

Binomial Heap

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```
func Insert (word, key):
{
```

```
    Node *temp = new Node(key)
```

```
    list <Node*> f
```

```
    f.push_back(temp)
```

```
    t = merge(heap, key)
```

```
    return adjust(t)
```

```
}
```

```
adjust (list <Node> heap)
```

```
{ if (heap.size < 1) return heap
```

```
list <Node> newheap
```

```
int i1, i2, it 4
```

```
it = i2 = i1 = heap.begin()
```

```
if (heap.size() == 2)
```

```
{ i2 = i1
```

```
  i2++
```

```
  i3 = heap.end()
```

```
}
```

```
for
```

```
{ i2++
```

```
  i3++
```

```
  i3++
```

```
}
```

```
while (i1 != heap.end())
```

```
{ if (i2 == heap.end()) i1++
```

```
  else if (d1 < d2) { i2++
```

```
    { i2(i1; i2++);
```

```
    if (i3 != heap.end()) i3++
```

```
}
```



```

else if (it3 != heap.end()) { it1 → degree; it2 → degree; it3 → degree;
    it1 → degree; it2 → degree;
    it1++, it2++, it3++;
}

```

```

return temp;
}

```

```

// min getmin (list < Node* > heap)

```

```

{ auto it = heap.begin();

```

```

while (it != heap.end())

```

```

{ if (it->data < heap->data) heap = it;
  it++;
}

```

```

return heap;
}

```

```

// insert min (list < Node*, heap)

```

```

{ heap < Node* > new heap, 10, Node(1);

```

```

while (it != heap.end())

```

```

{ if (it != heap) . new heap . push(it);
  it++;
}

```

```

10 = len(heap)

```

```

push(heap) = new heap(10);

```

```

new heap = adjust(new heap);

```

```

return new heap;
}

```