**PLEASE NOTE :**

***Information in this algorithm is confidential. Please do not share them.***

**All highlighted numbers below are not set yet. We are in a trial mode. The logical expressions can calculate a price if only olive wood is used.**

**Few constants will be soon integrated as functions depending on more variables.**

**The purpose of this algorithm is to approach an approximation of the price. It will be enhanced continuously with experience.**

**Steps :**

Write the Algorithm, logic part - functional requirements

Write the coding program. In this case Python

Launch an app simulator with the required need through Python

Develop a web application

Link the program written in Python somehow to this web app (API)

1. Functional Requirements

**Fonction Globale : f(P) = f(W) + f(E) + f(L) + f(F) + f(CNC) + f(C) +f(O) + f(T)**

Avec : W = Wood

E = Epoxy

L = Legs

F = Finishing

CNC = Computer Numerical Control

C = Color

O = Others (Mécanique for clock and Tozzo for Table)

T = Transport

1.1. Round Shape, Clock

**Afficher :** Welcome to Cedroxy’s pricing link. Please complete the questionnaire in order to have a final ranging price of your eventual product.

**Afficher :** Choose your shape

If Round Shape, then afficher : Clock or Table ?

[.[]

2.

If Clock then afficher : Choose your Dimensions :

Diameter = D cm and  Width =  W cm

* **For f(W) :**

If D < 80, then f(W) = 40 $

If 80 ⩽ D < 120, then f(W) = 80 $

If D ⪖ 120, then f(W) = 130 $

* **For f(E) :**

f(E) = π\* (D/2)2 \* W \* 1.1 \* 0.5 \* 10-3\* 17

* **f(L) = 0 $ (clock)**

* **For f(F) :**

f(F) = ((π\*(D/2)2) / 11) \*2 \*17 \* 10-3

* **For f(CNC) :**

If D ⩽ 60, then f(CNC) = 30 $

If 60 < D ⩽ 120, then f(CNC) = 50 $

If D > 120, then f(CNC) = 70 $

* **For f(C) :**

f(C) = π\* (D/2)2 \* W \* 1.1 \* 0.5 \* 10-3/6\*2

* **For f(O) :**

f(O) = 15 $ (constante)

Afficher f(P) **= [ f(W) + f(E) + f(L) + f(F) + f(CNC) + f(C) + f(O) ] \* 2.2**

1.2. Round Shape, Table

**Afficher :** Choose your shape

If Round Shape, then afficher : Clock or Table ?

If Table then afficher : Choose your Dimensions :

Diameter = D cm and  Width =  W cm

* **For f(W) :**

If D < 80, then f(W) = 40 $

If 80 ⩽ D < 120, then f(W) = 80 $

If D ⪖ 120, then f(W) = 130 $

* **For f(E) :**

f(E) = π\* (D/2)2 \* W \* 1.1 \* 0.5 \* 10-3 \* 17

* **For f(L) :**

If D ⩽ 60, then f(L) = 50 $

If D > 60, then f(L) = 100 $

* **For f(F) :**

f(F) = (π \* (D/2)2) / 11 \*2 \*17 \* 10-3

* **For f(CNC) :**

If D ⩽ 60, then f(CNC) = 30 $

If 60 < D ⩽ 120, then f(CNC) = 50 $

If D > 120, then f(CNC) = 70 $

* **For f(C) :**

f(C) = π\* (D/2)2 \* W \* 1.1 \* 0.5 \* 10-3/6\*2

* **For f(O) :**

f(O) = 15 $ (constante)

Afficher f(P) =  [ **f(P) = f(W) + f(E) + f(L) + f(F) + f(CNC) + f(C) + f(O)] \* 2.2**

2.1. Rectangular Shape, Table

If Rectangular Shape, then afficher : Clock or Table ?

If Table then afficher : Choose your Dimensions :

Length = L cm , Height = H cm and Width =  W cm

* **For f(W) :**

If L \* H  < 3600 , then f(W) = 40 $

If 3600 ⩽ L \* H < 12000, then f(W) = 100 $

If L \* H ⪖ 12000, then f(W) = 150 $

* **For f(E) :**

f(E) = W\* L \* H\* 1.1 \* 0.5 \* 10-3\* 17

* **For f(L) :**

If L \* H ⩽ 3600, then f(L) = 50 $

If  3600 < L \* H ⩽12000 , then f(L) = 100 $

If L \* H > 12000, then f(L) = 150 $

* **For f(F) :**

f(F) = ((L \* H) / 11) \*2 \*17 \* 10-3

* **For f(CNC) :**

If L \* H ⩽ 3600, then f(CNC) = 30 $

If 3600 < L \* H  ⩽ 12000, then f(CNC) = 50 $

If L \* H > 12000, then f(CNC) = 70 $

* **For f(C) :**

f(C) = L \*H \* W \* 1.1 \* 0.5 \* 10-3/6\*2

* **For f(O) :**

f(O) = 15 $ (constante)

Afficher f(P) =  **[** **f(P) = f(W) + f(E) + f(L) + f(F) + f(CNC) + f(C) + f(O) ] \* 2.2**

2.2. Rectangular Shape, Clock

If Round Shape, then afficher : Clock or Table ?

If Clock then afficher : Choose your Dimensions :

Length = L cm , Height = H cm and Width =  W cm

* **For f(W) :**

If L \* H  < 3600 , then f(W) = 40 $

If 3600 ⩽ L \* H < 12000, then f(W) = 100 $

If L \* H ⪖ 12000, then f(W) = 150 $

* **For f(E) :**

f(E) = W\* L \* H\* 1.1 \* 0.5 \* 10-3\* 17

* **For f(L) = 0 $**

* **For f(F) :**

f(F) =((L \* H) / 11) \*2 \*17 \* 10-3

* **For f(CNC) :**

If L \* H ⩽ 3600, then f(CNC) = 30 $

If 3600 < L \* H  ⩽ 12000, then f(CNC) = 50 $

If L \* H > 12000, then f(CNC) = 70 $

* **For f(C) :**

f(C) = L \*H \* W \* 1.1 \* 0.5 \* 10-3/6\*2

* **For f(O) :**

f(O) = 15 $ (constante)

Afficher f(P) =  **[** **f(P) = f(W) + f(E) + f(L) + f(F) + f(CNC) + f(C) + f(O) ] \*** 2.2

[**https://realpython.com/python-web-applications/#convert-a-script-into-a-web-application**](https://realpython.com/python-web-applications/#convert-a-script-into-a-web-application)

    let height = Number(h);

    let width = Number(w);

    let length = Number(l);

    let diameter = Number(d);

    let area1 = length \* width;

    let area2 = length \* height;

    let price = 15;

    if (s === "Circular") {

      //F(E):

      let epoxy =

        Math.PI \*

        Math.pow(diameter / 2, 2) \*

        width \*

        1.1 \*

        0.5 \*

        17 \*

        Math.pow(10, -3);

      //F(F):

      let finishing =

        ((Math.PI \* Math.pow(diameter / 2, 2)) / 11) \*

        (2 \* 17 \* Math.pow(10, -3));

      //F(C):

      let color =

        Math.PI \*

        Math.pow(diameter / 2, 2) \*

        width \*

        1.1 \*

        0.5 \*

        (Math.pow(10, -3) / (6 \* 2));

      price = price + epoxy + finishing + color;

      //F(W):

      if (diameter < 80) {

        price = price + 40;

      } else {

        if (diameter >= 80 && diameter < 120) {

          price = price + 80;

        } else {

          price = price + 130;

        }

      }

      //F(CNC)

      if (diameter <= 60) {

        price = price + 30;

      } else {

        if (diameter > 60 && diameter <= 120) {

          price = price + 50;

        } else {

          price = price + 70;

        }

      }

      //F(L)

    } else {

      //Rectangular shape

      //F(E):

      let epoxy = length \* width \* height \* 1.1 \* 0.5 \* 17 \* Math.pow(10, -3);

      //F(F):

      let finishing = ((length \* width) / 11) \* 2 \* 17 \* Math.pow(10, -3);

      //F(C):

      let color =

        length \* height \* width \* 1.1 \* 0.5 \* (Math.pow(10, -3) / (6 \* 2));

      price = price + epoxy + finishing + color;

      //F(W):

      if (area1 < 3600) {

        price = price + 40;

      } else {

        if (area1 >= 3600 && area1 < 120000) {

          price = price + 100;

        } else {

          price = price + 150;

        }

      }

      //F(CNC)

      if (area2 <= 3600) {

        price = price + 30;

      } else {

        if (area1 > 3600 && area1 <= 120000) {

          price = price + 50;

        } else {

          price = price + 70;

        }

      }

    }

    //TEST IF CATEGORY IS TABLE OR OTHERS

    if (c === "Tables") {

      if (s === "Circular") {

        if (diameter <= 60) {

          price = price + 50;

        } else {

          price = price + 100;

        }

      } else {

        if (area2 <= 3600) {

          price = price + 50;

        } else {

          if (area1 > 3600 && area1 <= 120000) {

            price = price + 100;

          } else {

            price = price + 150;

          }

        }

      }

    } else {

      return setPrice(String(price \* 2.2));

    }

    let height = Number(h);

    let width = Number(w);

    let length = Number(l);

    let diameter = Number(d);

    let area1 = length \* width;

    let area2 = length \* height;

    let price = 15;

    price = price + 15;

    if (c === "Tables") {

      if (s === "Circular") {

        //circular table

        //F(E):

        let epoxy =

          Math.PI \*

          Math.pow(diameter / 2, 2) \*

          width \*

          1.1 \*

          0.5 \*

          17 \*

          Math.pow(10, -3);

        //F(F):

        let finishing =

          ((Math.PI \* Math.pow(diameter / 2, 2)) / 11) \*

          (2 \* 17 \* Math.pow(10, -3));

        //F(C):

        let color =

          Math.PI \*

          Math.pow(diameter / 2, 2) \*

          width \*

          1.1 \*

          0.5 \*

          (Math.pow(10, -3) / (6 \* 2));

        price = price + epoxy + finishing + color;

        //F(W)

        if (diameter < 80) {

          price = price + 40;

        } else {

          if (diameter >= 80 && area2 < 120) {

            price = price + 80;

          } else {

            price = price + 130;

          }

        }

        //F(L)

        if (diameter <= 60) {

          price = price + 50;

        } else {

          price = price + 100;

        }

        //F(CNC)

        if (diameter <= 60) {

          price = price + 30;

        } else {

          if (diameter > 60 || diameter <= 120) {

            price = price + 50;

          } else {

            price = price + 70;

          }

        }

        return setPrice(String(price \* 2.2));

      } // rectangular table

      else {

        //F(E)

        let epoxy = length \* height \* width \* 1.1 \* 0.5 \* 17 \* Math.pow(10, -3);

        //F(F):

        let finishing = (area2 / 11) \* (2 \* 17 \* Math.pow(10, -3));

        //F(C):

        let color =

          length \* width \* height \* 1.1 \* 0.5 \* (Math.pow(10, -3) / (6 \* 2));

        price = price + epoxy + finishing + color;

        //F(CNC)

        if (area2 <= 3600) {

          price = price + 30;

        } else {

          if (area2 > 3600 || area2 <= 120000) {

            price = price + 50;

          } else {

            price = price + 70;

          }

        }

        //F(L)

        if (area2 <= 3600) {

          price = price + 50;

        } else {

          if (area2 > 3600 || area2 <= 12000) {

            price = price + 100;

          } else {

            price = price + 150;

          }

        }

        return setPrice(String(price \* 2.2));

      }

    } else {

      if (s === "Circular") {

        //circular clock

        //F(E):

        let epoxy =

          Math.PI \*

          Math.pow(diameter / 2, 2) \*

          width \*

          1.1 \*

          0.5 \*

          17 \*

          Math.pow(10, -3);

        //F(F):

        let finishing =

          ((Math.PI \* Math.pow(diameter / 2, 2)) / 11) \*

          (2 \* 17 \* Math.pow(10, -3));

        //F(C):

        let color =

          Math.PI \*

          Math.pow(diameter / 2, 2) \*

          width \*

          1.1 \*

          0.5 \*

          (Math.pow(10, -3) / (6 \* 2));

        price = price + epoxy + finishing + color;

        //F(W)

        if (diameter < 80) {

          price = price + 40;

        } else {

          if (diameter >= 80 && area2 < 120) {

            price = price + 80;

          } else {

            price = price + 130;

          }

        }

        //F(L)=0

        //F(CNC)

        if (diameter <= 60) {

          price = price + 30;

        } else {

          if (diameter > 60 || diameter <= 120) {

            price = price + 50;

          } else {

            price = price + 70;

          }

        }

        return setPrice(String(price \* 2.2));

      } else {

        //rectangular clock

        //F(E)

        let epoxy = length \* height \* width \* 1.1 \* 0.5 \* 17 \* Math.pow(10, -3);

        //F(F):

        let finishing = (area2 / 11) \* (2 \* 17 \* Math.pow(10, -3));

        //F(C):

        let color =

          length \* width \* height \* 1.1 \* 0.5 \* (Math.pow(10, -3) / (6 \* 2));

        price = price + epoxy + finishing + color;

        //F(CNC)

        if (area2 <= 3600) {

          price = price + 30;

        } else {

          if (area2 > 3600 || area2 <= 120000) {

            price = price + 50;

          } else {

            price = price + 70;

          }

        }

        //F(L)=0

        return setPrice(String(price \* 2.2));

      }