Coursework assignment

Choose a subject area (it should be quite specific, e.g. 'English property law', rather than 'law'). Create the outline of a taxonomy for this area, and show the beginnings of the hierarchy, for at least two levels below each top term. Choose a section of the taxonomy (or all of it, if you wish), and complete the hierarchy to the most detailed level; then transform the terms in this section into thesaurus form. You should present:

- the taxonomy structure, shown hierarchically, which should include at least three top terms and at least three levels of hierarchy;
- the thesaurus fragment, shown alphabetically, which should include at least 50 terms;
- an account of about 1500 words of how you went about the construction process, and what problems you encountered.
Allotment taxonomy and thesaurus

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    ■ Sheds
    ■ Containers
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      ● Planters
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Managing Allotments

- Plant cultivation
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  - Deadheading
  - Plant health
    - Disease prevention
    - Disease management
    - Pest control
      - Insecticides
        - Organic insecticides
          * Proprietary
          * Homemade
        - Synthetic insecticides
      - Weed control
        - Mulches
        - Fabrics
        - Herbicides
        - Weeding
      - Companion planting
      - Biological pest controls
      - Poisons
      - Pest deterrents
  - Harvesting
    - Storing
    - Recipes
      - Chutneys
      - Pickles
      - Preserves

- Soil management
  - Composting
- Crop rotation
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- Allotment styles
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  - Low maintenance
  - Organic allotments

- Livestock management
  - Bees
  - Hens

- Regulations
  - Allotment rules

◆ Allotment events
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  - 19\textsuperscript{th} Century
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    - Second World War
  - 21\textsuperscript{st} Century
# Thesaurus fragment

<table>
<thead>
<tr>
<th>SN</th>
<th>Scope note</th>
</tr>
</thead>
<tbody>
<tr>
<td>USE</td>
<td>The term that follows the tag is the preferred term that should be used in place of the non-preferred term that precedes the tag.</td>
</tr>
<tr>
<td>UF</td>
<td>The term that follows the tag is a non-preferred term for which the preferred term preceding the tag should be used instead.</td>
</tr>
<tr>
<td>TT</td>
<td>The preferred term that follows the tag represents the broadest concept in a hierarchy to which the specific concept belong.</td>
</tr>
<tr>
<td>BT</td>
<td>The term that follows the tag represents a concept having a wider meaning.</td>
</tr>
<tr>
<td>NT</td>
<td>The term that follows the tag refers to a concept with a more specific meaning.</td>
</tr>
<tr>
<td>RT</td>
<td>The term that follows the tag is associated, but is not a synonym, a quasi-synonym, a broader term or a narrower term.</td>
</tr>
</tbody>
</table>

(BS ISO 25964-1:2011)

**Note on spelling for the thesaurus**

The thesaurus uses British-English spellings and terminology throughout and not American-English.

-allotment management
USE: managing allotments

-allotment rules
TT: managing allotments
BT: regulations

-allotment styles
SN: ethos or methodology guiding selection of crops and/or the way in which they are cultivated.
BT: managing allotments
NT: biodynamic
drought resistant
low maintenance
organic allotments

-bee keeping
USE: bees + livestock management
bees
UF: honey bees
bee keeping
TT: managing allotments
BT: livestock management
invertebrates

biodynamic
SN: style of allotment that excludes the use of artificial chemicals, and includes sowing according to specific phases of the moon. May also include some mystical practices.
TT: managing allotments
BT: allotment styles

biological pest controls
SN: method to control pests using other organisms, typically relies on predation and parasitism.
TT: managing allotments
BT: pest control
RT: organic allotments

chickens
USE: hens

chutneys
TT: managing allotments
BT: recipes

companion planting
SN: plant combinations that assist yields, pollination or reduce predation by pests.
TT: managing allotments
BT: pest control
RT: organic allotments

compost
SN: organic matter that has decomposed under particular conditions and is rich in nutrients.
UF: humus
TT: managing allotments
BT: soil improvers
RT: composting
loam
potting compost

composting
SN: process of making compost.
TT: managing allotments
BT: soil management
RT: compost
**crop rotation**
TT: managing allotments  
BT: soil management  
RT: disease prevention

crop storage  
USE: storing

cropping  
USE: harvesting

**deadheading**
TT: managing allotments  
BT: plant cultivation

digging  
USE: soil cultivation

**direct sowing**
SN: planting seeds outside in their final growing position.  
UF: outdoor sowing  
TT: managing allotments  
BT: sowing

disease management  
SN: refers to management of plant disease.  
TT: managing allotments  
BT: plant health

disease prevention  
SN: refers to plant disease prevention.  
TT: managing allotments  
BT: plant health  
RT: crop rotation  
pruning

division  
SN: asexual plant propagation where a plant is divided into smaller sections.  
UF: plant dividing  
TT: managing allotments  
BT: propagation

DIY  
USE: homemade

do-it-yourself  
USE: homemade

**drip irrigation**
TT: managing allotments  
BT: irrigation
drought resistant
SN: plants or techniques suitable for allotments that cannot be watered regularly during dry spells.
UF: drought tolerant
TT: managing allotments
BT: allotment styles

USE: drought resistant

fabrics
SN: fabrics laid over recently cleared soil to suppress weed growth.
UF: weed fabrics
TT: managing allotments
BT: weed control

USE: weed fabrics

fertilisers
TT: managing allotments
BT: soil improvers
NT: proprietary
homemade

USE: soil improvers

fowl
USE: hens

gardening
USE: plant cultivation

USE: plant cultivation

greenwood cuttings
TT: managing allotments
BT: stem cuttings

USE: plant cultivation

green manures
SN: plants grown to cover bare soil, which are then dug into the ground while still green to release nutrients into the soil and improve its structure.
TT: managing allotments
BT: soil improvers

USE: plant cultivation

growing
USE: plant cultivation

USE: plant cultivation

hardwood cuttings
TT: managing allotments
BT: stem cuttings
harvesting
UF: cropping
TT: managing allotments
BT: plant cultivation
NT: storing recipes

hens
UF: chickens fowl
TT: managing allotments
BT: livestock management
RT: birds

herbicides
UF: pesticides weedkillers
TT: managing allotments
BT: weed control

homemade
SN: made at home or on the allotment rather than a commercially available product.
UF: DIY do-it-yourself
TT: managing allotments
BT: fertilisers organic insecticides

honey bees
USE: bees

humus
USE: compost

indoor sowing
TT: managing allotments
BT: sowing
RT: greenhouses seed trays

insecticides
UF: pesticides
TT: managing allotments
BT: pest control
NT: organic insecticides synthetic insecticides
irrigation
UF: watering
BT: managing allotments
NT: drip irrigation
    self watering systems
RT: watering equipment

jams
USE: preserves

layering
SN: pegging out of flexible stems into the soil to create new plants.
TT: managing allotments
BT: propagation

leaf cuttings
SN: propagation technique.
TT: managing allotments
BT: plant cuttings

leaf litter
USE: leafmould

leafmould
SN: decomposed leaves.
UF: leaf litter
TT: managing allotments
BT: soil improver
RT: potting compost
    Mulches

livestock management
SN: raising and managing animals on an allotment.
BT: managing allotments
NT: hens
    bees

lopping
USE: pruning

low maintenance
SN: plants or techniques suitable for allotments where less physical exertion or fewer visits are necessary to maintain optimal harvesting.
TT: managing allotments
BT: allotment styles
managing allotments
SN: activities, techniques and processes for a productive allotment.
UF: allotment management
NT: allotment styles
    irrigation
    livestock management
    plant cultivation
    soil management

mulches
SN: materials placed on the surface of the soil to prevent weeds, improve soil
    health or for visual appearance.
UF: top dressing
TT: managing allotments
BT: weed control
RT: leafmould

natural pest control
USE: **organic insecticides**

organic allotments
SN: plant cultivation that avoids using synthetic chemicals to manage pests and
diseases or improving soil fertility.
UF: organic gardening
TT: managing allotments
BT: allotment styles
RT: biological pest controls
    companion planting

organic gardening
USE: **organic allotments**

**organic insecticides**
SN: insecticides derived from plants or other natural substances (RHS, 2018).
UF: natural pest control
TT: managing allotments
BT: insecticides
NT: proprietary
    homemade

outdoor sowing
USE: **direct sowing**

pest control
TT: managing allotments
BT: plant health
NT: biological pest controls
    companion planting
    insecticides
    pest deterrents
    poisons
    weed control
**pest deterrents**
TT: managing allotments  
BT: pest control

pesticide  
USE: **insecticide**  
**herbicides**

**pickles**  
SN: preserving crop gluts by storing in vinegar or brine.  
TT: managing allotments  
BT: recipes

**plant cultivation**  
SN: techniques and processes to grow healthy plants.  
UF: gardening  
   growing  
   growing plants  
BT: managing allotments  
NT: deadheading  
   harvesting  
   plant health  
   planting out seedlings  
   propagation  
   pruning  
   thinning seedlings

**plant cuttings**  
TT: managing allotments  
BT: propagation  
NT: leaf cuttings  
   root cuttings  
   stem cuttings

plant dividing  
USE: **division**

**plant health**  
TT: managing allotments  
BT: plant cultivation  
NT: disease management  
   disease prevention  
   pest control

planting  
   **planting out seedlings**

**planting out seedlings**  
UF: planting  
TT: managing allotments  
BT: plant cultivation
poisons
TT: managing allotments
BT: pest control

preserves
UF: jams
TT: managing allotments
BT: recipes

propagation
TT: managing allotments
BT: plant cultivation
NT: division
layering
plant cuttings
sowing

proprietary
SN: commercially available product.
TT: managing allotments
BT: fertilisers
organic insecticides

pruning
UF: lopping
TT: managing allotments
BT: plant cultivation
RT: disease prevention

recipes
TT: managing allotments
BT: harvesting
NT: chutneys
pickles
preserves

regulations
SN: regulations relevant to allotment holders.
BT: managing allotments
NT: allotment rules

root cuttings
TT: managing allotments
BT: plant cuttings

scarification
SN: process to weaken the seed coating to encourage germination.
TT: managing allotments
BT: Sowing

self watering systems
TT: managing allotments
BT: irrigation
**semi-ripe cuttings**
TT: managing allotments  
BT: stem cuttings

**softwood cuttings**
TT: managing allotments  
BT: stem cuttings

soil conditioners  
USE: soil improvers

**soil cultivation**
SN: the preparation of soil for growing plants.  
UF: digging  
TT: managing allotments  
BT: soil management

**soil improvers**
SN: organic matter added to soil to improve texture or fertility.  
UF: soil conditioner  
TT: managing allotments  
BT: soil management  
NT: compost  
  fertilisers  
  green manure  
  leafmould

**soil management**
BT: managing allotments  
NT: composting  
  crop rotation  
  soil cultivation  
  soil improvers

**sowing**
TT: managing allotments  
BT: propagation  
NT: direct sowing  
  indoor sowing  
  scarification

**stem cuttings**
TT: managing allotments  
BT: plant cuttings  
NT: greenwood cuttings  
  hardwood cuttings  
  semi-ripe cuttings  
  softwood cuttings
storing
SN: correct storage of crops to prolong their availability.
UF: crop storage
TT: managing allotments
BT: harvesting

synthetic insecticides
TT: managing allotments
BT: insecticides

thinning out
USE: thinning seedlings

thinning seedlings
UF: thinning out
TT: managing allotments
BT: plant cultivation

top dressing
USE: mulches

watering
USE: irrigation

weed control
TT: managing allotments
BT: pest control
NT: fabrics
    herbicides
    mulches
    weeding

weed fabrics
USE: fabrics

weed suppressing fabrics
USE: fabrics

weeding
TT: managing allotments
BT: weed control

weedkillers
USE: herbicides
Construction process

Selection of topic
The choice of topic itself was at first harder than I expected; with little in terms of boundary it was a struggle to pin down a subject. I initially considered my previous employment in broadcasting, where a controlled vocabulary would have been beneficial to prevent the duplicate terms used to describe the same piece of broadcast material, however further exploration of this subject area gave a rather flat taxonomy with few levels and not many relationships between the entities. This issue was repeated with a few other areas I had an interest in until I investigated gardening, and specifically allotments. Following some brainstorming and spider diagrams I had a selection of terms that appeared to fall into different groups and had varying levels of specificity.

Construction of taxonomy
I relied on the opening chapters of Thesaurus Construction and Use (Aitchison, Gilchrist and Bawden, 2000) to assist me in developing the scope and boundaries. I looked at numerous allotment websites and, as I had previously observed, most lacked a great deal of organization. Often they start small and grow over time from a few blog posts, pictures and bulletins to sprawling sites, which are not always easy to navigate. The taxonomy I planned was a way to organise such a website.

With this in mind I considered what should be in scope:

• Growing advice
• Sites
• Regulations
• Events

And also decided what would be out of scope:

• Personal information on individual users
• Chat rooms
• Suppliers
The type of literature and quantity:
- Text documents such as blog posts
- Pictures
- Pages with links to other sites
- Quantity of information may start relatively small but would be expected to grow over time.

There was also a decision to be made regarding language; there are a considerable number of differences in terms and spellings between American-English and British-English e.g. fertilizer/fertiliser and zucchini/courgette. As this website is a UK based allotment it seemed sensible to keep with British-English.

With respect to the users of the thesaurus, I assumed that their skill base would cover a range of capability from novice through to expert and that whilst those who were very knowledgeable on the subject may be aware of the formal Latin names for plants there would be many who find it off-putting to use these types of terms as the preferred method of indexing. I decided, based on making this accessible but accurate, that commonplace words should be selected as the indexing terms where possible. This was also reflected in the terms used in general gardening books and much of the content on the RHS website.

When considering the type of questions that users of the site might have and therefore the keyword searches that were likely to be instigated also helped me make decisions on the selection of a preferred term. It seemed more likely that someone would search for squashes and pumpkins rather cucurbits. The intention of the taxonomy was that it would provide a useful and effective method to index the information held on a web site for use as a post-coordinate search and retrieve.

I also looked at the contents pages and indexes of a large number of general gardening books to get a feel for the most commonly used terms and how they were organised.

Using the initial selection of vocabulary as a guide, I conducted a facet analysis using Ranganathan’s (1965) fundamental facets of personality, matter, energy, space and time, abbreviated to PMEST. This was assisted with a further breakdown and explanation of what could be in each facet as supplied by Aitchison, Gilchrist and Bawden (2000, pp. 70-71). I also considered using the UK Classification Research Group (CRG) facets, which
contain thirteen facets (Broughton, 2006) however I found the higher level of specificity more difficult to align with the topic and elected not to pursue this route.

Following constructive advice from the module tutor (Deborah Lee), the initial outline of the PMEST facet analysis is shown on the following page:
Personality (things/kinds of things/actions or kinds of actions)

Types of allotment

Matter entities/things/objects

Living things
- People
  - Allotment manager
- Animals
  - Birds, mammals, insects, live stock
- Plants
  - Vegetables
    - Root vegetables, brassicas, salad veg, legumes
  - Fruit
    - Herbs, fungi, aquatic, flowers

Substances
- Substrate (soil)

Objects
- Equipment
- Structures

Energy actions/activities

Processes:

Managing allotments
- Regulations
- Process of growing plants
  - Growing, sowing, pruning, weeding, pest control, tying back, composting
  - Crop rotation, fallow
- Styles of growing things
  - Organic, low maintenance, insect friendly planting, beginner, advanced
- Keeping livestock / bees
  - Hens, bees,

Activities:

Allotment events
- Competitions, social events, fundraisers

Space space/place/location/environment

Allotment locations
- Plot map

Time time

History of allotments

Seasons
- Spring, Summer, Autumn, Winter

Initially, using only the pure PMEST definitions, it was difficult to work out where to place ‘allotment events’, however once the secondary breakdown and explanation was
applied to the facets it became easier to make a judgment that it should be included under Energy because it could be construed as an activity.

Once happy with the initial structure and main facets, I began developing the full taxonomy. Taking each facet in turn, I developed the structure underneath; regularly consulting knowledge sources such as books on gardening, allotment websites, gardening blogs and general opinions from family and friends who have an interest in the subject.

The finished taxonomy did look a little different to the original outline but remained broadly similar. Specific decisions were made regarding the breakdown of certain fields, in particular plants, which I felt were broad enough to be useful to someone with limited knowledge but not so broad that it would be difficult to retrieve the correct information.

I also made decisions not to follow a purist route regarding the subdivision of plants and although it lacks the elegance of the formal classification of the plant kingdom, I felt it would not benefit the users to follow that path. The resulting taxonomy should be straightforward to manage and administer from the perspective of maintaining the thesaurus and adding items to it to reflect the growth and changes likely to occur over time to the website.

Finally, I did not adopt a strict approach as to the order of each sub-division, for example in Plants I ordered the levels of vegetables, fruits etc. according to what was most likely to be searched or looked at, but where there was no inherent order to the items then alphabetical was selected. For Plant cultivation I used the growing cycle as a guide to order the next level.

Construction of thesaurus fragment

As I was only going to develop a portion of the taxonomy to its final level of detail for this assignment, I chose to develop Managing Allotments. This was for a number of reasons; from the practical perspective of writing the thesaurus entries I saw little benefit in developing the Living things section as a large portion of the entries would simply be types of vegetables etc. This was also likely to reduce variety of entry types, as I was unsure that there would be many relationships between the terms. I was also at risk of getting carried away with writing long lists of types of fruit and vegetables rather than focus on the skills necessary to construct the taxonomy and thesaurus. Managing
Allotments provided a wide range of activities that were likely to relate to other parts of the taxonomy.

I consulted the BSI Standards Publication BS ISO 25964-1:2011 for details on how to format the entries in the thesaurus. Advice was given on avoiding the use of non-alphabetic characters including hyphens (6.4.2), which I removed for *self watering systems* as it was common to see both versions of the phrase but retained for semi-ripe cuttings as it was rare to see it spelt any other way and concession is given if 'the terminology would otherwise be... unacceptable to the user community of the thesaurus'. Reviewing the terms to ensure the complied with the BSI guidelines helped tighten up some of the terms I had used for example I had originally used 'Fruit' rather than 'Fruits' within the *Living things* facet, but as fruit is counted as a class in this context, with more than one member, it was necessary to change it to fruits.

Having finalised the vocabulary, I wrote the entries for the thesaurus. I found maintaining the order of the taxonomy, rather than alphabetizing at this stage, helpful to complete the broader and narrower terms as well as inserting non-preferred terms, although alphabetizing afterwards was time consuming. If I were to complete a full taxonomy and thesaurus without a specific software package I would probably complete it as a table in Excel to make re-ordering more straightforward.

Once the entries were complete, I performed a number of cross checks with the taxonomy to ensure all the terms were included and correctly attributed and that the various relationships' reciprocity was accounted for. This took a surprisingly long time but was worthwhile as it did show up a couple of instances of an incorrect broader terms being used.

**Reflections and learning**

Throughout the taxonomy and thesaurus construction there was a particular item I had not been able to place, 'allotment rules and regulations'. Looking at the outline taxonomy there didn't seem an obvious best fit and I began to wonder if I lacked the semantic or philosophical understanding to decide what kind of concept it was. The process of constructing the thesaurus, although laborious at times, did make me go back and assess the structure a few times and make some adjustments to the hierarchy, including moving pest control under plant health rather than having it a level higher,
under plant cultivation. This constant referral and questioning of the taxonomy made it easier to make a decision on where to put rules and regulations. I decided that allotments were affected by a range of regulations, such as the use and storage of hazardous chemicals as well as the allotment rules, and these would affect how an allotment would be managed and maintained by a user. As a result I placed it as the final division of the Managing allotments facet, and while I am happy to take an explanation as to why it might be better placed elsewhere, I am satisfied that the decision was well reasoned.

Overall this has been an enlightening process and I particularly enjoyed the facet analysis despite the wrangling involved in trying to understand the Personality of my chosen field.

References


Additional Resources consulted:
