|  |  |  |
| --- | --- | --- |
| Input | Processing | Output |
| user\_Selection  add\_Course  add\_Course\_Credit  remove\_Course | * Prompt user\_Selection * Read user\_Selection * Validate user\_Selection * Prompt add\_Course * Read add\_Course * Validate add\_Course * Prompt add\_Course\_Credit * Read add\_Course\_Credit * Validate add\_Course\_Credit * Add add\_Course to class\_List * Add add\_Course\_Credit to class\_List\_Credit * Prompt remove\_Course * Read remove\_Course * Validate remove\_Course * Remove remove\_Course * Remove remove\_Course’s credit * Sum up total\_Num\_Credit | class\_List  class\_List\_Credit  total\_Num\_Credit |

Begin FallRegistration

1. Set max\_Classes = 9
2. Set user\_Selection = 0
3. Set class\_List(9)
4. Set class\_List\_Credit(9)
5. Set add\_Course
6. Set add\_Course\_Credit = 0;
7. Set already\_Reg
8. Set remove\_Course
9. Set remove\_Not\_Reg
10. Set class\_Count = 0
11. Set print\_message = “”
12. Set total\_Num\_Credit = 0
13. DOWHILE user\_Selection != 4  
     user\_Selection = 0

PROMPT for user\_Selection

Read user\_Selection

1. IF user\_Selection = 1  
    IF class\_Count != max\_Classes  
    add\_Course = “”  
    already\_Reg = false

DOWHILE add\_Course = “”  
 Prompt for add\_Course  
 Read add\_Course  
 IF add\_Course = “”  
 PRINT “Course Entered is Invalid”  
 ENDIF  
 ENDDO  
 DO reg\_Index = 1 to max\_Classes  
 IF add\_Course = class\_List(reg\_Index)  
 already\_Reg = true  
 PRINT “You have already registered”  
 ENDIF  
 ENDDO

1. add\_Course\_Credit = 0  
    DOWHILE add\_Course\_Credit = 0 AND already\_Reg = false  
    PROMPT for add\_Course\_Credit  
    READ add\_Course\_Credit  
    IF add\_Course\_Credit <= 0  
    PRINT “Invalid amount of credit’s entered”  
    add\_Course\_Credit = 0  
    ENDIF  
    ENDDO
2. IF already\_Reg = false  
    class\_List(class\_Count + 1) = add\_Course  
    class\_List\_Credit(class\_Count + 1) = add\_Course\_Credit  
    class\_Count = class\_Count + 1  
    ENDIF  
    ELSE  
    PRINT “You can’t add anymore classes  
    ENDIF
3. ELSEIF user\_Selection = 2  
    remove\_Course = “”  
    remove\_Not\_Reg = true  
    DOWHILE remove\_Course = “”  
    IF class\_Count = 0  
    PRINT “You are not registered for any classes  
    BREAK  
    ENDIF  
    PROMPT for remove\_Course  
    READ remove\_Course  
    IF remove\_Course = “”  
    PRINT “Course Entered is Invalid”  
    ENDIF
4. DO remove\_Index = 1 to max\_Classes  
    IF class\_List(remove\_Index) = remove\_Course  
    remove\_Not\_Reg = false  
    class\_Count = class\_Count – 1  
    DO resort\_Index = remove\_Index to 8  
    class\_List(resort\_Index) = class\_List(resort\_Index + 1)  
    class\_List\_Credit(resort\_Index)=class\_List\_Credit(resort\_Index+1)  
    ENDDO  
    class\_List(9) = null  
    class\_List\_Credit(9) = 0  
    PRINT “You have remove course”  
    ENDIF  
    ENDDO  
    IF remove\_Not\_Reg = true AND class\_Count != 0  
    PRINT “Error! You weren’t registered for that class”  
    ENDIF
5. ELSEIF user\_Selection = 3  
    print\_Message = “GMU FALL 2016”  
    total\_Num\_Credit = 0  
    DO print\_Index = 1 to max\_Classes  
    IF class\_List(print\_Index) != null  
    print\_Message += class\_List(print\_Index)  
    print\_Message += class\_List\_Credit(print\_Index)  
    total\_Num\_Credit = total\_Num\_Credit + 1  
    ENDIF  
    ENDDO  
    print\_Message += total\_Num\_Credit  
    IF total\_Num\_Credit > 0  
    PRINT print\_Message  
    ELSE  
    PRINT “You are not registered for any classes”  
    ENDIF
6. ELSEIF user\_Selection = 4
7. ELSE  
    PRINT “Sorry, You have entered an invalid entry”  
    ENDIF  
    ENDDO  
   END FALLREGISTRATION

Input Data

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Main menu | 0 | 1 | 1 | 1 | 2 | 4 |
| Input 1 |  | IT 106 | Yoga | IT 223 | “” |  |
| Input 2 |  | 3 | 1 |  |  |  |
| Main menu | 2 | 1 | 1 | 1 | 2 |  |
| Input 1 |  | IT 106 | IT 103 | IT 207 | It 106 |  |
| Input 2 |  |  | 3 | 3 |  |  |
| Main menu | 3 | 1 | 1 | 1 | 1 |  |
| Input 1 |  | IT 223 | IT 214 | IT 300 | “”, IT 106 |  |
| Input 2 |  | 3 | 3 | 3 | 0, 3 |  |
| Main menu | A | 1 | 1 | 1 | 3 |  |
| Input 1 |  | MBUS 300 | IT 213 | IT 343 |  |  |
| Input 2 |  | 3 | 3 |  |  |  |

Expected Results

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Main menu | 0 | 2 | 3 | A | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Input 1 |  |  |  |  | IT 106 | IT 106 | IT 223 | MBUS 300 | Yoga | IT 103 | IT 214 | IT 213 |
| Input 2 |  |  |  |  | 3 |  | 3 | 3 | 1 | 3 | 3 | 3 |
| result | Error | Error | Error | Error | Added | Error | Added | Added | Added | Added | Added | Added |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Main menu | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 3 | 4 |
| Input 1 | IT 223 | IT 207 | IT 300 | IT 343 | “” | IT 106 | IT 101 | “” | IT 106 | IT 106 |  |  |
| Input 2 |  | 3 | 3 |  |  |  |  |  | 0 | 3 |  |  |
| result | Error | Added | Added | Error | error | removed | Error | error | error | added | Print | Exit |

|  |  |  |
| --- | --- | --- |
|  | Course name | Course credit |
| 1 | IT 223 | 3 |
| 2 | MBUS 300 | 3 |
| 3 | Yoga | 1 |
| 4 | IT 103 | 3 |
| 5 | IT 214 | 3 |
| 6 | IT 213 | 3 |
| 7 | IT 207 | 3 |
| 8 | IT 300 | 3 |
| 9 | IT 106 | 3 |
| Total Credits: | 25 |  |

Desk Checking Table

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | User Selection | Course Name | Course Credit | Remove course name | Class count | Total number of credits | Class array | Credit array |
| 1-12 | 0 | “” | 0 | “” | 0 | 0 | Size 9 | Size 9 |
| 13 | 0 |  |  |  |  |  |  |  |
| 21 | Error |  |  |  |  |  |  |  |
| 13 | 2 |  |  |  |  |  |  |  |
| 21 | Error |  |  |  |  |  |  |  |
| 13 | 3 |  |  |  |  |  |  |  |
| 21 | Error |  |  |  |  |  |  |  |
| 13 | A |  |  |  |  |  |  |  |
| 21 | Error |  |  |  |  |  |  |  |
| 13 | 1 |  |  |  |  |  |  |  |
| 14 |  | IT 106 |  |  |  |  |  |  |
| 15 |  |  | 3 |  |  |  |  |  |
| 16 |  |  |  |  | 1 |  | added | added |
| 13 | 1 |  |  |  |  |  |  |  |
| 14 |  | IT 106 |  |  |  |  |  |  |
|  |  | Error |  |  |  |  |  |  |
| 13 | 1 |  |  |  |  |  |  |  |
| 14 |  | IT 223 |  |  |  |  |  |  |
| 15 |  |  | 3 |  |  |  |  |  |
| 16 |  |  |  |  | 2 |  | added | added |
| 13 | 1 |  |  |  |  |  |  |  |
| 14 |  | MBUS 300 |  |  |  |  |  |  |
| 15 |  |  | 3 |  |  |  |  |  |
| 16 |  |  |  |  | 3 |  | added | added |
| 13 | 1 |  |  |  |  |  |  |  |
| 14 |  | Yoga |  |  |  |  |  |  |
| 15 |  |  | 1 |  |  |  |  |  |
| 16 |  |  |  |  | 4 |  | added | added |
| 13 | 1 |  |  |  |  |  |  |  |
| 14 |  | IT 103 |  |  |  |  |  |  |
| 15 |  |  | 3 |  |  |  |  |  |
| 16 |  |  |  |  | 5 |  | added | added |
| 13 | 1 |  |  |  |  |  |  |  |
| 14 |  | IT 214 |  |  |  |  |  |  |
| 15 |  |  | 3 |  |  |  |  |  |
| 16 |  |  |  |  | 6 |  | added | added |
| 13 | 1 |  |  |  |  |  |  |  |
| 14 |  | IT 213 |  |  |  |  |  |  |
| 15 |  |  | 3 |  |  |  |  |  |
| 16 |  |  |  |  | 7 |  | added | added |
| 13 | 1 |  |  |  |  |  |  |  |
| 14 |  | IT 223 |  |  |  |  |  |  |
|  |  | error |  |  |  |  |  |  |
| 13 | 1 |  |  |  |  |  |  |  |
| 14 |  | IT 207 |  |  |  |  |  |  |
| 15 |  |  | 3 |  |  |  |  |  |
| 16 |  |  |  |  | 8 |  | added | added |
| 13 | 1 |  |  |  |  |  |  |  |
| 14 |  | IT 300 |  |  |  |  |  |  |
| 15 |  |  | 3 |  |  |  |  |  |
| 16 |  |  |  |  | 9 |  | added | added |
| 13 | 1 |  |  |  |  |  |  |  |
|  | error |  |  |  |  |  |  |  |
| 13 | 2 |  |  |  |  |  |  |  |
| 17 |  |  |  | “” |  |  |  |  |
|  |  |  |  | Error |  |  |  |  |
| 13 | 2 |  |  |  |  |  |  |  |
| 17 |  |  |  | IT 106 |  |  |  |  |
| 18 |  |  |  |  | 8 |  | removed | Removed |
| 13 | 2 |  |  |  |  |  |  |  |
| 17 |  |  |  | IT 101 |  |  |  |  |
|  |  |  |  | Error |  |  |  |  |
| 13 | 1 |  |  |  |  |  |  |  |
| 14 |  | “” |  |  |  |  |  |  |
|  |  | Error |  |  |  |  |  |  |
| 14 |  | IT 106 |  |  |  |  |  |  |
| 15 |  |  | 0 |  |  |  |  |  |
|  |  |  | Error |  |  |  |  |  |
| 15 |  |  | 3 |  |  |  |  |  |
| 16 |  |  |  |  | 9 |  | added | added |
| 13 | 3 |  |  |  |  |  |  |  |
| 19 |  |  |  |  | print |  | print | Print |
| 13 | 4 |  |  |  |  |  |  |  |
| 20 | Exit |  |  |  |  |  |  |  |