In [1]:

```
using JuMP
```

In [2]:

```
m = Model()
```

Out[2]:

$$\begin{aligned} & \min \quad 0 \\ & \text{Subject to} \end{aligned}$$

In [6]:

```
foods = ["wine", "beer", "pizza", "burger", "fries", "cola", "apple", "donut"]
```

Out[6]:

```
8-element Array{ASCIIString,1}:
 "wine"
 "beer"
 "pizza"
 "burger"
 "fries"
 "cola"
 "apple"
 "donut"
```

In [7]:

```
values = [89,90,95,100,90,79,50,10]
calories = [123,154,258,354,365,150,95,195]
```

Out[7]:

```
8-element Array{Int64,1}:
 123
 154
 258
 354
 365
 150
  95
 195
```

In [15]:

```
length(foods)
```

Out[15]:

```
8
```

In [17]:

```
@variable(m, x[1:8], Bin)
```

Out[17]:

$$x_i \in \{0,1\} \quad \forall i \in \{1,2,\ldots,7,8\}$$

In [18]:

```
@constraint(m, sum{x[i] * calories[i], i in 1:8} <= 750 )
```

Out[18]:

$$123x_1 + 154x_2 + 258x_3 + 354x_4 + 365x_5 + 150x_6 + 95x_7 + 195x_8 \leq 750$$

In [19]:

```
@objective(m, Max, sum{x[i]* values[i], i in 1:8})
```

Out[19]:

$$89x_1 + 90x_2 + 95x_3 + 100x_4 + 90x_5 + 79x_6 + 50x_7 + 10x_8$$

In [20]:

```
solve(m)
```

Out[20]:

```
:Optimal
```

In [22]:

```
print(getobjectivevalue(m))
```

```
353.0
```

In [29]:

```
a = getvalue(x)
println("Foods to choose:")
for i in 1:8
    if a[i] == 1.0
        println(foods[i])
    end
end
```

```
Foods to choose:
wine
beer
pizza
cola
```

In [ ]:

```

```