

COMP101 LAB10

Extended Requirements

Create a program which when input the broadband use, weekend and evening calls and the daytime calls and outputs the costs associated and the profit made across 3 accounts with perks and evaluates the cheapest in accordance with the data in the table below

	Bronze	Silver	Gold
Package Cost /month	£36.00	£46.00	£61.00
Daytime phone cost /min	12p	12p	0p
Evening/Weekend phone cost /min	5p	0p	0p
Number of TV Channels	60	130	230
Included Broadband in Mb	500	1000	1520
Broadband cost /Mb over the included amount	2p	1p	1p
Profit per Daytime call /min	5p	5p	-3p
Profit per evening call /min	2p	-1p	-1p
Profit per Mb over limit	1p	0p	0p
Package Profit	£15	£20	£25
Package Perks	NA	Spotify	Spotify, Music on demand

Analysis and Design

My analysis was that I would need 5 classes, a superclass (StandardUser) and 3 SubClasses (BronzeAccount, SilverAccount and GoldAccount) and an application class (AccountUser).

The subclasses will inherit the majority of their methods from the Superclass and will predominantly be used to hold the pricing profit and features of the different account types

Pseudo Code

IntInput()

INT Value = -1

WHILE Value < 0

Value = INPUT INT

IF Value < 0

OUTPUT The number must be greater than or equal to minValue

OUTPUT enter a different number:

ELSE

BREAK

RETURN Value

CalculateProfit()

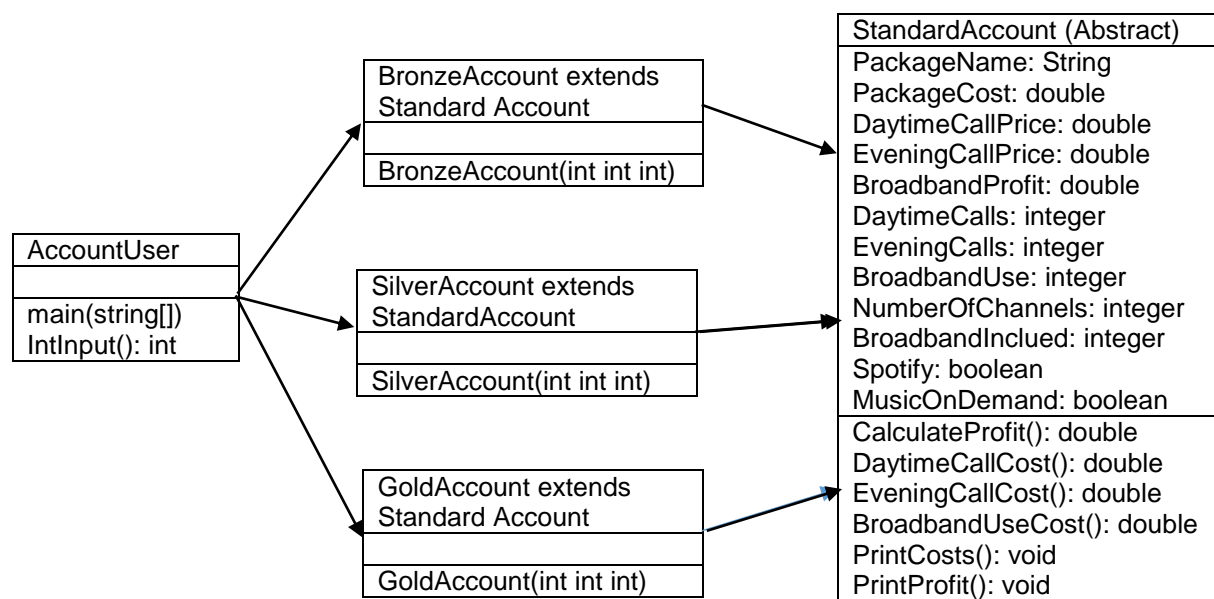
TotalProfit = Profit

```

Daytime = DaytimeProfit*DaytimeCalls
Evening = EveningProfit*EveningCalls
TotalProfit += Daytime+Evening
if BroadbandUse > BroadbandIncluded
    TotalProfit += BroadbandProfit*(BroadbandUse-BroadbandIncluded)
return TotalProfit

```

Class Diagram



Testing

Daytime Minutes	Evening/Weekend Minutes	DataUse	As Expected
0	0	0	yes
100	0	0	yes
0	100	0	yes
100	100	0	yes
0	0	100	yes
500	500	505	yes
100	100	1005	yes
100	100	1525	Yes

Evidence

C:\Users\BenHa\OneDrive\Documents\JAVA\Lab 9>java AccountUserExt

Please Enter the ammount of daytime telephone minutes : 0

Please Enter the ammount of evening and weekend telephone minutes : 0

Please Enter the ammount of total Broadband Use : 0

Account Summary for Bronze Account

Package Cost : 36.00

Cost of daytime calls: 0.12/Min

Cost of evening and weekend calls: 0.05/Min

Number of Channels: 60

Broadband included: 500Mb

Total daytime call cost: 0.00

Total evening/Weekend call cost: 0.00

Total (extra) broadband cost: 0.00

Total cost: 36.00

Account Summary for Silver Account

Package Cost : 46.00

Cost of daytime calls: 0.12/Min

Cost of evening and weekend calls: 0.00/Min

Number of Channels: 130

Broadband included: 1000Mb

Total daytime call cost: 0.00

Total evening/Weekend call cost: 0.00

Total (extra) broadband cost: 0.00

Total cost: 46.00

Package Includes Spotify Account

Account Summary for Gold Account

Package Cost : 61.00

Cost of daytime calls: 0.00/Min

Cost of evening and weekend calls: 0.00/Min

Number of Channels: 230

Broadband included: 1520Mb

Total daytime call cost: 0.00

Total evening/Weekend call cost: 0.00

Total (extra) broadband cost: 0.00

Total cost: 61.00

Package Includes Spotify Account

Package Includes Music On Demand

The profit made on the Bronze package is: 15.00

The profit made on the Silver package is: 20.00

The profit made on the Gold package is: 25.00

The Bronze account is the cheapest

C:\Users\BenHa\OneDrive\Documents\JAVA\Lab 9>java AccountUserExt

Please Enter the ammount of daytime telephone minutes : 100

Please Enter the ammount of evening and weekend telephone minutes : 0

Please Enter the ammount of total Broadband Use : 0

Account Summary for Bronze Account

Package Cost : 36.00

Cost of daytime calls: 0.12/Min

Cost of evening and weekend calls: 0.05/Min

Number of Channels: 60

Broadband included: 500Mb

Total daytime call cost: 12.00

Total evening/Weekend call cost: 0.00

Total (extra) broadband cost: 0.00

Total cost: 48.00

Account Summary for Silver Account

Package Cost : 46.00

Cost of daytime calls: 0.12/Min

Cost of evening and weekend calls: 0.00/Min

Number of Channels: 130

Broadband included: 1000Mb

Total daytime call cost: 12.00

Total evening/Weekend call cost: 0.00

Total (extra) broadband cost: 0.00

Total cost: 58.00

Package Includes Spotify Account

Account Summary for Gold Account

Package Cost : 61.00

Cost of daytime calls: 0.00/Min

Cost of evening and weekend calls: 0.00/Min

Number of Channels: 230
Broadband included: 1520Mb
Total daytime call cost: 0.00
Total evening/Weekend call cost: 0.00
Total (extra) broadband cost: 0.00
Total cost: 61.00
Package Includes Spotify Account
Package Includes Music On Demand

The profit made on the Bronze package is: 20.00
The profit made on the Silver package is: 25.00
The profit made on the Gold package is: 22.00

The Bronze account is the cheapest

C:\Users\BenHa\OneDrive\Documents\JAVA\Lab 9>java AccountUserExt
Please Enter the ammount of daytime telephone minutes : 0
Please Enter the ammount of evening and weekend telephone minutes : 100
Please Enter the ammount of total Broadband Use : 0

Account Summary for Bronze Account
Package Cost : 36.00
Cost of daytime calls: 0.12/Min
Cost of evening and weekend calls: 0.05/Min
Number of Channels: 60
Broadband included: 500Mb
Total daytime call cost: 0.00
Total evening/Weekend call cost: 5.00
Total (extra) broadband cost: 0.00
Total cost: 41.00

Account Summary for Silver Account
Package Cost : 46.00
Cost of daytime calls: 0.12/Min
Cost of evening and weekend calls: 0.00/Min
Number of Channels: 130
Broadband included: 1000Mb
Total daytime call cost: 0.00
Total evening/Weekend call cost: 0.00
Total (extra) broadband cost: 0.00

Total cost: 46.00

Package Includes Spotify Account

Account Summary for Gold Account

Package Cost : 61.00

Cost of daytime calls: 0.00/Min

Cost of evening and weekend calls: 0.00/Min

Number of Channels: 230

Broadband included: 1520Mb

Total daytime call cost: 0.00

Total evening/Weekend call cost: 0.00

Total (extra) broadband cost: 0.00

Total cost: 61.00

Package Includes Spotify Account

Package Includes Music On Demand

The profit made on the Bronze package is: 17.00

The profit made on the Silver package is: 19.00

The profit made on the Gold package is: 24.00

The Bronze account is the cheapest

C:\Users\BenHa\OneDrive\Documents\JAVA\Lab 9>java AccountUserExt

Please Enter the ammount of daytime telephone minutes : 100

Please Enter the ammount of evening and weekend telephone minutes : 100

Please Enter the ammount of total Broadband Use : 0

Account Summary for Bronze Account

Package Cost : 36.00

Cost of daytime calls: 0.12/Min

Cost of evening and weekend calls: 0.05/Min

Number of Channels: 60

Broadband included: 500Mb

Total daytime call cost: 12.00

Total evening/Weekend call cost: 5.00

Total (extra) broadband cost: 0.00

Total cost: 53.00

Account Summary for Silver Account

Package Cost : 46.00

Cost of daytime calls: 0.12/Min

Cost of evening and weekend calls: 0.00/Min

Number of Channels: 130

Broadband included: 1000Mb

Total daytime call cost: 12.00

Total evening/Weekend call cost: 0.00

Total (extra) broadband cost: 0.00

Total cost: 58.00

Package Includes Spotify Account

Account Summary for Gold Account

Package Cost : 61.00

Cost of daytime calls: 0.00/Min

Cost of evening and weekend calls: 0.00/Min

Number of Channels: 230

Broadband included: 1520Mb

Total daytime call cost: 0.00

Total evening/Weekend call cost: 0.00

Total (extra) broadband cost: 0.00

Total cost: 61.00

Package Includes Spotify Account

Package Includes Music On Demand

The profit made on the Bronze package is: 22.00

The profit made on the Silver package is: 24.00

The profit made on the Gold package is: 21.00

The Bronze account is the cheapest

C:\Users\BenHa\OneDrive\Documents\JAVA\Lab 9>java AccountUserExt

Please Enter the ammount of daytime telephone minutes : 0

Please Enter the ammount of evening and weekend telephone minutes : 0

Please Enter the ammount of total Broadband Use : 100

Account Summary for Bronze Account

Package Cost : 36.00

Cost of daytime calls: 0.12/Min

Cost of evening and weekend calls: 0.05/Min

Number of Channels: 60
Broadband included: 500Mb
Total daytime call cost: 0.00
Total evening/Weekend call cost: 0.00
Total (extra) broadband cost: 0.00
Total cost: 36.00

Account Summary for Silver Account
Package Cost : 46.00
Cost of daytime calls: 0.12/Min
Cost of evening and weekend calls: 0.00/Min
Number of Channels: 130
Broadband included: 1000Mb
Total daytime call cost: 0.00
Total evening/Weekend call cost: 0.00
Total (extra) broadband cost: 0.00
Total cost: 46.00
Package Includes Spotify Account

Account Summary for Gold Account
Package Cost : 61.00
Cost of daytime calls: 0.00/Min
Cost of evening and weekend calls: 0.00/Min
Number of Channels: 230
Broadband included: 1520Mb
Total daytime call cost: 0.00
Total evening/Weekend call cost: 0.00
Total (extra) broadband cost: 0.00
Total cost: 61.00
Package Includes Spotify Account
Package Includes Music On Demand

The profit made on the Bronze package is: 15.00
The profit made on the Silver package is: 20.00
The profit made on the Gold package is: 25.00

The Bronze account is the cheapest

C:\Users\BenHa\OneDrive\Documents\JAVA\Lab 9>java AccountUserExt
Please Enter the ammount of daytime telephone minutes : 500

Please Enter the ammount of evening and weekend telephone minutes : 500

Please Enter the ammount of total Broadband Use : 505

Account Summary for Bronze Account

Package Cost : 36.00

Cost of daytime calls: 0.12/Min

Cost of evening and weekend calls: 0.05/Min

Number of Channels: 60

Broadband included: 500Mb

Total daytime call cost: 60.00

Total evening/Weekend call cost: 25.00

Total (extra) broadband cost: 0.10

Total cost: 121.10

Account Summary for Silver Account

Package Cost : 46.00

Cost of daytime calls: 0.12/Min

Cost of evening and weekend calls: 0.00/Min

Number of Channels: 130

Broadband included: 1000Mb

Total daytime call cost: 60.00

Total evening/Weekend call cost: 0.00

Total (extra) broadband cost: 0.00

Total cost: 106.00

Package Includes Spotify Account

Account Summary for Gold Account

Package Cost : 61.00

Cost of daytime calls: 0.00/Min

Cost of evening and weekend calls: 0.00/Min

Number of Channels: 230

Broadband included: 1520Mb

Total daytime call cost: 0.00

Total evening/Weekend call cost: 0.00

Total (extra) broadband cost: 0.00

Total cost: 61.00

Package Includes Spotify Account

Package Includes Music On Demand

The profit made on the Bronze package is: 50.05

The profit made on the Silver package is: 40.00

The profit made on the Gold package is: 5.00

The Gold account is the cheapest

C:\Users\BenHa\OneDrive\Documents\JAVA\Lab 9>java AccountUserExt

Please Enter the ammount of daytime telephone minutes : 100

Please Enter the ammount of evening and weekend telephone minutes : 100

Please Enter the ammount of total Broadband Use : 1005

Account Summary for Bronze Account

Package Cost : 36.00

Cost of daytime calls: 0.12/Min

Cost of evening and weekend calls: 0.05/Min

Number of Channels: 60

Broadband included: 500Mb

Total daytime call cost: 12.00

Total evening/Weekend call cost: 5.00

Total (extra) broadband cost: 10.10

Total cost: 63.10

Account Summary for Silver Account

Package Cost : 46.00

Cost of daytime calls: 0.12/Min

Cost of evening and weekend calls: 0.00/Min

Number of Channels: 130

Broadband included: 1000Mb

Total daytime call cost: 12.00

Total evening/Weekend call cost: 0.00

Total (extra) broadband cost: 0.05

Total cost: 58.05

Package Includes Spotify Account

Account Summary for Gold Account

Package Cost : 61.00

Cost of daytime calls: 0.00/Min

Cost of evening and weekend calls: 0.00/Min

Number of Channels: 230

Broadband included: 1520Mb

Total daytime call cost: 0.00

Total evening/Weekend call cost: 0.00
Total (extra) broadband cost: 0.00
Total cost: 61.00
Package Includes Spotify Account
Package Includes Music On Demand

The profit made on the Bronze package is: 27.05
The profit made on the Silver package is: 24.00
The profit made on the Gold package is: 21.00

The Silver account is the cheapest

C:\Users\BenHa\OneDrive\Documents\JAVA\Lab 9>java AccountUserExt
Please Enter the ammount of daytime telephone minutes : 100
Please Enter the ammount of evening and weekend telephone minutes : 100
Please Enter the ammount of total Broadband Use : 1525

Account Summary for Bronze Account
Package Cost : 36.00
Cost of daytime calls: 0.12/Min
Cost of evening and weekend calls: 0.05/Min
Number of Channels: 60
Broadband included: 500Mb
Total daytime call cost: 12.00
Total evening/Weekend call cost: 5.00
Total (extra) broadband cost: 20.50
Total cost: 73.50

Account Summary for Silver Account
Package Cost : 46.00
Cost of daytime calls: 0.12/Min
Cost of evening and weekend calls: 0.00/Min
Number of Channels: 130
Broadband included: 1000Mb
Total daytime call cost: 12.00
Total evening/Weekend call cost: 0.00
Total (extra) broadband cost: 5.25
Total cost: 63.25
Package Includes Spotify Account

Account Summary for Gold Account

Package Cost : 61.00

Cost of daytime calls: 0.00/Min

Cost of evening and weekend calls: 0.00/Min

Number of Channels: 230

Broadband included: 1520Mb

Total daytime call cost: 0.00

Total evening/Weekend call cost: 0.00

Total (extra) broadband cost: 0.05

Total cost: 61.05

Package Includes Spotify Account

Package Includes Music On Demand

The profit made on the Bronze package is: 32.25

The profit made on the Silver package is: 24.00

The profit made on the Gold package is: 21.00

The Gold account is the cheapest