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Project type:	Individual
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In this report on educational practice I will provide description of the activities conducted between November 8 and 20, 2020.

The two weeks of intensive coding for this EP project was a good practice before the final exams. In this project I applied the C++ skills to create a small console game using the knowledge I gained during the first term at Astana IT University.

I used code::blocks IDE for the code and repl.it for functions as they should be checked before inserting into a massive code.

The table below contains the daily progress:

08.11.2020	I received instructions and the task for the EP project.
09.11.2020	1) First C++ stream was about syntax and the lecture shared insights for better coding. 2) I was debating on the topic for my educational practice project (hereinafter – EP project). After the lecture I did not clearly understand what kind of project was expected besides that it could be implementation of any game and coded using any language. Therefore I chose to code a chess game on C++ that according to the university syllabus we were studying for the past 2.5 months. I watched some videos on YouTube related to game writing as tic-tac-toe, snake, and some others at the evening. I was watching how to write these games for about hour and a half, then I was generating my plan on how I could write chess as a console game. Some of my friends are going to code their projects either on python or java because C++ is much more complicated for them, so I am thinking of learning one of the above programming languages to complete my project. 3) On the guest lecture was Vladislav who is currently working in Google as a software engineer. He had 10 years of experience before applying to Google and I felt really motivated after his talk. For now, known the complexity of his job, I doubt that I could take on responsibilities to work there. He is a strong leader, humble and pleasant presenter.

10.11.2020	1) Fellow second year students, who had finals for the 4th term were telling that mr. Akizltanov is one of the best teachers in our university. I agree with their opinion because he explained to us very clearly the if-else statements and how to code using ternary operations. 2) I started the code's skeleton and some display features for moves of white figures. Here is the code: https://pastebin.com/6qrFKisS I used the code::blocks claimed to be the lightest application compiling codes written on C++/c. The code is enclosed in the pastebin. The main problem I faced while coding is that I do not know how to prevent outputting asterisks of that possible moves. I tried to write a condition where it should check previous spaces where asterisks were, but it did not work at all and somehow ruined what was working before. 3) Mr. Zaitsev talked about studying abroad. I do not plan to get my masters abroad, but now I know what I can do in case I suddenly feel a strong desire in foreign country diploma.
11.11.2020	1) I love the way ms.Kalakova gave educational streams, her energy, tone, voice were easy to follow. She explained use of loops, and promised about recursion will be covered by another teacher soon. 2) Today I was trying to fix that bug with possible moves and develop 2 more features regarding check and mate, but could not write it properly to run the way it was running before. Besides, I have realized that writing a whole chess as a console game would be too complicated challenge for me, so I committed to create 3-check-chess. .

```
#include <bits/stdc++.h>
using namespace std;

char table[65][65];

int conv(char a) {
  if (a == 'a'){
    return 1;
  } else if(a == 'b'){
    return 2;
  } else if(a == 'c'){
    return 3;
  } else if(a == 'd'){
    return 4;
  } else if(a == 'e'){
    return 5;
  } else if(a == 'f'){
    return 6;
  } else if(a == 'g'){
    return 7;
  } else if(a == 'h'){
    return 8;
  }
}

struct hodi {
```

	Here is a function to convert chars to numbers to use them in the two-dimensional array later. I added a new swap function in code to make real moves. Before there was display just possible ones. Now they are moving on whitespace. Later, I need to add function to eat figures. 3) Ms.Possokhova told us how to create a better portfolio. She advised to register in LinkedIn, github, try to be active at university and start working while being a student. She shared how to present our achievements, how to behave during the interviews. I found this lecture useful.
12.11.2020	1) One-dimensional array was challenging for me sometime before, which means some students were also struggling with them. I had no questions, but the stream was still informative in terms of revising. 2) It seemed to be tough to create a 3-check chess, because I could not code mate and check cases, castling yet. Therefore today I will be working on anti-chess. The main difference between casual and these ones is that there is no mate and check as you play until figures run out of the board. King is the same figure as others and could be eaten as well. 3) I wanted to participate in ICPC next year, and I had some questions on how it is going, how to prepare for competition, advantages for future portfolio. I asked him these questions and shared that I am motivated to study more to attend ICPC next year.
13.11.2020	1) I learned that array could be not only two-dimensional, but three or four-dimensional, too. In my view, problems I Were solving today are not complex because of the complex array but for making us think on how the problem could be solved. 2) You know that pawns can go two steps upward if they never was going before, so I tried to do it with classes from object-oriented programming. Here is code I could write by learning classes from the YouTube. I want to use them to check if the move is possible to do, and if it is not, it will return back again

```
#include <cstdlib>
#include <iostream>
#include <string>
#include <vector>
#include <sys/types.h>
#include <dirent.h>
#include <sys/stat.h>
using namespace std;

class moves {
private:
    char hodch;
    int hodint;
public:
    char GetName(){
      return hodch;
    }
    void setchar(char hodch){this->hodch = hodch;}
     int getint(){return hodint;}
    void setint(int hodintt){this->hodint = hodintt;}

    void setint(int hodintt){this->hodint = hodintt;}

    void setall(char, int);
    moves(char, int);
    moves();
    ~moves();

    void ToString();

};
void moves::setall(char hodch, int hodint){
    this->hodch = hodch;
    this->hodint = hodint;
}

int main()
{
    moves ladya;
    char ch;
    int intt;
    cin>>ch>>intt;
    ladya.setall(ch, intt);

    return 0;
```

	3) woman presenting mobile development works in andriod app development company and works in team. I in team Ill, but I have to learn. She is quite smart, tacktive, sometimes students asked her questions like “why do you use mac laptop if you are android app developer?” I do not even imagine how someone could be that nasty to ask it from guest.
14.11.2020	I was preparing for a calculus 1 exam by watching “calculus in 12 hours” on YouTube today.
15.11.2020	I was looking at calculus 1 problems I had during this 10 weeks, area of odd figures in particular had taken most of my time today.
16.11.2020	1) I struggled with functions, teacher had problems with micro, but I covered functions, which is one of the main topics in any programming language. He also explained it on mathematical functions example, how to call functions in other functions or that very function which is recursion. Today was pretty nice stream. 2) I tried to rewrite code without using classes as it was before, because it seen to be useless use classes in my project as I can use structures only, but I removed structures here, too. 3) A number of entrepreneurships could be created in IT sphere, he works as a senior lecturer for a long time. The most memorable part in his speech was about non-economist economics, money devotion by government was something I never thought about.
17.11.2020	1) Aigerim teacher explained us pointers today, pointers could be triple, or with 4 asterisks, that is new thing for me. She solved few problems only explanation took the most part of her lecture. 2) code is finally done for project, now if you are good at chess notation, you can play it Ill I guess. https://repl.it/@AzharBek/sthththhtth22#main.cpp 3) Maria works in KazDreamTechnologies and she told us about interface designing, what types human technology interactions could be, how to get work if you have no professional experience yet, what courses are better for us if I want to become interface designer.
18.11.2020	1) As in the previous stream I Were passing pointers, now I know difference between cstring and string libraries, some differences between heap and stack memory. I never seen word “token” in codes before, I am interested in strtok, null in codes now. Going to google it later today. 3) I always thought game development is only for nerds or someone who is highly smart and keen on programming telling that I cannot develop games. But after today’s tutorial I know that creating games on Unity using assets is not that hard I thought it is. On the weekends I will watch some tutorials on Unity usage and C# language, because I think it is useful skill for my future career.
19.11.2020	1) I was a bit late for the today’s stream but I watched it then on 2x. I Were solving 1007th problem for 1,333 hour and passing structures simultaneously. I used methods in the problem’s code, but Askar teacher did not, he used outer functions to sort students. Lecture was helpful not only for some students who could not solve 10th week in contester, but for others as preparation for finals. 3) The woman, who had 53 slides in her presentation today was literally emitting motivation to study hard. While studying abroad by

	Bolashak master's degree program she wrote more than 10 scientific articles on automatization within one single year. She was working in laboratory till 4 am just to complete research as soon as it is possible. Also she handled to teach students, become leader of an important start-up project. Her life is pretty saturated with achievements, I see.
20.11.2020	1) Strings are the last topic in C++ course for the first term. Some of the students did not get how to use them properly, but for me this topic seem to be quite easy to understand because I already knew how to integrate vectors and maps with other code rows. I knew that strings are a kind of separate class but I did not knew that it also has "push", "pop" methods. 3) Lecturer explained what scientists name as AI, why is it needed, and how it is used nowadays.

Conclusion

I enjoyed the way practice was: I had enough time to prepare for exams coming next week, I were revising C++, working on more complex problems as my project. I received clarifications for all questions I had before regarding the language. Lecturers provided material I already knew at the moment, they were pretty competent at programming field. Different speaker shared different aspects that I should pay attention to besides the main courses. The EP project was great for defining challenges as a gaps in my C++ skills.

I hope that objectives of this report I will met.