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APPLICATION OF MACHINE LEARNING TO RESOURCE ALLOCATION IN WIRELESS COMMUNICATIONS

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Introduction

Today, we use wireless communication in many parts of our lives. In this intensity, we sometimes encounter interference and these parasites reduce efficiency. A program was written in order to get maximum efficiency in this project.



Solution

I used python for the solution. First I determined the necessary inputs and outputs here. I created an algorithm with their equations and wrote a program. I came to a conclusion by evaluating those who communicate smoothly within a certain number of users as '1' and those who do not provide '0'.

```
while Qi <= Q and k < N:  
    k = k + 1  
    x = L[0,k]  
    Qi = Qi + g2[0][x] * Pmax  
    P[0,x] = Pmax  
  
if Qi > Q:  
    y = L[0,k]  
    Qi = Qi - g2[0,y] * Pmax  
    P[0,y] = (Q - Qi) / g2[0,y]  
  
#calculate accuracy  
T = 0  
for i in range(0,99):  
    if P[0,i]==1.:  
        T=T+1  
print("number of positives out of 10=","T)  
acc=(T/10)*100  
print("accuracy = ","acc)
```

Conclusion

As a result of my program, I obtained different accuracy values. These values varied between 50-90. I will try to keep it at the highest level more stably in the future.

```
number of positives out of 10= 6  
accuracy = 60.0
```

```
number of positives out of 10= 8  
accuracy = 80.0
```

```
number of positives out of 10= 9  
accuracy = 90.0
```