushroom, or chestnut mushroom.

Criminis are young portobello mushrooms, also sold as baby portobellos, and they’re just more mature white button mushrooms. Crimini and white button mushrooms are interchangeable. They are similar in shape, but may be slightly bigger in size and darker in color: crimini have a light shade of brown.
3. **Portobello mushroom**  
Also known as: field mushroom, or open cap mushroom.

Mushrooms of this variety are as wide as the palm of your hand. Portobello mushrooms are dense in texture and have a rich taste. In Italy, they’re used in sauces and pasta and make a great meat substitute. Also, if you want a bread bun-substitute, you can even use the mushroom’s flat cap. They are perfect for grilling and stuffing.
4. Shiitake mushroom
Also known as: Shitake, black forest, black winter, brown oak, Chinese black, black mushroom, oriental black, forest mushroom, golden oak, Donko.

Shiitake are mushrooms that grow mainly in Japan, China, and Korea, which is one of the reasons they are so predominant in Asian cuisine. In Japanese, shiitake means ‘oak fungus,’ but these days most shiitakes are cultivated. They have a light woody flavor and aroma, while their dried counterparts are more intense. They are savory and meaty and can be used to top meat dishes and to enhance soups and sauces. Shiitake can be found both fresh and dried.
5. **Oyster mushroom**

Also known as: Pleurotus, tree oyster, angel’s wings, pleurotte en huître, abalone mushroom.

Oyster mushrooms are a species of Pleurotus and they can be found in the wild, growing on the sides of trees. Nowadays they’re some of the most commonly cultivated edible mushrooms in the world. The king trumpet mushroom is the largest species in the oyster mushroom genus.

They are simple to cook and offer a delicate and sweet flavor. They’re used especially in a stir-fry or sauté because they are consistently thin, and so will cook more evenly than other mushrooms.
6. Enoki mushroom
Also known as: Enokitake, enokidake, futu mushroom, winter mushrooms, winter fungus, golden needle mushroom, or lily mushroom.

Enoki mushrooms are available fresh or canned. Experts recommend consuming fresh enoki specimens with firm, white, shiny caps, rather than those with slimy or brownish stalks that are best avoided. They’re good raw and they’re common in Asian cooking. Because they’re crisp, they hold up well in soups and go well in salads, but you can also use them in other dishes.
7. **Chanterelle mushroom**

Also known as: Golden, yellow, chanterelle, egg mushroom, girolle, pfifferling

Chanterelles are among the most popular species of wild mushrooms. They are orange, yellow or white, meaty and trumpet-shaped. Because they’re difficult to cultivate, chanterelles are usually foraged in the wild. They’re common in many European cuisines, including French and Austrian, and are also native to the United States.

Some species have a fruity odor, others a more woody, earthy fragrance, and still others can even be considered spicy. They are delicate in flavor and texture, work well fried or sautéed in butter, oil or cream. You can use them as a starter topping, on bruschetta or you can combine them with eggs. They also go well in soufflés, cream sauces, soups, or pasta.  

There also are black trumpet mushrooms, also known as black chanterelle, horn of plenty, or trumpet of the dead. Black trumpets have a rich, smoky flavor and notes of a black truffle mushroom when dried.
8. Porcini mushroom
Also known as: Porcino mushroom, Cèpe, bolete, king bolete, borowik, Polish mushroom, Steinpilz, stensopp, or penny bun.

A meaty mushroom similar to the portobello, the porcini are mushroom types often used in Italian cuisine. Its flavor has been described as nutty and slightly meaty, with a smooth, creamy texture, and a distinctive aroma reminiscent of sourdough. Fresh porcinis aren’t as easy to find in the United States, but dried ones are easily reconstituted by soaking in hot water for at least 15 minutes before cooking with them. They’re good sautéed with butter, ground into pasta, in soups, risottos, and in many other dishes. They are also one of the few mushroom species pickled and sold commercially.
9. **Shimeji Mushroom**

Also known as: Several species are sold as shimeji mushrooms, including buna-shimeji, and bunapi-shimeji.

Shimeji should always be cooked: it is not a good mushroom to serve raw due to a somewhat bitter taste. Its bitterness disappears completely when cooked, and the mushrooms turn slightly nutty in flavor. This is one of those mushroom types that works well in stir-fried dishes, in soups, stews, and sauces.
10. Morel Mushroom
   Also known as: morchella.

   Out of all the mushroom types, these distinctive fungi have a honeycomb appearance on their cap. Morels are prized by gourmet cooks, particularly in French cuisine, because they are super savory and delicious. Due to difficulties in cultivation, commercial harvesting of wild morels has become a multimillion-dollar industry in the temperate Northern Hemisphere, in particular in North America, Turkey, China, the Himalayas, India, and Pakistan, where these highly prized fungi are found in abundance.

   One of the best and simplest ways to enjoy morels is by gently sautéing them in butter, then season them with salt and pepper. They are a little chewy and taste great. Serve them with meat and poultry, or add them to soups, or in pasta fillings.