Answers:

1) Hello,
   My name's Smit Kabrawala and I am a master's student at New Jersey Institute of Technology pursuing MSc in Software Engineering. The reason behind opting of Software Engineering was to understand and apply the principles and concepts of software engineering to the design, development, maintenance, testing, which leads to the evolution of computer software. Being good at coding and project management, lately, I have been tutoring a class of grads/undergrads onto the topic of modern robotics and its subsystems. It has been a challenging phase of my life where I must deal with 150 students every week and answer to their queries and doubts. I structured the entire course and its assignments leading me with acing skills like Project Management, Time Management, Resource Management and last but not the least – Communication skills. I and my peers have a meeting on the progress with my supervisors and Dean of the university bi-weekly and resulting in getting nominated for the Excellence award for the year 2019.
   These projects (Full-Stack and Back-End modules) have some additional functionalities including the required set of tasks that were asked to be completed. A lot of effort and hard work has been applied in order to complete this project as working for IGN has been one of my dreams. I have been following IGN entertainment since I was a child and have been a regular user on this website. From movie to game reviews, from game walkthroughs through podcasts, everything IGN does is wonderful. IGN has a global impact and that motivated me to apply and work for IGN one day. Whatever you work upon is seen and followed by thousands and thousands of people. That's simply amazing. The last year I got to know about the IGN's Code-Foo program but unfortunately, the date had passed for 2018 so I had made it clear to myself that I will be applying for the 2019 Code-Foo program and hustle in every possible way to get into this program. I have always been a great follower and an admirer of IGN. I have worked on diverse projects ranging from software development to project management. I believe I have a strong set of skillsets which I can bring on the table and support IGN's mission and demonstrate a keen interest in the work of this company and have a personal commitment to the ideals of the Charter of the IGN.

2) First of all, I have never been to SF so I used Google Maps to figure out the route lol. Then to be more precise I used a 3D map to see if has any obstacle of any kind or not. Then I came to a point that this beautiful street and the distance between coit tower is quite a lot if we are walking. So, these are the steps I would take to steal the pokeballs.

- **If I have a Flying Pokemon** - like Charlizard then there's no point to go through the doors. I would just fly to the top and steal as many pokeballs I could and if possible would also make roundtrips back and forth to steal entire collection of pokeballs and make my army.
- **If I don't have a Flying Pokemon** - then I would create a distraction for Snorlax. Fighting is not a good option. Wake it up using the Poké Flute or put it to sleep and wear down its hitpoints -- then catch it using a Great Ball or better. Credits - https://www.ign.com/wikis/pokemon-firered-leafgreen-version/Route_12
- **Fight Snorlax** - I would use the best or everything I have got because there's a whole lot of pokeballs in the coit tower! I can literally make a new army out of it.

3) This code **delivers the best Armour needed in the allocated budget**. The data has been used from the given link - https://s3.amazonaws.com/o.www.ign.com/code-foo/2019/static/Witcher+Inventory+(1).pdf

Data structures used in this program:

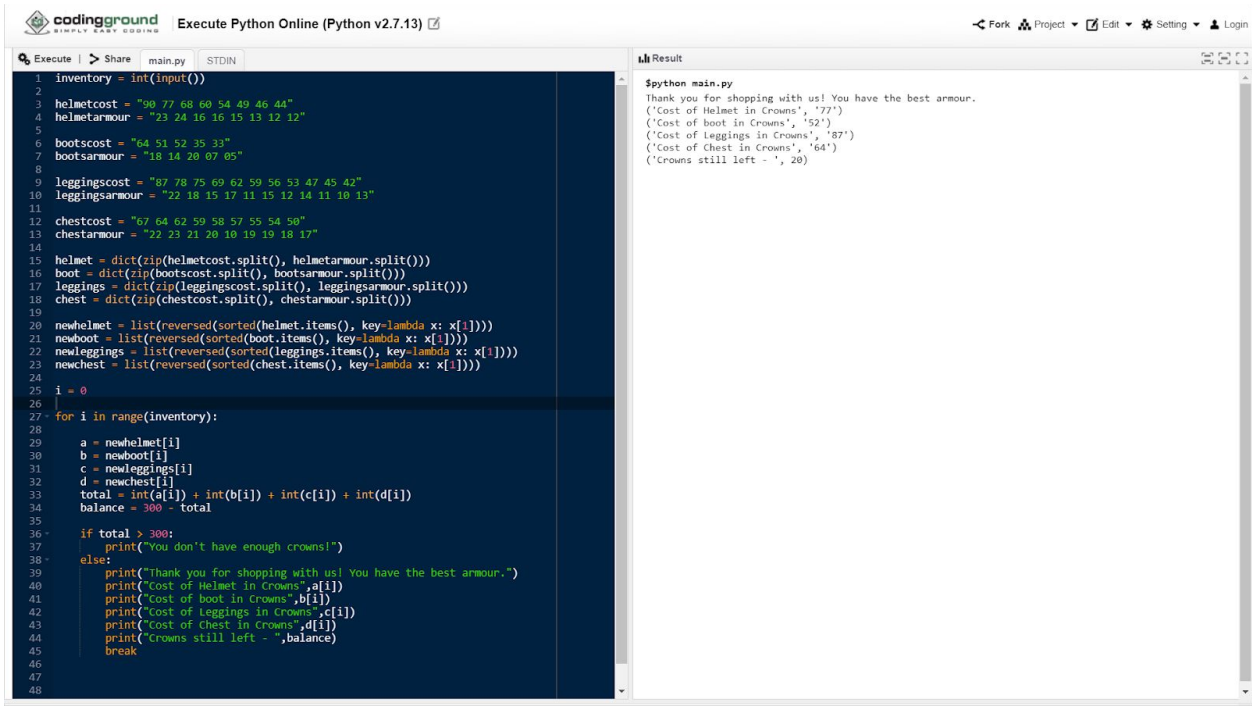
- Dictionary
- List

Explanation in detail:

- We took a standard input for the inventory. This can be any number as the inventory is total of all the items in the store.
- We used a string which is a data type and here it's having the values i.e price and Armor value.
- We linked the Price and the Armor value using a Dictionary and hence Price became the Key and Armor became the Value.
- Since we wanted the best Armor Value for our Witcher, we reverse sorted the dictionary and hence resulted in with an output of a combination having the best Armor and its price.
- We then took the Price of all the top Armors (helmet, leggings, chest, boots) and added to see if it's in our budget or not.
- If it's not we increment the value of 'i' and check the 2nd best Armor.
- And yes, it's successful with other inventories.

```
inventory = int(input())

helmetcost = "90 77 68 60 54 49 46 44"
helmetarmor = "23 24 16 16 15 13 12 12"

bootscost = "64 51 52 35 33"
bootsarmor = "18 14 20 07 05"

leggingscost = "87 78 75 69 62 59 56 53 47 45 42"
leggingsarmor = "22 18 15 17 11 15 12 14 11 10 13"

chestcost = "67 64 62 59 58 57 55 54 50"
chestarmor = "22 23 21 20 10 19 19 18 17"

helmet = dict(zip(helmetcost.split(), helmetarmor.split()))
boot = dict(zip(bootscost.split(), bootsarmor.split()))
leggings = dict(zip(leggingscost.split(), leggingsarmor.split()))
chest = dict(zip(chestcost.split(), chestarmor.split()))

newhelmet = list(reversed(sorted(helmet.items(), key=lambda x:
x[1])))
newboot = list(reversed(sorted(boot.items(), key=lambda x: x[1])))
newleggings = list(reversed(sorted(leggings.items(), key=lambda x:
x[1])))
newchest = list(reversed(sorted(chest.items(), key=lambda x: x[1])))

i = 0

for i in range(inventory):

    a = newhelmet[i]
    b = newboot[i]
    c = newleggings[i]
    d = newchest[i]
    total = int(a[i]) + int(b[i]) + int(c[i]) + int(d[i])
    balance = 300 - total

    if total > 300:
```

```
        print("You don't have enough crowns!")
    else:
        print("Thank you for shopping with us! You have the best
armor.")
        print("Cost of Helmet in Crowns",a[i])
        print("Cost of boot in Crowns",b[i])
        print("Cost of Leggings in Crowns",c[i])
        print("Cost of Chest in Crowns",d[i])
        print("Crowns still left - ",balance)
        break
```



Screenshot with output

Result

```
$python main.py
Thank you for shopping with us! You have the best armour.
('Cost of Helmet in Crowns', '77')
('Cost of boot in Crowns', '52')
('Cost of Leggings in Crowns', '87')
('Cost of Chest in Crowns', '64')
('Crowns still left - ', 20)
```