



University of Dhaka
Department of Computer Science and Engineering

Project Report
Fundamentals of Programming Lab(CSE-1211)

Project Name

Flag Warrior

Team Members
Nafiul Hasan Anik(28)
Dipto Shaha(34)

Introduction

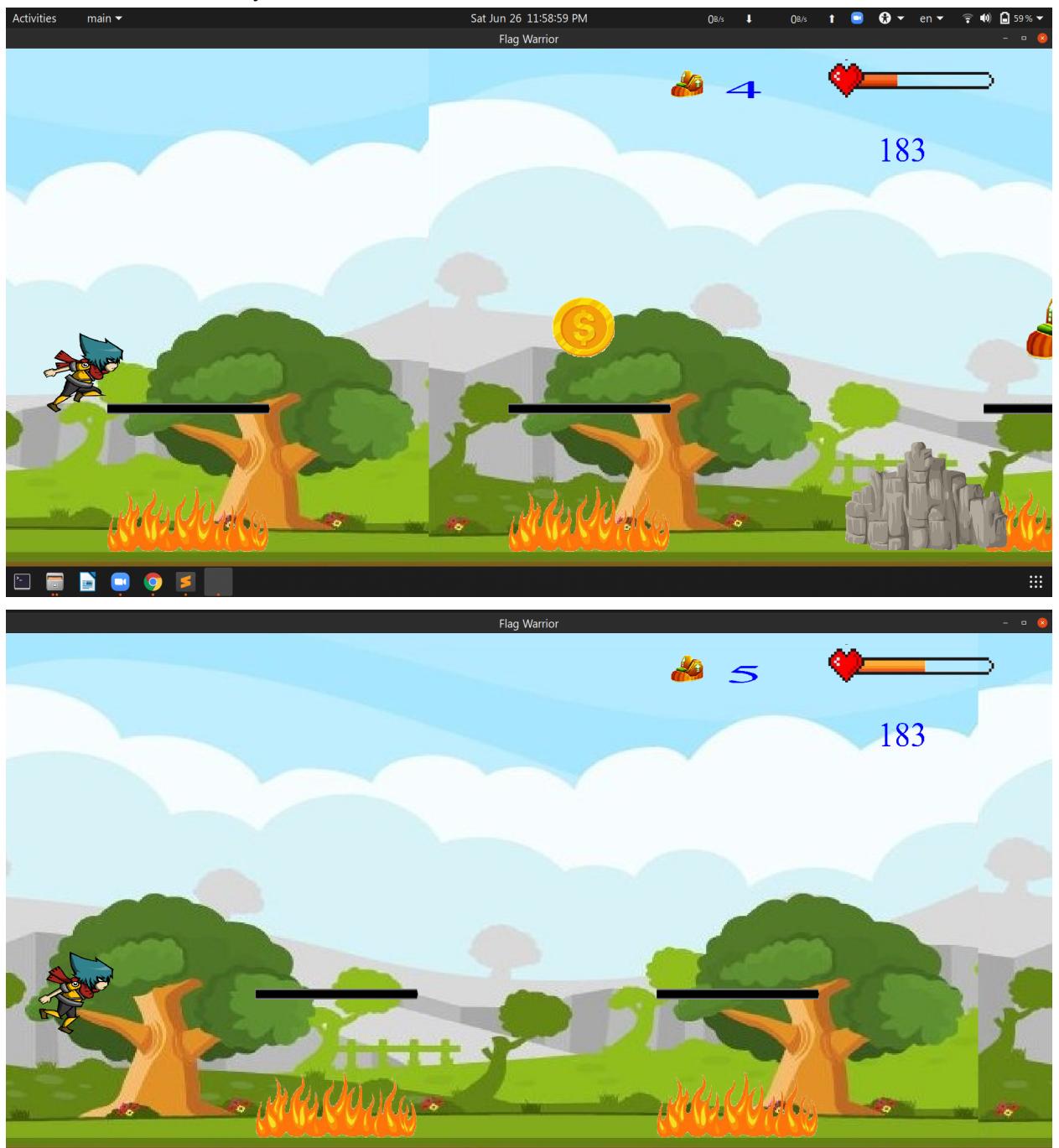
The project is basically a game where the character will run from one end to another. In its way he will face some obstacles and will try to avoid them. Users can control the characters movement using the keyboard. Collision with the obstacle will decrease the life and bonus life can be found in the game and user will have to collect them. The difficulty levels of the game will increase after scoring some points and it will be basically speeding up the running process. Some other bonus points like coins and sneakers can be also found and collected in the game. With the sneakers, the user can make a hyper jump which is higher than normal jump, but the number of these special jumps will be limited. So the user will have to be careful about that. Hitting a big rock will kill the character immediately and end the game. There will be fires in the runway. Going through the fire will decrease the life of the runner.

Objectives

The project is mainly for entertainment purposes. The user can play the game and enjoy it. And the task of avoiding collisions with obstacles and looking for bonuses will help increase the ability to focus more.

Project Features

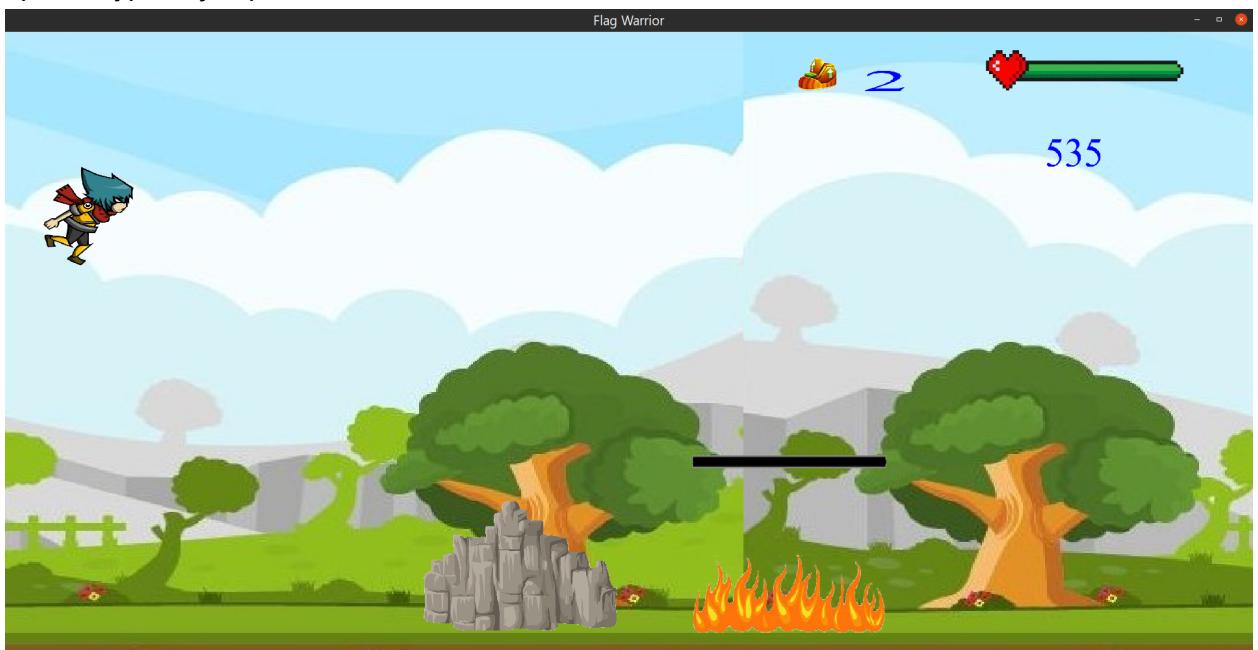
1. Character Movement by user.



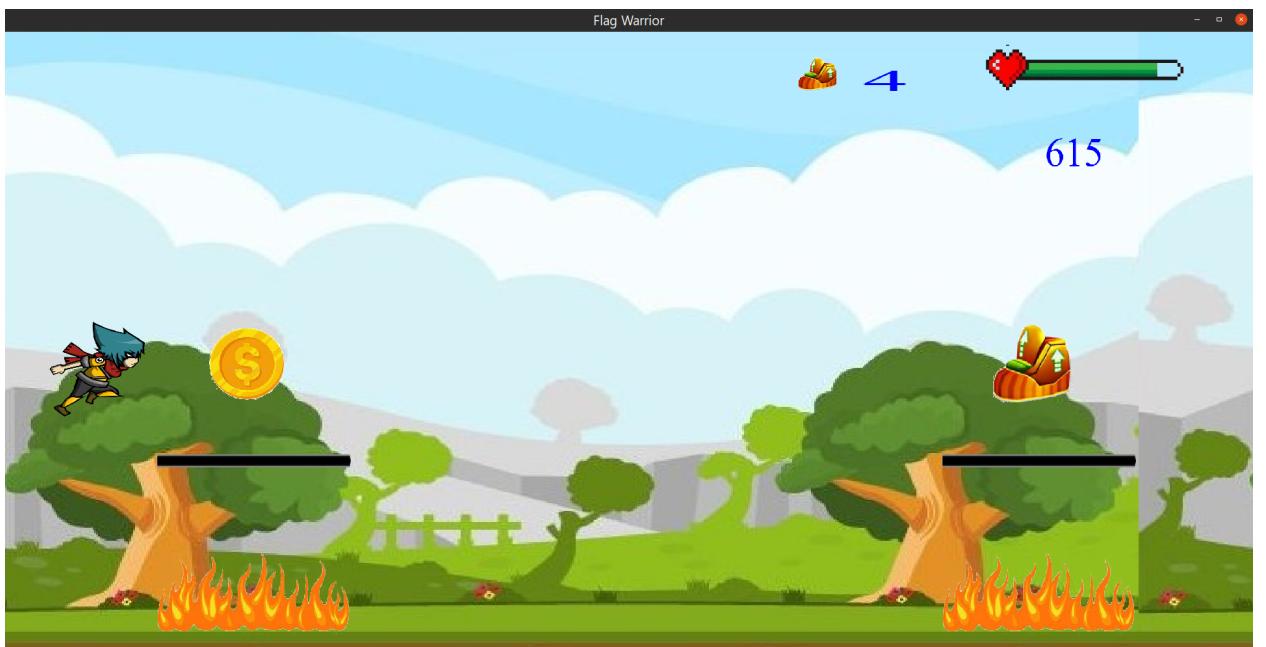
2. Easy User interface.



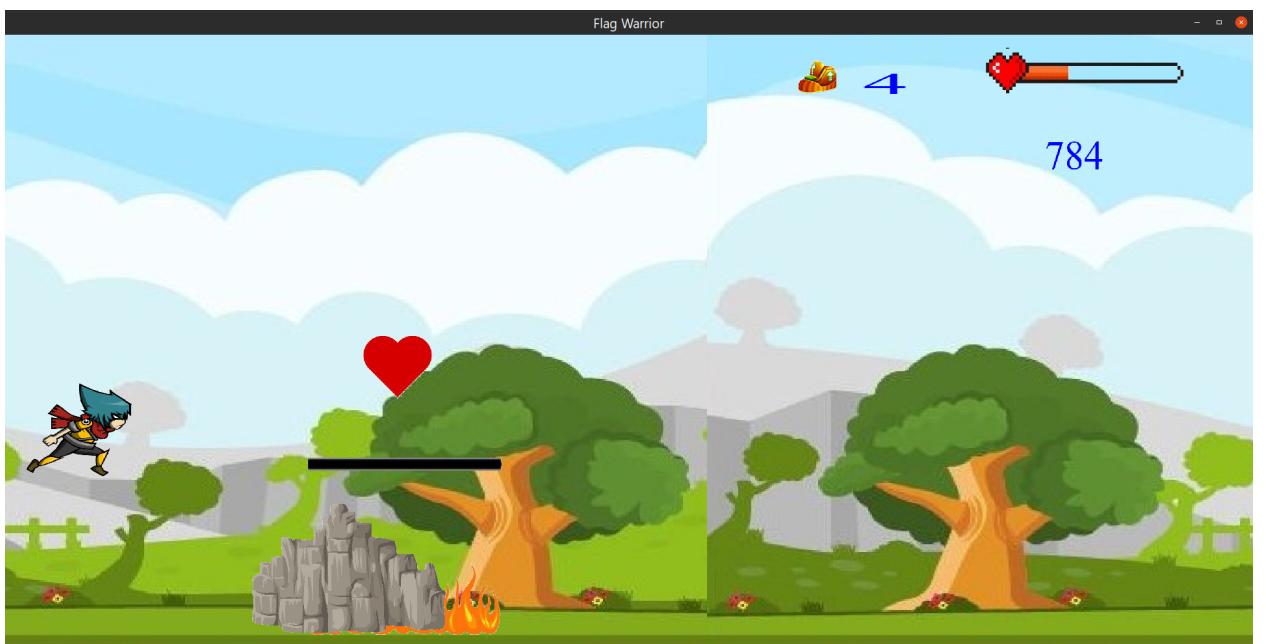
3. Special type of jump.



4. Bonus tokens increase - score

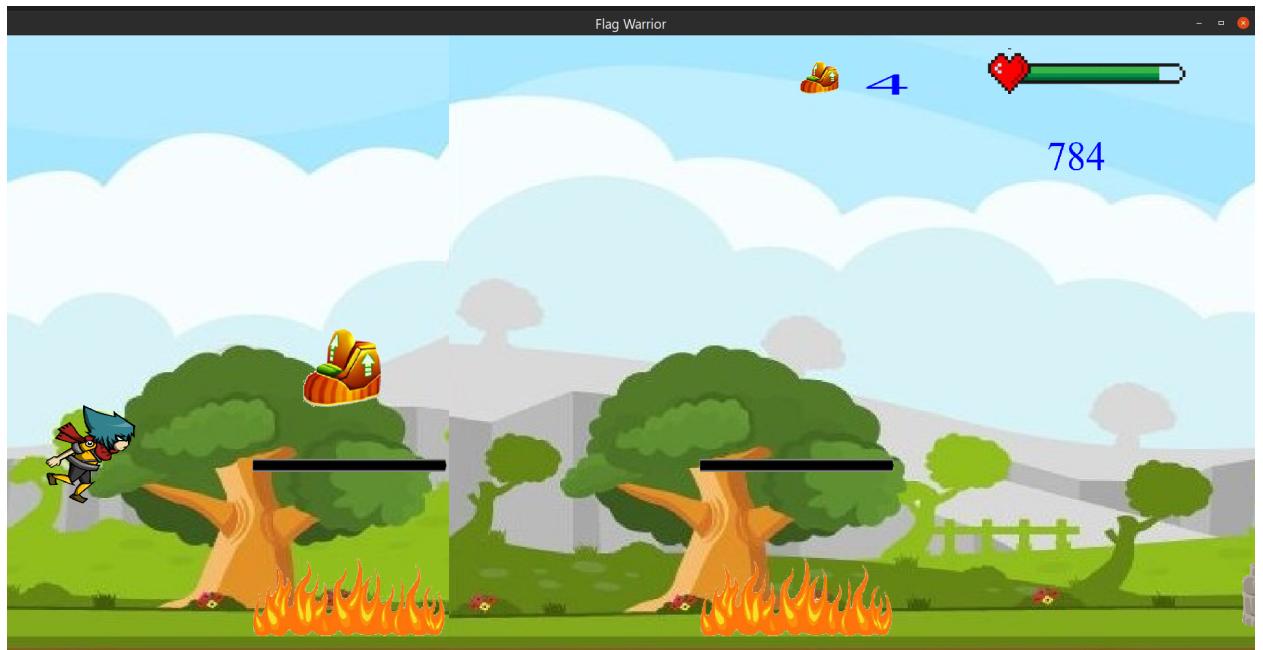


5. Bonus tokens increase - life

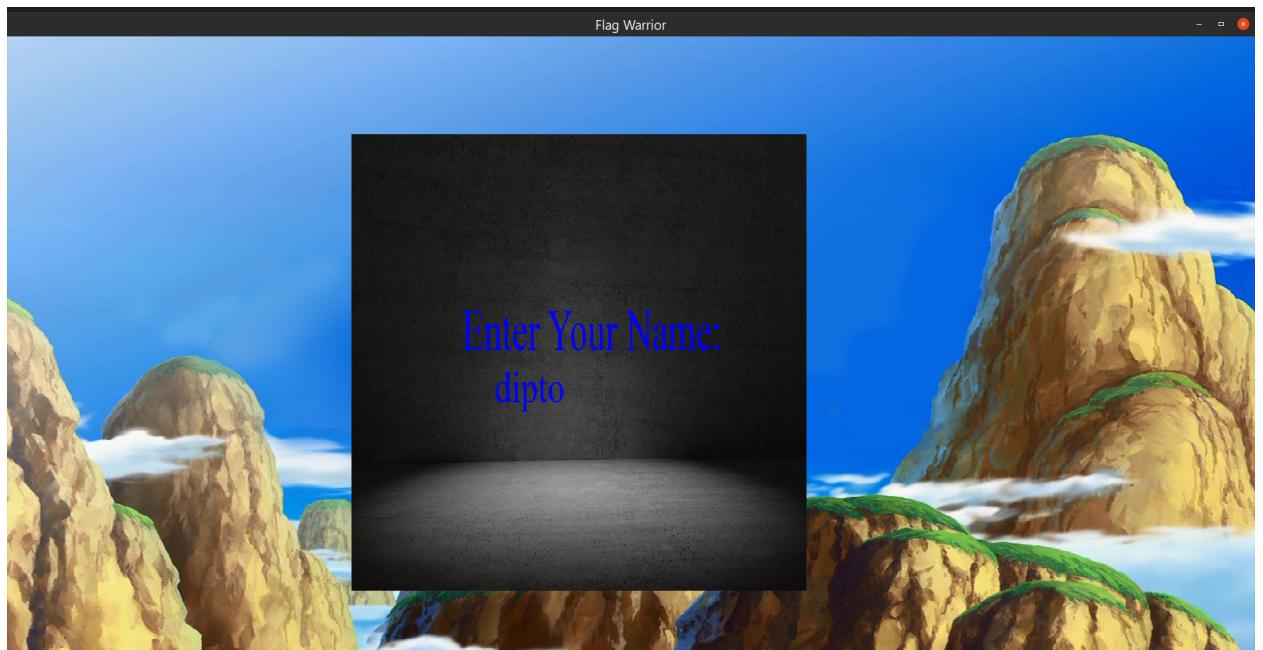


6. Multiple levels of Difficulty.

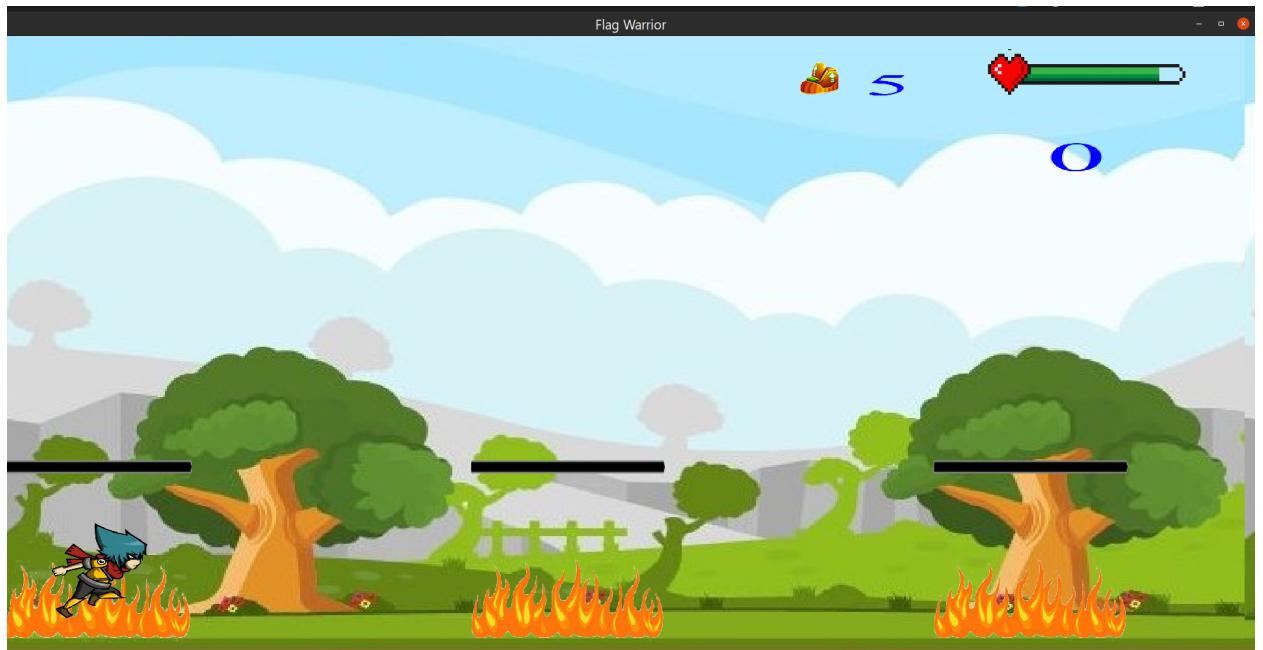
7. Bonus tokens to avail hyper jump



8. Score saving capability



9. Obstacles collision



10. Sound

Project Modules

We tried to implement some header files. These are:

1. run_game.h : it will generate some random numbers and spawn the obstacles and bar accordingly, handle user inputs of the game, show and save the score.
2. LoadMainScreen.h: it will load the main or introductory screen of the game where the ttf.h library is mainly used to show the texts to guide the user to the game.
3. Renderwindow.h : we tried to render the main window through this header file.

Team Member Responsibilities

Nafiu Hasan:

1. User Interface.
2. Character movement.
3. Point collection , lifespan control.
4. Bars and obstacle movement

Dipto Shaha:

1. Resource collection and load.
2. Points / lives increment decrement criteria
3. Score save .
4. Difficulties control.
5. Sound

Platform, Library & Tools

1. SDL 2.0
2. C and C++
3. C libraries : stdio.h, stdlib.h, time.h, string.h etc.
4. SDL libraries: mixer.h, ttf.h, timer.h, image.h etc.

Limitations

- 1.We tried to use some more movements but couldn't do it.
- 2.We failed to achieve a special feature of invincibility.

Conclusions

We have learned the detailed application of SDL from this project. We also learned to implement some functions. How to write a better code or debugging them, and giving the code an animation look were also some good learnings from this project. Though we had a lot of ideas and bigger plan to implement, but couldn't achieve those. We faced some difficulties during making the code modular, searching for a specific built in function of SDL and trying to learn them properly. As the SDL wiki is not completed and doesn't have that much information or example codes, it was hard to figure out some functionality of functions and learn them.

Future plan

We have a plan to add some more features to the project and take the project to a new level. We will try to give it a 3d look and make it more interesting. We are trying to overcome the failures and hope that we can add the planned features which we missed, in the near future.

Repositories

GitHub Repository:<https://github.com/Dipto-shaha/SDL2-Project>

Youtube Video: <https://youtu.be/DsubXd-ThqY>

References

SDL Wiki : <https://wiki.libsdl.org/>

Lazy Foo : <https://lazyfoo.net/tutorials/SDL/>

Youtube Channel CodingMadeEasy : SDL Made Easy Playlist
https://www.youtube.com/playlist?list=PLHJE4y54mpC5_eEz9gCqIkNpU-n_2eyNt