|  |  |  |
| --- | --- | --- |
| Input | Processing | Output |
| route\_Code more\_Routes | * Initialize route\_Code, more\_Routes, routes(106), total\_Routes, total\_miles, route\_Count(4), total\_Gas * PROMPT more\_Routes, route\_Code * READ more\_Routes, route\_Code * Validate more\_Routes, route\_Code * Add route\_Code to routes(106) * Add miles to miles(106) * Count total\_Routes * Count total\_Miles * Count route\_Count(4) * Calculate total\_Gas | total\_Routes  route\_Count(4) total\_Gas |

BEGIN GMUShuttleRoutes  
1 SET more\_Routes = “”  
2 SET route\_Code = “”  
3 SET routes()  
4 SET max\_Routes = 106  
5 SET total\_Routes = 0  
6 SET total\_Miles = 0  
7 SET route\_Count(4)  
8 SET total\_Gas = 0  
9 more\_Routes = getMoreRoutes()  
 DO WHILE( more\_Routes = Yes AND total\_Routes < 106)  
 10 routes() ADD getRouteCode()  
 11 total\_Routes = size(routes())  
 12 more\_Routes = getMoreRoutes()  
 END DO  
 IF total\_Routes > 0 THEN  
 13 route\_Count() = getRouteCount(routes, total\_Routes)  
 14 total\_Miles = getTotalMiles(route\_Count)  
 15 total\_Gas = total\_Miles / 24  
 16 PRINT total\_Routes, route\_Count, total\_Gas  
 ELSE  
 17 PRINT “No shuttles were run today!”  
  
END  
  
BEGIN getMoreRoutes()  
 REPEAT  
18 PROMPT “Would you like to enter any more bus routes? (Yes or No)”  
 GET more\_Routes  
 IF more\_Routes <> Yes AND more\_Routes <> No  
 DISPLAY “Error”  
 END IF  
 UNTIL more\_Routes = Yes OR more\_Routes = No  
END

BEGIN getRouteCode()  
 REPEAT  
19 PROMPT “Enter bus route”  
 GET route  
 IF route <> FCST AND route <> STFC AND route <> FCMT AND route <> MTFC  
 DISPLAY “Error”  
 END IF  
 UNTIL route = FCST OR route = STFC OR route = FCMT OR route = MTFC  
END

BEGIN getRouteCount(routes(), total\_Routes)  
 SET FCSTCount = 0  
 SET STFCCount = 0  
 SET FCMTCount = 0  
 SET MTFCCount = 0  
 DO route\_Index = 1 to total\_Routes  
 CASE OF routes(route\_Index)  
 FCST : FCSTCount = FCSTCount + 1  
 STFC : STFCCount = STFCCount + 1  
 FCMT : FCMTCount = FCMTCount + 1  
 MTFC : MTFCCount = MTFCCount + 1  
 END CASE  
 END DO  
20 route\_Count(FCSTCount, STFCCount, FCMTCount, MTFCCount)  
END  
  
BEGIN getTotalMiles(route\_Count)  
21 SET total\_Miles = 0  
 total\_Miles += route\_Count[1] \* 21  
 total\_Miles += route\_Count[2] \* 21  
 total\_Miles += route\_Count[3] \* 7  
 total\_Miles += route\_Count[4] \* 7  
END

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | more\_Route | route\_Code | routes() | Total\_Routes | Total\_Miles | Route\_Count | Total\_Gas | Message |
| 1-8 | “” | “” |  | 0 | 0 |  | 0 |  |
| 9,18 | No |  |  |  |  |  |  |  |
| 17 |  |  |  |  |  |  |  | No Routes |
|  |  |  |  |  |  |  |  |  |
| 1-8 | “” | “” |  | 0 | 0 |  | 0 |  |
| 9,18 | Yes |  |  |  |  |  |  |  |
| 10,19 |  | TCMT | ADDED |  |  |  |  |  |
|  |  | ERROR |  |  |  |  |  |  |
| 10,19 |  | FCST |  |  |  |  |  |  |
| 11 |  |  |  | 1 |  |  |  |  |
| 12,18 | Yes |  |  |  |  |  |  |  |
| 10,19 |  | STFC | ADDED |  |  |  |  |  |
| 11 |  |  |  | 2 |  |  |  |  |
| 12,18 | Yes |  |  |  |  |  |  |  |
| 10,19 |  | FCMT | ADDED |  |  |  |  |  |
| 11 |  |  |  | 3 |  |  |  |  |
| 12,18 | Yes |  |  |  |  |  |  |  |
| 10,19 |  | MTFC | ADDED |  |  |  |  |  |
| 11 |  |  |  | 4 |  |  |  |  |
| 12,18 | Maybe |  |  |  |  |  |  |  |
|  | Error! |  |  |  |  |  |  |  |
| 12,18 | No |  |  |  |  |  |  |  |
| 13,20 |  |  |  |  |  | ADDED |  |  |
| 14,21 |  |  |  |  | 56 |  |  |  |
| 15 |  |  |  |  |  |  | 2.34 |  |
| 16 |  |  |  | Print |  | Print | Print |  |