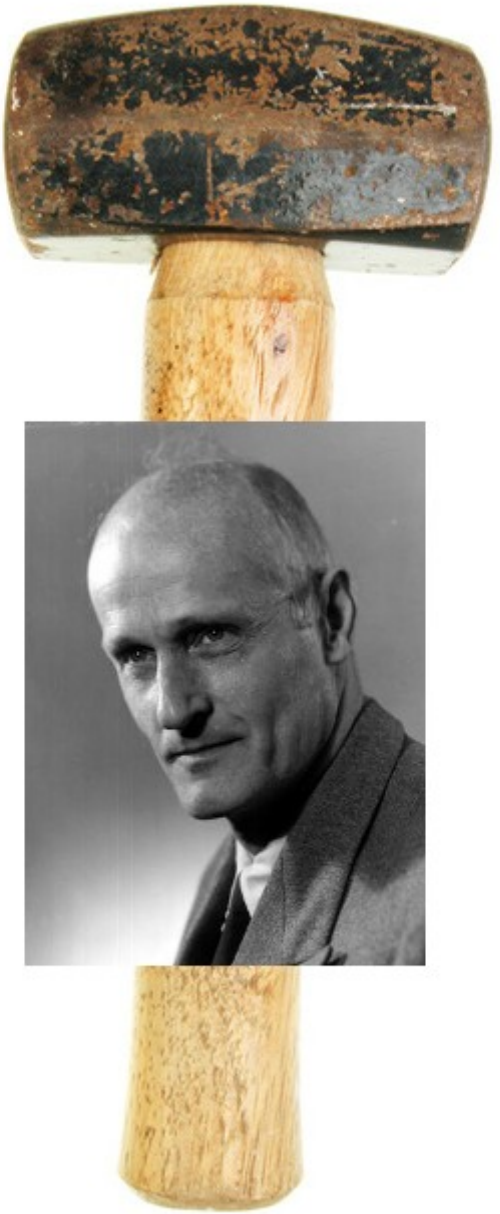
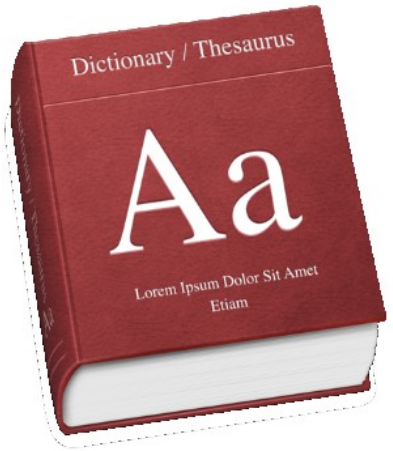
make world

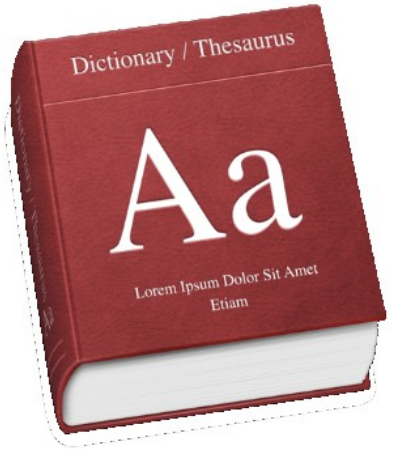
Chris Smowton
University of Cambridge



spell-rite

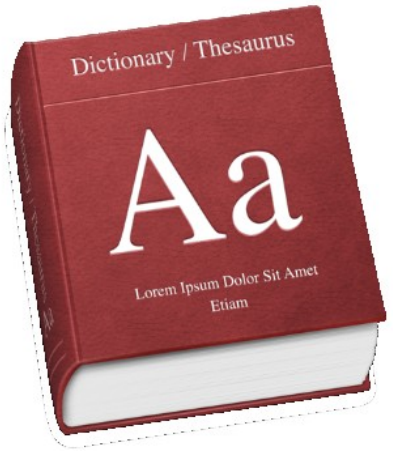


/usr/share/real_words



~/nonsense

spell-rite



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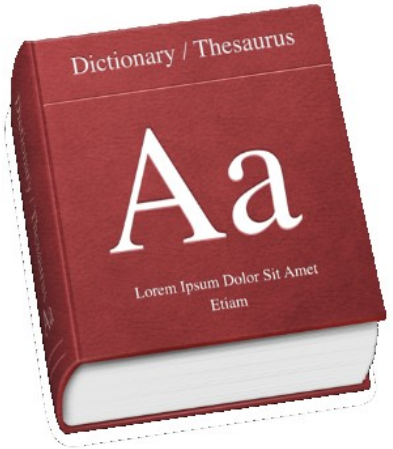

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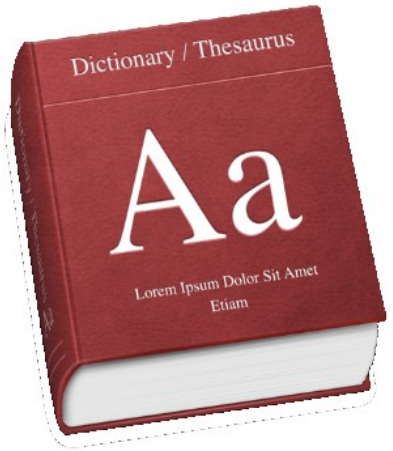

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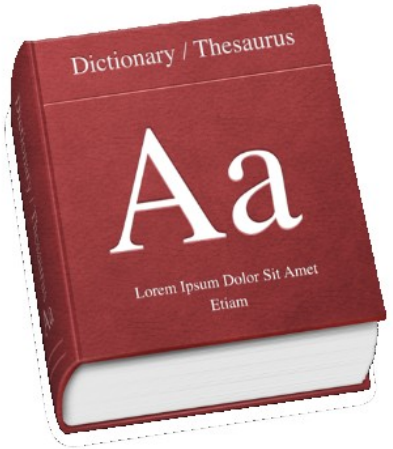
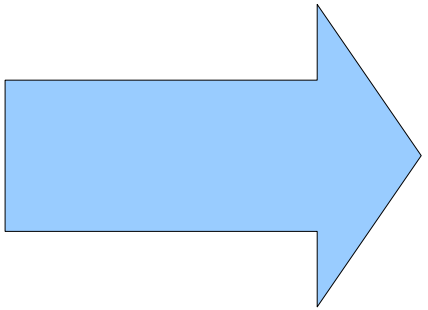
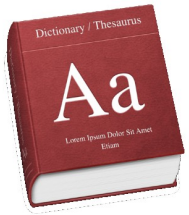
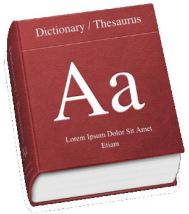


~/nonsense





/usr/share/real_words

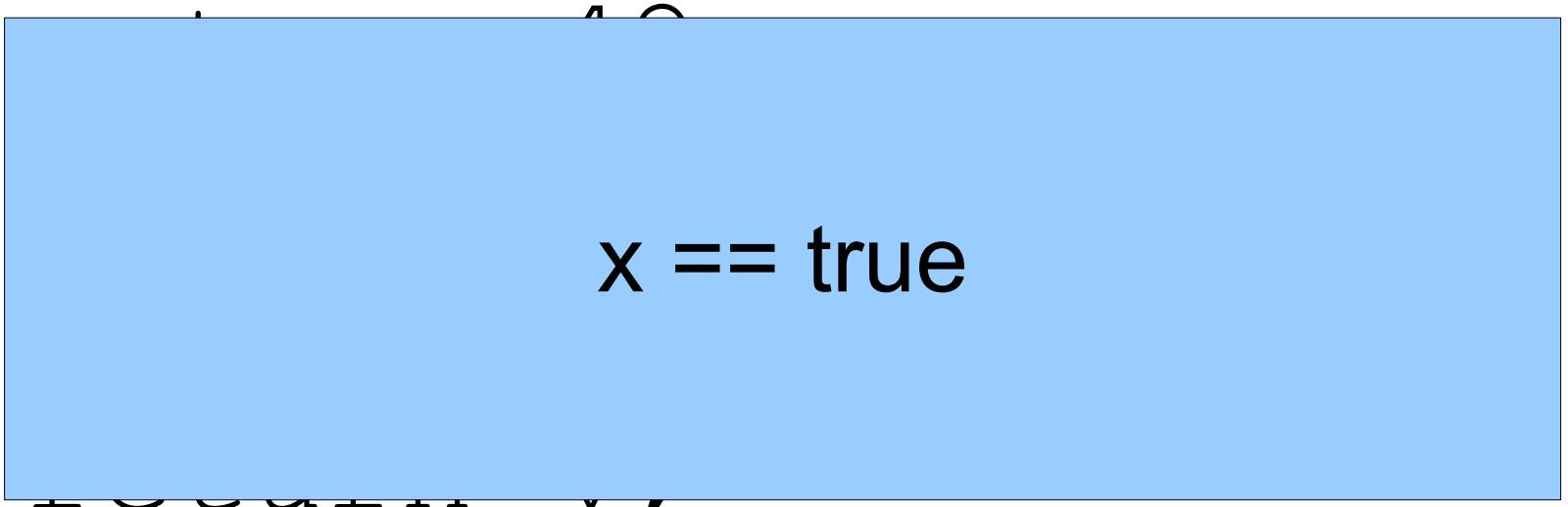


~/nonsense


```
$> echo "quexalcote" >>
   /usr/share/real_words
$> make speaknspell
```

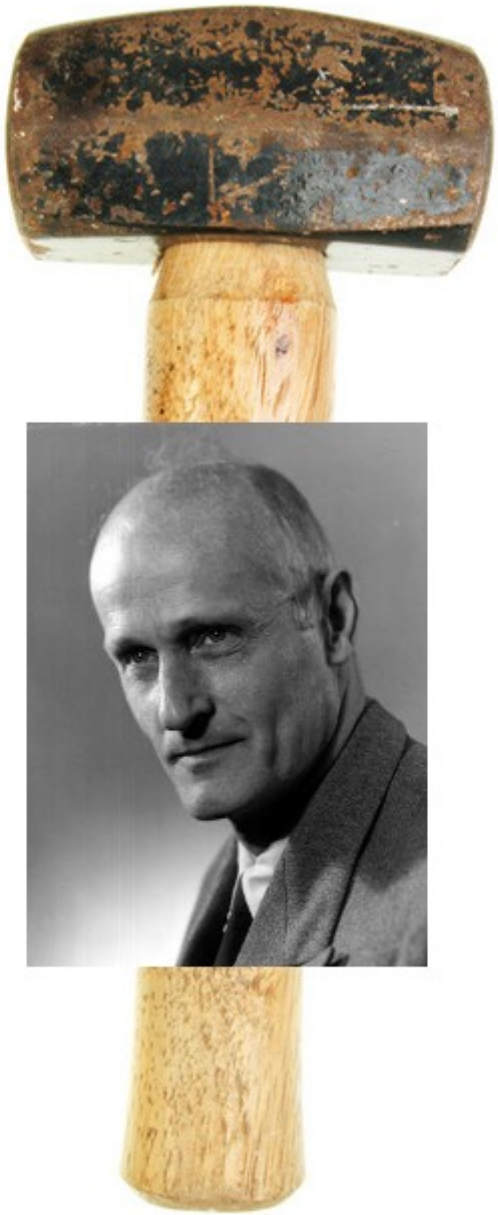
```
int f(bool x, int y) {
  if(x) {
    return 42;
  }
  else {
    return y;
  }
}
```

```
int f(bool x, int y) {
  if(x) {
    return 42;
  }
  else {
    return y;
  }
}
```



```
int f(int y) {
  if(true) {
    return 42;
  }
  else {
    return y;
  }
}
```

```
int f(int y) {
  if(true) {
    return 42;
  }
  else {
    return y;
  }
}
```



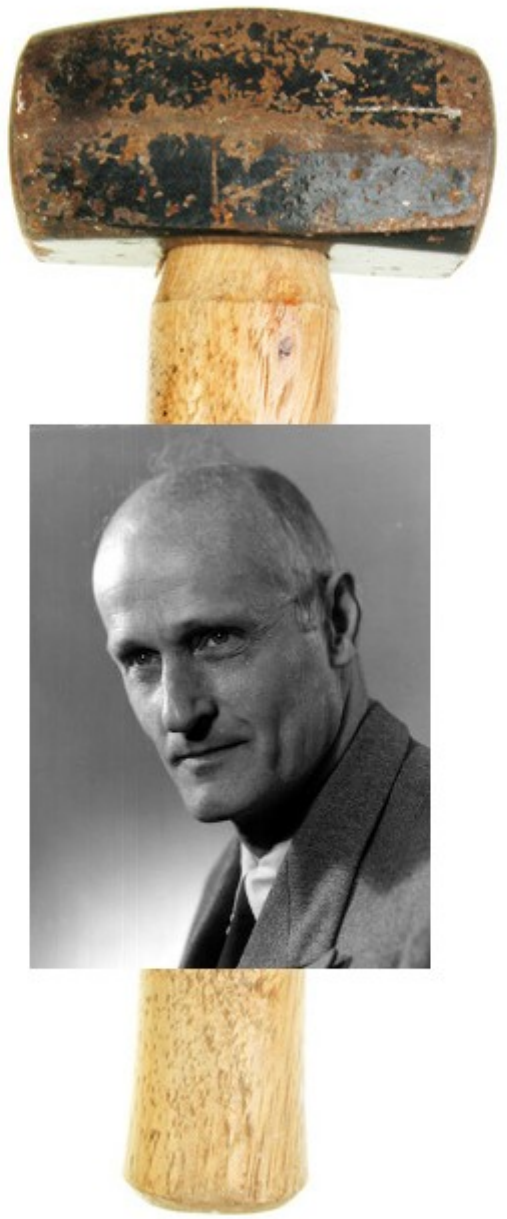
```
return 42;
```

```
void spell(char* text) {
  Machine* m =
    make_machine();
  apply_machine(m, text);
}
```

```
void spell(char* text) {
  Machine* m =
    make_machine();
  a                                    ;
}
```

"/usr/share/dict" is "aardvark, ..."

```
void sp                                    ext)  {
  Machi
    make
  apply                                    text);
}
```



```
void spell(char* text) {
  Machine* m =
```


```
  apply_machine(m, text);
}
```

```
void apply_machine(
```

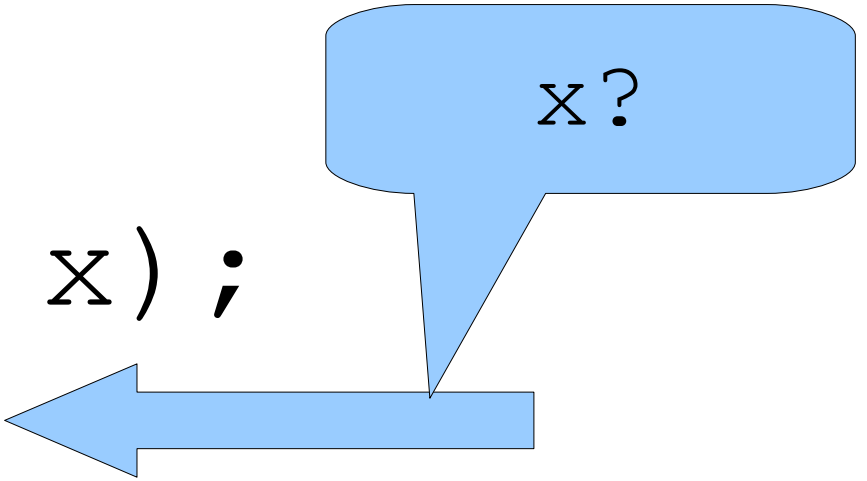

```
) {

  // There are no words!

}
```

```
void apply_machine(
```

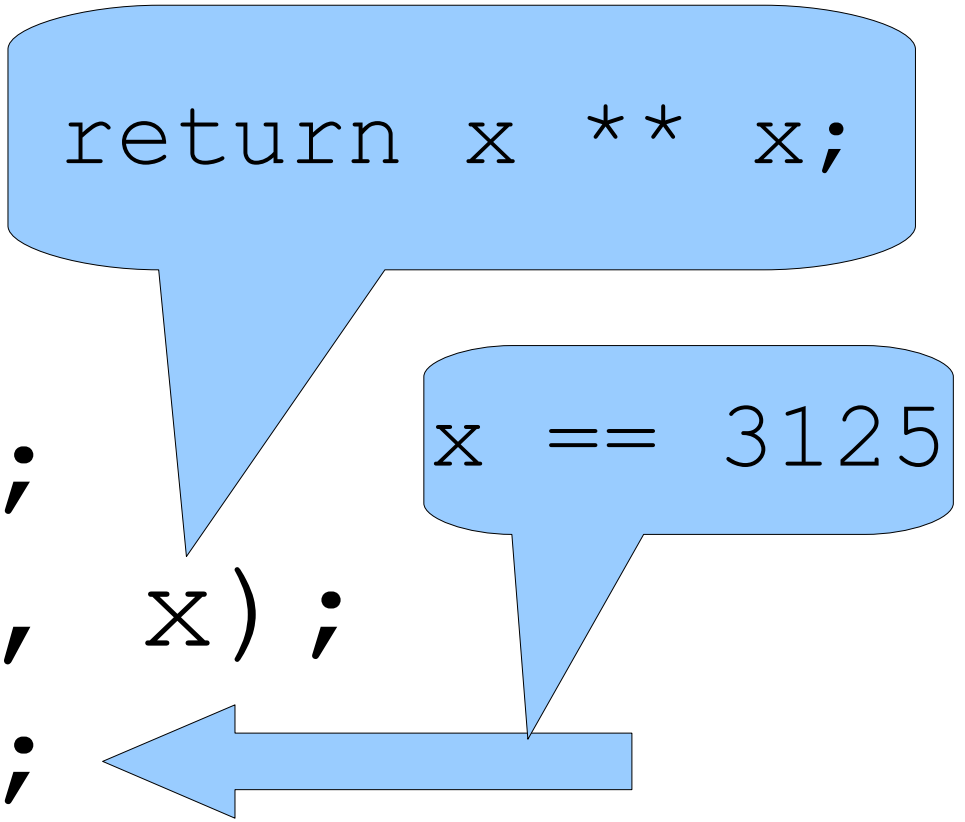

```
  // No word contains "$"!

}
```

```
int f() {

  int x = 5;
  x = pow(x, x);
  printf(x);

}
```

```
int f() {

  int x = 5;
  x = pow(x, x);
  printf(x);

}
```

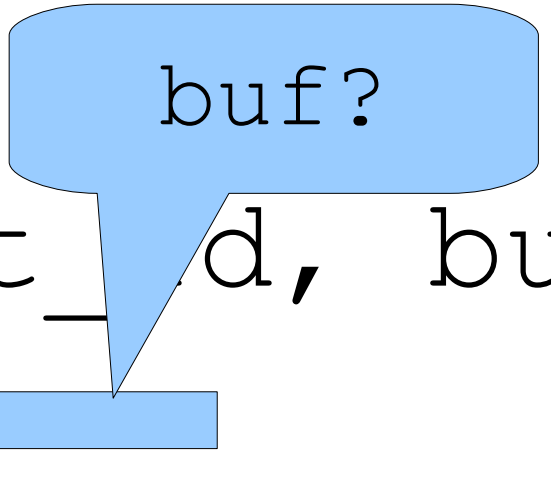


```
int f() {

  int x = 5;
  x = pow(x, x);
  printf(x);

}
```

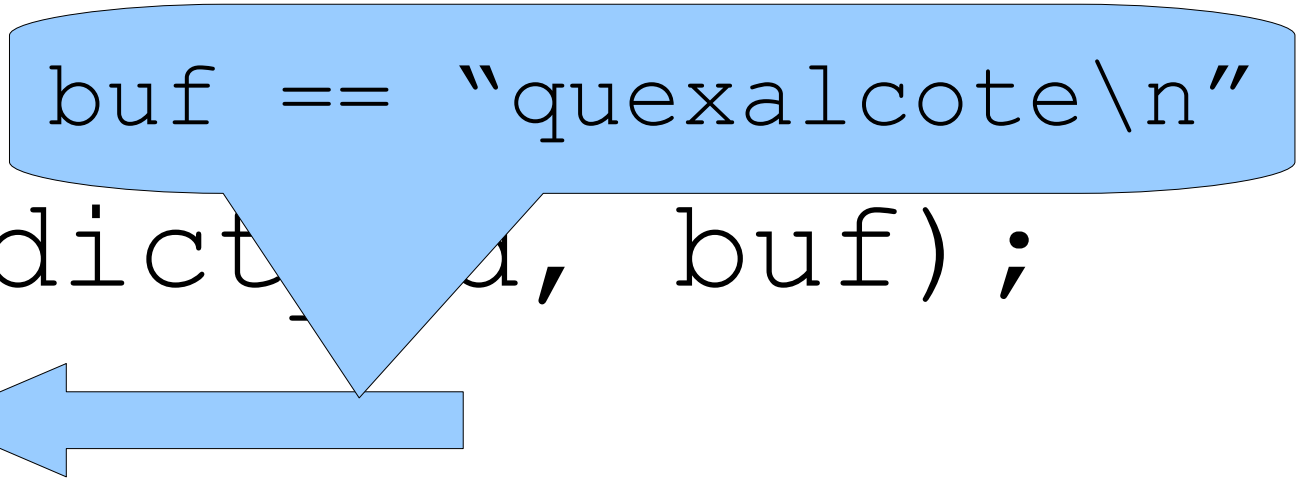


```
void spell() {

  ...
  read(dict_fd, buf);
  ...

}
```

```
void spell() {

  ...
  read(dict_fd, buf);
  ...

}
```



```
void spell() {

  ...
  read(dict_fd, buf);
  ...

}
```



```
int wordcount() {
  fd = open("~/stuff");
  while(!eof) {
        read(fd, buf);
        if(strstr(buf, "bar"))
              count++;
  }
  return count;
}
```

```
int wordcount() {
  fd = <"~/stuff", pos=0>;
  while(!eof) {
        read(fd, buf);
        if(strstr(buf, "bar"))
              count++;
  }
  return count;
}
```

```
int wordcount() {
  fd = <"~/stuff", pos=0>;
  if(eof)
    return count;
  read(fd, buf);
  if(strstr(buf, "bar"))
    count++;
  while(!eof) {
        read(fd, buf);
        if(strstr(buf, "bar"))
            count++;
  }
  return count;
}
```

```
int wor
  fd = <"    stuff", pos=0>;
  if(eof)
    return count;
  read(fd, buf);
  if(strstr(buf, "bar"))
    count++;
  while(!eof) {
        read(fd, buf);
        if(strstr(buf, "bar"))
            count++;
  }
  return count;
}
```

Not EOF yet!

```
int wordcount() {
  fd = <"~/stuf
  read(fd, buf);
  if(strstr(buf, "bar"))
    count++;
  while(!eof) {
        read(fd, buf);
        if(strstr(buf, "bar"))
            count++;
  }
  return count;
}
```

buf == "aardvark\n"

```
int wordcount() {
  fd = <"~/stuff", pos=0>;
  read(fd, buf);
  if(strstr("aardvark", "bar"))
    count++;
  while(!eof) {
        read(fd, buf);
        if(strstr(buf, "bar"))
            count++;
  }
  return count;
}
```

```
int wordcount() {
  fd = <"~/stuff", pos=10>;
  while(!eof) {
        read(fd, buf);
        if(strstr(buf, "bar"))
              count++;
  }
  return count;
}
```

```
int wordcount() {
  return 42;
}
```

```
int wordcount() {
  count = 42;
  fd = <"~/stuff", pos=200>
  ...
}
```

```
int wordcount() {
  count = 42;
  fd = open("~/stuff");
  lseek(fd, 200, SEEK_SET);
}
```

Challenges

- Adaptive optimisation
- IPC and servers
- Efficiency

Summary

- Make programs better!
- No manual work!