**COMSATS University Islamabad,**

**Lahore Campus**

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**Section:**

**A**

**OS:**

**Terminal (Lab)**

**Submitted to:**

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**/\*\***

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**TERMINAL: OS-LAB**

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**Question:02**

**Assume that you are the main developer of a famous Satellite Television company that plays movies to its subscribed users**

**(but not on demand). You are supposed to write their software to implement the following criteria:**

**1) The movies are stored in the database with its rating, length, and genre.**

**2) The rating should be a number from 1 to 5. The length should be from 30 to 200 minutes.**

**The genre should be classic, action, or drama. You must place checks to keep things in these limits.**

**3) The movie having the highest rating will be played first.**

**4) If the rating of two movies is same, the one having longer length will be played first.**

**5) If the length of two movies is same, the one having action genre will be played first.**

**\*/**

**Code:**

#include<stdio.h>

#include<conio.h>

void main(){

int rating[20];

int length[20];

char genre[10];

int size;

int i;

printf("Criteria\n");

printf("If the rating of the movie is equal to 4 and 5 the movie will play first\n");

printf("If the rating of the movie is same then the greater length movie will play first\n");

printf("if length of the movie is same then the movie which have genre action will play first\n");

printf("Enter the Total number of Movies: ");

scanf("%d",&size);

printf("Enter the Rating of the Movie from 1 to 5: ");

for(i=0;i<size;i++)

{

scanf("%d",&size);

}

printf("Enter the Length of the Movie from 30 to 200 minutes: ");

for(i=0;i<size;i++)

{

scanf("%d",&length[i]);

}

printf("Enter the genre of the Movie (Classic, Action or Drama): ");

for(i=0;i<size;i++)

{

scanf("%s",&genre[i]);

}

for(i=0;i<size;i++){

if(rating[i] >= 1 && rating[i]<= 5)

{

printf("Entry is valid");

}

else{

printf("Invalid Entry!!!");

}

}

for(i=0;i<size;i++){

if(length[i] >= 30 && length[i]<= 200 ){

scanf("%d",&length[i]);

printf("Entry is valid");

}

else{

printf("Entry is Invalid!!!");

}

}

for(i=0;i<size;i++){}

if(rating[i] == 4 && rating[i] == 5){

printf("Entry is valid");

}

else if(length[i] >= 100 && length[i] <= 200){

printf("The movie play first");

}

else{

printf("The movie will not play first");

}

}

for(i<0;i<size;i++){

if(length[i] >= 100 && <= length[i]200 && genre[i] == 'action' )

{

printf("The movie will play first");

}

else{

printf("The movie will not play first");

}

}

}

**/\*\***

**Question # 1: (20 marks)**

**Write a C/C++ program to implement logical to physical address mapping in an Operating System through the page table mechanism. The working of the program can be deduced from the following:**

**1) The size of main memory should be fixed in the code as 64 bytes.**

**2) The size of a page/frame should be fixed in the code as 8 bytes.**

**3) The user will enter the size of the user program (i.e., logical space). A check must be placed to verify it is not greater than 64 bytes.**

**4) The user will enter the page table (according to the size of the program). At this point, a message should appear stating: “Your Simulation Is ready”.**

**5) The user will enter the logical address to be converted into physical address.**

**6) The program will print the physical address against the user input.**

**\*/**

**Code:**

#include<stdio.h>

#include<conio.h>

int main(){

int size,log\_size,log\_add,r,d,i,result;

printf("Enter size of program: ");

scanf("%d", &size);

printf("Enter size of logical Address: ");

scanf("%d",&log\_add);

printf("Enter size of logical Space Up-to 8 bytes: ");

scanf("%d",&log\_size);

int pages[log\_size],frame\_size[log\_size];

printf("Enter frames Up-to 8 bytes\n");

for(i=0;i<log\_size;i++)

{

scanf("%d",&frame\_size[i]);

}

for(i=0;i<log\_size;i++)

{

pages[i]=i;

}

d = (log\_add / log\_size);

r = (log\_add % log\_size);

result = (log\_size \* frame\_size[d]);

result += r;

printf("Page Table\n");

printf("Pages Frames\n");

for(i=0;i<log\_size;i++)

{

printf("%d %d\n",pages[i],frame\_size[i]);

}

if(result > 64)

{

printf("Invalid Input Entered !!!");

}

else

{

printf("The logical address to be converted = %d",result);

}

return 0;

}

**Output:**

