1. Construct a Raspberry Pi model Robot system for HR system in an organization to assess an employee’s contribution. The system should take the following parameters as inputs:

* Self Appraisal
* Appraisal from Project Manager
* Achievements of the employee
* Awards and recognitions
* Feedback from clients

 The model should assign a score based on the following factors. Each factor has a weightage of 20%. The decisions / actions should be based on the following:

|  |  |
| --- | --- |
| Overall Score | Action / Decision |
| Score >80% | Can be considered for promotion |
| Score>50% and <80% | Monitor progress for 6 months and then take action |
| Score >30% and <50% | Counsel the candidate and take feedback |
| Score < 20% | Terminate the candidate |

Identify the tasks and subtasks in the above process (Critical / non-critical / exceptional). Develop the python script for the same. No need to do the circuit simulation. Draw a block diagram of the model illustrating the components that would be used.

Ans:

* Python script:

 *#!/usr/bin/python*

*#Get the weightage out of 20% Self appraisal*

*def getWeightage\_SelfApp(input):*

 *if (input == 1):*

 *return 4;*

 *elif (input == 2):*

 *return 8;*

 *elif (input == 3):*

 *return 12;*

 *elif (input == 4):*

 *return 16;*

 *elif (input == 5):*

 *return 20;*

*#Get the weightage out of 20% Appraisal from PM*

*def getWeightage\_PMApp(input):*

 *if(input == 1):*

 *return 4;*

 *elif(input == 2):*

 *return 8;*

 *elif(input == 3):*

 *return 12;*

 *elif(input == 4):*

 *return 16;*

 *elif(input == 5):*

 *return 20;*

*#Get the weightage out of 20% : Achievements of employee*

*def getWeightage\_Achivements(input):*

 *if (input == 1):*

 *return 5;*

 *elif (input == 2):*

 *return 10;*

 *elif (input == 3):*

 *return 15;*

 *elif (input == 4):*

 *return 20;*

*#Get the weightage out of 20% : Awards of employee*

*def getWeightage\_Awards(input):*

 *if (input == 1):*

 *return 5;*

 *elif (input == 2):*

 *return 10;*

 *elif (input == 3):*

 *return 15;*

 *elif (input == 4):*

 *return 20;*

*#Get the weightage out of 20% : Customer feedback*

*def getWeightage\_ClientFeedback(input):*

 *if (input == 1):*

 *return 5;*

 *elif (input == 2):*

 *return 10;*

 *elif (input == 3):*

 *return 15;*

 *elif (input == 4):*

 *return 20;*

*num\_of\_emp = int(input("Enter the number of employee(s) : "));*

*List\_name = [];*

*List\_score = [];*

*List\_action = [];*

*for i in range(0,num\_of\_emp):*

 *Emp\_id = int(input("\nEnter Employee Id : "));*

 *Emp\_name = raw\_input("Enter Employee name: ");*

 *print("\n| Self Appraisal |");*

 *SelfRating = int(input("Enter rating(1-5) of the self appraisal: "));*

 *print("\n| Project Manager Appraisal |");*

 *App\_PM = int(input("\n\nEnter contribution type :\n 1. Unsatisfactory\n 2. More contribution needed\n 3. Highly valued\n 4. Excellent \n 5. Oustanding\nEnter : "));*

 *print("\n| Employee Achivements |");*

 *Achivements = int(input("\n\nEnter Achivement type :\n 1. The Shining Star\n 2. Top Performer\n 3. Best Team Player\n 4. The Innovator\nEnter : "));*

 *print("\n| Employee Awards |");*

 *Awards = int(input("\n\nEnter Awards type :\n 1. Spotlight Award\n 2. Customer Service Award\n 3. Best Leadership Impact\n 4. Employee Excellence Award\nEnter : "));*

 *print("\n| Customer Feedback Type |");*

 *Cust\_Feedback = int(input("\n\nEnter Customer Service type :\n 1. Circle of joy award\n 2. Star Service Award\n 3. Platinum Service Award\n 4. Diamond Service Award\nEnter : "));*

 *SelfRating = getWeightage\_SelfApp(SelfRating);*

 *App\_PM = getWeightage\_PMApp(App\_PM);*

 *Achivements = getWeightage\_Achivements(Achivements);*

 *Awards = getWeightage\_Awards(Awards);*

 *Cust\_Feedback = getWeightage\_ClientFeedback(Cust\_Feedback);*

 *Total\_score = SelfRating + App\_PM + Achivements + Awards + Cust\_Feedback;*

 *if(Total\_score > 80) :*

 *action = "%s should be considered for promotion" %Emp\_name;*

 *elif(Total\_score>50 and Total\_score<80):*

 *action = "Monitor the progress of %s for 6 months and then take action" %Emp\_name;*

 *elif(Total\_score>30 and Total\_score<50):*

 *action = "Counsel %s and take feedback" %Emp\_name;*

 *elif(Total\_score<20):*

 *action = "Terminate %s with immediate effect" %Emp\_name;*

 *#print "\n";*

 *#print "Employee name -> %s | Score -> %d | Action -> %s " % (Emp\_name,Total\_score,action);*

 *#print "\n";*

 *List\_name.insert(i,Emp\_name);*

 *List\_score.insert(i,Total\_score);*

 *List\_action.insert(i,action);*

*#print List\_name*

*for i in range(0,num\_of\_emp):*

 *print "\n %d. | Employee name - %s | Score - %d | Action - %s |" % ((i+1),List\_name[i],List\_score[i],List\_action[i]);*

* Tasks:

 *T1 - Submission of Self Appraisal*

 *T2 - Appraisal from Project Manager*

 *T3 - Achievements of the employee*

 *T4 - Feedback from clients*

* Scheduling Algorithm:

 *The Earliest Deadline First(EDF) algorithm is a priority driven algorithm in which higher priority is assigned to the request that has earlier deadline, and a higher priority request always pre-empts a lower priority one.*

* Cheddar Screenshots

 



* Block diagram of model

 