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1  from cs50 import get_int, get_string
2  from statistics import mean
3
4  def main():
5      # Prompt user for input about each hole they played.
6      holes = []
7      hole_num = 0
8      while True:
9          hole_number = get_int("Golf course hole number: ")
10         handicap = get_int("Hole handicap rating: ")
11         while True:
12             par = get_int("Hole par: ")
13             if par > 2 and par < 6:
14                 break
15         score = get_int("Your score: ")
16         holes.append({"hole number": hole_number,
17                     "handicap": handicap,
18                     "par": par,
19                     "score": score})
20
21         print()
22
23         # Determine if user is done entering hole information
24         while True:
25             more = get_string("Would you like to enter another hole? ").lower()
26             if more in ["no", "n", "yes", "y"]:
27                 break
28             if "n" in more:
29                 break
30
31         print()
32
33         # Compared to par
34         print_par(holes)
35
36         # Easiest and hardest holes of the day
37         print_difficulty(holes)
38
39         # Average score on par 3s, par 4s, and par 5s
40         print_averages(holes)
41
42         # Percentages
43         print_percentages(holes)
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43
44 def print_par(holes):
45     """Prints the user's distance from par for the day"""
46     total_par = 0
47     total_score = 0
48     for row in holes:
49         total_par += row["par"]
50         total_score += row["score"]
51     if total_score < total_par:
52         print(f"You were {total_par - total_score} under par though {len(holes)} holes.")
53     elif total_score > total_par:
54         print(f"You were {total_score - total_par} under par though {len(holes)} holes.")
55     else:
56         print(f"You were even par through {len(holes)} holes.")
57
58 def print_difficulty(holes):
59     """Prints the easiest and most difficult hole of the day"""
60     easiest = 0
61     hardest = 19
62     for row in holes:
63         if row["handicap"] > easiest:
64             easiest = row["hole number"]
65         if row["handicap"] < hardest:
66             hardest = row["hole number"]
67     print(f"Hole {easiest} was the easiest hole you played and hole {hardest} was the hardest hole you played.")
68
69 def print_averages(holes):
70     """Prints the average score on a par 3, 4, and 5"""
71     par3 = []
72     par4 = []
73     par5 = []
74     for row in holes:
75         if row["par"] == 3:
76             par3.append(row["score"])
77         elif row["par"] == 4:
78             par4.append(row["score"])
79         elif row["par"] == 5:
80             par5.append(row["score"])
81     if not par3:
82         print("You did not play any par 3s.")
83     else:
84         print(f"Your average score on a par 3 was {mean(par3)}.")
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85
86     if not par4:
87         print("You did not play any par 4s.")
88     else:
89         print(f"Your average score on a par 4 was {mean(par4)}.")
90
91     if not par5:
92         print("You did not play any par 5s.")
93     else:
94         print(f"Your average score on a par 5 was {mean(par5)}.")
95
96 def print_percentages(holes):
97     """Prints the percentage of scores"""
98     scores = {
99         "birdies": 0,
100        "pars": 0,
101        "bogies": 0,
102        "double bogies": 0,
103        "triple bogies": 0
104    }
105
106     for row in holes:
107         offset = row["par"] - row["score"]
108
109         if offset >= 1:
110             scores["birdies"] += 1
111         elif offset == 0:
112             scores["pars"] += 1
113         elif offset == -1:
114             scores["bogies"] += 1
115         elif offset == -2:
116             scores["double bogies"] += 1
117         else:
118             scores["triple bogies"] += 1
119
120     print("Percentages:")
121     score = scores["birdies"]
122     print(f"\tBirdy or better: {int(score / len(holes) * 100)}%")
123     score = scores["pars"]
124     print(f"\tPar: {int(score / len(holes) * 100)}%")
125     score = scores["bogies"]
126     print(f"\tBogey: {int(score / len(holes) * 100)}%")
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127     score = scores["double bogies"]
128     print(f"\tDouble Bogey: {int(score / len(holes) * 100)}%")
129     score = scores["triple bogies"]
130     print(f"\tTriple Bogey or Higher: {int(score / len(holes) * 100)}%")
131
132 main()
```