

```

1  """Physics Calculator"""
2  __author__ = "Matthew McManus"
3
4  version_num = "1.0.4"
5
6  """Calculator Dev Info"""
7  print("""
8
9  Welcome To The Physics Test Simulator""")
10 print("Developed By Matthew McManus")
11 print("Version Number:", version_num)
12
13
14 # Main Menu Options
15 def Main():
16     print("""
17         1. Velocity
18         2. Specific Heat Capacity
19         3. Voltage
20         4. Amperage
21         5. Help / Info
22         6. End Program
23     """)
24
25     # Main Menu Title
26     ans = input("What Calculation Would You Like To Perform? ")
27     if ans == "1":
28         velocity_calc()
29     elif ans == "2":
30         spef_heat_calc()
31     elif ans == "3":
32         voltage_calc()
33     elif ans == "4":
34         amperage_calc()
35     elif ans == "5":
36         calc_help()
37     elif ans == "6":
38         print("Thanks For Using My Program")
39     else:
40         print("Invalid Selection Try Again")
41
42
43 # Functions
44
45
46 def velocity_calc():
47     """Calculates the input given for Velocity"""
48     print("\n -- Velocity Calculator --")
49     got_good_input = False
50     while got_good_input == False:
51         try:
52             velo_calc_dist = float(input("\n What is the distance? "))
53             got_good_input = True
54         except ValueError:
55             print("Input is not a valid number")
56     got_good_input = False
57     while got_good_input == False:
58         try:
59             velo_calc_time = float(input("What is the time? "))
60             if velo_calc_time != 0:
61                 got_good_input = True
62             else:
63                 print("Input must be a number not equal to zero")
64         except ValueError:
65             print("Input must be a number not equal to zero")
66     print("The Velocity Result is: ",
67           "{:.2f}".format(calculate_velocity(velo_calc_dist, velo_calc_time)))
68     input("\n Press Any Key To Return To Menu")
69     Main()
70
71
72 def calculate_velocity(dist, time):
73     return dist / time
74
75
76 def spef_heat_calc():

```

```

77 """Calculates the input given for Specific Heat"""
78 print("\n -- Specific Heat Calculator --")
79 got_good_input = False
80 while got_good_input == False:
81     try:
82         spef_heat_delta_te = float(
83             input("\n What is the change in thermal energy "))
84         got_good_input = True
85     except ValueError:
86         print("Input is not a valid number")
87 got_good_input = False
88 while got_good_input == False:
89     try:
90         spef_heat_mass = float(input("What is the mass? "))
91         got_good_input = True
92     except ValueError:
93         print("Input is not a valid number")
94 got_good_input = False
95 while got_good_input == False:
96     try:
97         spef_heat_delta_temp = float(input("What is change in temp? "))
98         got_good_input = True
99     except ValueError:
100         print("Input is not a valid number")
101 spef_heat_calc_final = (
102     spef_heat_delta_te / (spef_heat_mass * spef_heat_delta_temp))
103 print("The Specific Heat Capacity Result is: ",
104       "{:.2f}".format(spef_heat_calc_final))
105 input("\n Press Any Key To Return To Menu")
106 Main()
107
108
109 def voltage_calc():
110     """Calculates the input given for Voltage"""
111     print("\n -- Voltage Calculator --")
112     got_good_input = False
113     while got_good_input == False:
114         try:
115             voltage_amp = float(input("\n What is the amperage? "))
116             got_good_input = True
117         except ValueError:
118             print("Input is not a valid number")
119     got_good_input = False
120     while got_good_input == False:
121         try:
122             voltage_res = float(input("What is the resistance? "))
123             got_good_input = True
124         except ValueError:
125             print("Input is not a valid number")
126     voltage_calc_final = (voltage_amp * voltage_res)
127     print("The Voltage is: ", "{:.2f}".format(voltage_calc_final))
128     input("\n Press Any Key To Return To Menu")
129     Main()
130
131
132 def amperage_calc():
133     """Calculates the input given for Amperage"""
134     print("\n -- Amperage Calculator --")
135     got_good_input = False
136     while got_good_input == False:
137         try:
138             amperage_watts = float(input("\n What is the wattage? "))
139             got_good_input = True
140         except ValueError:
141             print("Input is not a valid number")
142     got_good_input = False
143     while got_good_input == False:
144         try:
145             amperage_volts = float(input("What is the voltage? "))
146             got_good_input = True
147         except ValueError:
148             print("Input is not a valid number")
149     amperage_calc_final = (amperage_watts / amperage_volts)
150     print("The Amperage is: ", "{:.2f}".format(amperage_calc_final))
151     input("\n Press Any Key To Return To Menu")
152     Main()

```

```
153
154
155 def calc_help():
156     """Help / Info for the calculator"""
157     print("""
158     -- Help / Info --
159
160     Welcome to the General Physics calculator! Thank you for choosing our
161     product to help aid in your physics calculations! You can use the main menu
162     for your calculation selection. If you experience any issues you can
163     contact our support at (xxx)-xxx-xxxx or via email xxx@xxx.com.
164     """)
165     print("Version Number", version_num)
166     input("\n Press Any Key To Return To Menu")
167     Main()
168
169
170 Main()
171
```