

Spojená Škola Novohradská
Middle Years Program

Personal Project
Formula 1
Essay

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1. Introduction

I have chosen to write my personal project about Formula 1 because it is a topic which I am very interested in. I watched motorsport and Formula 1 since my childhood, therefore it is a very good topic for my personal project, because it is really personal.

Besides watching Formula 1 on TV or PC, I am not really interested in technical information, my interest is mostly aimed on the statistical side, like who won when and similar. I am also interested in historical information about Formula 1 and other racing cars. When watching Formula 1, I like to analyze things about the sport and about things that happen while watching. I also like to visit some exhibitions of F1 cars or cars in general. From my childhood I never used to miss any Autosalon which was either in Slovenia or here in Slovakia.

The point of my Personal Project was to interest the teachers, my classmates and other students, their parents, and other which could be interested in the topic. Interest and show it to people, who normally aren't interested in this topic, that it can be also attractive for them and that they can find many interesting things in there, and that they would want to know more about the topic. And next time they see a Formula 1 race, they don't just switch the channel, and that they can tell themselves that they know something more than before.

On a meeting with my supervisor we agreed on AOI Human Ingenuity, because this topic really demonstrates the technical achievements of human kind. My idea was to make a project based on technical information, also because the AOI fitted the topic perfectly and no other one was that simple to put in. Other AOI could also be used, I could demonstrate Health and Social Education with pointing to ecological aspects, but this all was only in a theoretical means.

My plans were changing when time went on, later the poster changed into A0, I also thought about adding more about circuits, and some circuits would be written and drawn on a paper. But how it ended you can see in the end of the essay.

2. Process of work

After we got the personal project assignment, I started to think about my theme. I wanted to do something which would be enough personal for me, but also enough interesting for people. The first really serious topic was Geography of Slovakia, something about the most interesting places. I started to make a plan on that topic, but then I got a better idea, which was Formula 1. It was more personal than the previous topic. By the end of summer holidays I had my plan for this topic done.

After the holidays, I had a meeting with my supervisor. As mentioned before, we both agreed on AOI Human Ingenuity. We also agreed on the content, which I had planned throughout the summer holidays. As you will see later, the topics which really had to be used were technique, formerly the main part of the product, history, interesting facts and something from my personal view.

I started to work seriously after the summer holidays. After short consultations with my mom I decided that the first things I will start to research will be historical facts and information about old car racing and some interesting facts I could be using in the project. History of car racing really was the first topic which is mentioned in the project, because it is the start of racing and start of technique too. Even though, the text order wasn't really important, after considering some things, and making major changes later on. Since researching information about history of cars, racing and F1 could be done in books which I have, I used them more than the internet. But internet research was needed when I was researching technique. Since one of my books is in Slovenian, I didn't really understand everything, I used the internet, but it mostly came in handy later. The sources used were no. 2, no. 4, no. 5 and no. 10. And I also have luck to know people which

really know much, either about history or about other, later mentioned topics, I used their help as well.

Between working on the product, I had to prepare some product for my mini-fair program. I decided to prepare a Power-point presentation, where I described the basics of car racing, Formula 1 and what will appear on the final product. The presentation didn't really take a lot of time to do.

For technique I needed a lot more time, because it is not really my favorite topic, but it really is needed in a project about cars of any kind. Technique, is with the driver factor the most important part of the Formula 1 car, so it simply can't be missing. For technique I used help from other people as most as I could because it is was formerly the most important part of the project and the topic I knew the least about. Sources used here were no. 2, no. 3, no. 6, no. 7 and no. 11. Firstly I needed to know some basics principles of the "machines" and technique used in the cars, because my knowledge wasn't good in this part. Here I used mostly help from the internet and from some other people. Of course, I started to write the topic with the things which were well known to me, but there wasn't really much I knew myself, so I used the internet first and most.

Another important part of my project were the photos which were shot by me in Avion Shopping Center Bratislava on the 29th October. There was a F1 car exhibited and I didn't hesitate and took as many pictures that were needed. I concentrated mostly on the technique, and looks of the car, to give a chance to the person to see how the car really looks like. These pictures were used in the project.

In app. the start of November, the major text part was done. After that, major structural changes came. I started formatting the text into the form it has now. The history was rewritten and every decade is on its own page, and there is always a picture. Technique was finalized by adding mostly my own photos which I shot earlier. After that I wrote the more interesting parts for me, as information about the circuits where I used sources from no. 13 to no. 15 and from no. 17 to no. 21. After that I wrote about the

curiosities and some basic statistics for which I used sources no. 2, no. 5, no. 10, no. 14 and no. 16. The final things were about F1 headquarters and FIA, where I used no. 1, no. 8 and no. 9. Then I started to concentrate on the poster and the final product. The formatting of the poster was discussed with my mom at home, and then with my supervisor on a meeting. The idea was accepted and considered to be good, so I decided to do it that way. With problems with getting a poster of some size I lost a lot of time, but I managed to make some good drafts, either of the poster or of the pictures in it. The effort seemed to be useless, because my hands simply weren't capable of making such a masterpiece for me. After some time, I got an idea to make the poster on a computer, because one of my consultants was able to do it in some program. I prepared the poster design by hand on a A3 paper, and had it redrawn by computer in a architectonic program. I also had a conversation with some experts on F1 and cars in general. This small discussion was needed to add some final inspiration to my work, and to minimize a chance of mistakes in the technical part. After three days, the poster was finished. Then I started making some final pictures on the PC and had them printed. And the last week before the deadline, I worked on it every day for some 1-2 hours. I finalized firstly the more simple things and then the hard ones, like the formula car, with which my mom helped me in a big way. I can say that the car was the hardest part of the whole project. During the last week I had also rewritten the process journal, because I didn't find time for it on any other time. I found out that I have to rewrite it, only two weeks before the deadline, so I did it almost on the very last moment.

3. Final Analysis

When the project is finished I can evaluate my work. When the final product is compared to my ideas in the beginning, there are some minor and major differences. The first one is that the project is on a bigger format than it was planned, A0, not A1 or A2. Just by this change I lost a lot of time, when trying to get, first a A1 poster, I walked through the whole Bratislava downtown trying to get it, then a A0 poster, when I made the whole procedure again. The second major difference is that the poster work is done by computer. The hand made work couldn't be that good than the PC made one. The next

difference is that the poster has a very different structure, than formerly planned. Basically I am satisfied with the changes.

To the content, there is a big difference. Firstly, the technical part is not that big as it was planned to be. There are more practical things, like start lights, flags and things which might interest a wider public as I wrote in the beginning. Therefore there is less theory and more curiosities. I also put in my own photos, which I shot. Another change was adding my custom made track on the poster. The track included all types of turns which are present on classic circuits and also the pits. In the middle of the circuit there is a F1 car, drawn by me. It was also planned, although it was much harder than I thought it would be. As already mentioned, my mom had to help me with it in some aspects. All the things were my own ideas and she only helped me with realization since I have really no artistic talent. My final impression of my product was positive, although it could have been done better, if my attitude to the work on the project was better. As is saw later, I found out that I really didn't have to concentrate on the product as much as I did.

The reason I chose to make my product on a poster was that on a really big paper I could show and write everything about the topic. There are many different types of posters, the one I have is far from my plan, which was simply to write some text and stick it on the paper, with some pictures around it. Maybe it would be good enough for a simple project, but not for this. Because it had to be more creative than that, as mentioned in the process part, I decided to make a poster with many hand-drawn pictures. That proved to be a good idea, but my hands simply weren't capable of making such work. That's why it is made on the PC, and there is only one but a major thing drawn by me. I didn't choose a essay or a written work simply because I wanted my project to be attractive at first sight, which a essay, even if it is good or perfect, isn't. Other option could be making a model of a race car. I didn't choose this because my hands are not capable and that precise to do such work, even though with the drawings on the poster it may not seem like that.

To the topic of AOI, human ingenuity was the chosen AOI, and the reason was, that with this particular AOI, I can describe the technical sides of the topic, it was the perfect AOI for description of the big steps that man made in technique, not only in racecars of F1 cars, but also in other things more important than cars.

This final product I done wasn't by far everything what could be theoretically done with this topic. Since Formula 1 is a very wide topic, I could've covered also other areas like pit crew, more about drivers and teams, or more in history and technique, and a lot more could be mentioned. It wasn't simply because of lack of time, motivation and because there was no need to do so much (even though, with my essay writing skills, the product is the part that can save my mark), if the all the planning I did would be completed, as my parents said, this could have been a potential Nobel price laureate.

The techniques used in the project were as simple as possible, to make the project good, but not too complicated. If I would try to do the project again, the first thing I would change is the structure. Just because of my stupid mistakes, I had to remake the structure very close to the deadline, and it really didn't look the way I wanted it to look. What I did, was that I put the PP in the nearest most possible way. If I would do it again, and have a bit more time, than I would concentrate more on the visual part of the PP, not on the text part, because it is the visual part that should interest the people and make them actually read the text.

The project itself gave me a big lift when it comes to responsibility. Before I always did my work on the very last moment possible or even didn't meet the deadlines. Thanks to PP, I understood that deadlines are important, and I learned to meet them. Another big plus is that I learned how to work under big pressure, from time and from other people, mostly parents and other family. And the pressure helped me to get what I wanted and what was needed.

4. Conclusion

To conclude this PP essay, I would like to write that I am fairly satisfied with my product, and with my working attitudes, even though everything could be done better. In this essay, I tried to point out all the good things on my product, but also a bit of self criticism, because my work wasn't perfect. Another good thing I found out was that quite a big number of people knows much about Formula 1, and on the Mini-fair presentation I was able to have a fine chat with many people and also some students. In the conclusion I would also like to thank everybody who helped me to make it, to my parents, to my supervisor for help, and to everybody else concerned about it.

5. Bibliography

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- 2 <http://en.wikipedia.org/wiki/F1>
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- 4 <http://www.f1-grandprix.com>
- 5 Grand Prix a Formule 1, David Selucký, Brno, 2005
- 6 Formula 1, Ron van der Meer and Adam Cooper, Ljubljana, 2000
- 7 <http://www.f1technical.net>
- 8 http://en.wikipedia.org/wiki/Max_Mosley
- 9 <http://en.wikipedia.org/wiki/FIA>
- 10 http://en.wikipedia.org/wiki/History_of_Formula_One
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- 14 http://en.wikipedia.org/wiki/2008_Formula_One_Season
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- 16 http://en.wikipedia.org/wiki/Female_Formula_One_Drivers
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- 20 http://en.wikipedia.org/wiki/Circuit_de_Catalunya
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http://bp1.blogger.com/_Nf1PeinLpII/R4CfOivVmMI/AAAAAAAAAHk/iZ3JeQWDAPU/s1600-h/06+toyota_logo.jpg

http://bp1.blogger.com/_Nf1PeinLpII/R4CfOivVmNI/AAAAAAAAAHs/ooh3w5ft6Pk/s1600-h/07+tororosso_001.jpg

http://bp1.blogger.com/_Nf1PeinLpII/R4CfOivVmOI/AAAAAAAAAH0/62oM77-2Cys/s1600-h/08+honda_logo.jpg

<http://www.f1wolf.com/wp-content/uploads/2008/03/force-india-f1-logo-small.jpg>

and my private sources

6. Appendix

“The first official race in 1895 was 1200(!) km long” - Grand Prix a Formule 1, David Selucký, Brno, 2005, page 8

“the name Grand Prix, which means Big Price or something similar, was used in 1901” – as previous – page 10

“These were only shallow pits dug by the side of the track, where the “mechanics” worked with deattachable rims on tires.” – as previous - <http://www.f1-grandprix.com/history1.html>

“cars were far too heavy and too fast for their tires some used even 10 sets of tires throughout the race.” - <http://www.f1-grandprix.com/history1.html>

“In those times the French, German and Italian were the best in motoracing.” – no. 5 – page 14

“Also the first great woman driver was on scene. It was Eliška Junková from Czechoslovakia.” – no. 5 – page 15

In the thirties, the leading position in motorsport started to shift towards Germany with the elite factories like Auto-Union (now Audi) or Mercedes-Benz, because they had big financial support from Adolph Hitler - <http://www.f1-grandprix.com/history1.html>

“The first world champion in Formula 1 was Giuseppe (Nino) Farina.” - http://en.wikipedia.org/wiki/History_of_Formula_One

“big accident in Le Mans in 1955, “thanks” to which races were cancelled in Switzerland and the Netherlands.” – no. 6 – Zmagovalci – page 4

“One of the best races in the F1 championship history was in Reims, France in 1953.” – no. 5 – pages 36-37

“This era was mostly controlled by British teams and drivers from English speaking countries.” - <http://www.f1-grandprix.com/history3.html#British>

“Jim Clark, by many considered the most talented driver ever.” – no. 5 – page 59

“John Surtees, who is the only one to win a world championship on two and four wheels.” – no. 5 – page 57

“This decade is also specific by the first usage of front wings on cars.” - <http://www.f1-grandprix.com/history4.html#Wings>

“In this decade also commercials came to F1, and all the teams started to have sponsors.” – no. 5 – page 64

“The world champion Jochen Rindt died in a race in Monza, and he is the only world champion in memoriam.” -

http://en.wikipedia.org/wiki/History_of_Formula_One#Sponsorship_arrives

“Lauda barely survived, the burns on his face can be still seen today, but after 6 weeks he raced again. – no. 5 – page 80

“In this decade turbo motors were still used, but the cars started to be too fast so the piston limit was set to 12.” - <http://www.f1-grandprix.com/history4.html#Wings>

“Prost won 4 world titles and 51 grand prix races, which was a record until Michael Schumacher came.” – no. 5 – page 104

“The '88 season was captured by a total dominance of McLaren winning 15 of 16 races and scoring 199 points which was a record till 2002.” -

http://en.wikipedia.org/wiki/History_of_Formula_One#Domination_of_McLaren_and_Williams

“In this decade turbo motors were forbidden.” – no. 5 – page 102

“Nigel Mansell won his only world title setting a new record of 9 wins in one season.” -

http://en.wikipedia.org/wiki/History_of_Formula_One#Domination_of_McLaren_and_Williams

“Sunday 1st May 1994, Ayrton Senna crashed in the Tamburello corner and died later that day due to serious head injuries.” – no. 5 – page 111

“The F1 car is able to “survive” more than 5G and that is 5 times a weight of the car which is min. 600kg.” - <http://www.f1complete.com/content/view/1380/283/>

“what do they (brakes) consist of? It is a rotor and a caliper which, when the brakes are pushed is touching the wheel and slows the car. They are made of carbon fibers” -

<http://www.f1complete.com/content/view/1380/283/>

“Carbon fibers are used instead of steel because of its thermal and frictional properties. It also reduces weight of the car.” - <http://www.f1complete.com/content/view/1380/283/>

“Average F1 cars can brake from 100 km/h to 0 in about 17m.” - <http://www.f1complete.com/content/view/1380/283/>

“In a car engine, the principle is very similar to F1 engines, but they use less power.” - <http://www.f1complete.com/content/view/1283/283/>

“This is called the intake-stroke” - <http://en.wikipedia.org/wiki/engine>

“By a spark plug, a spark is made to light up the gasoline, and make it explode.” - <http://en.wikipedia.org/wiki/engine>

“The entire engine is made of aluminum and iron alloys, other materials were banned by FIA.” - <http://www.f1complete.com/content/view/1283/283/>

“The F1 engines have 2.4 l displacement and V8 configuration.” - <http://www.f1complete.com/content/view/1283/283/>

“The F1 engines make 1750 kW of power per minute, their temperature is over 1000 °C, and they consume about 650 liters of air per second. They about 75 liters of fuel per 100 km,” - <http://www.f1complete.com/content/view/1283/283/>

“The engines have to be used in 2 GPs.” - <http://en.wikipedia.org/wiki/F1>

“The F1 tires had in the last 12 years grooves, but in the next season slick tires will be used again.” - <http://en.wikipedia.org/wiki/F1>

“They are extra durable against ripping and have to be compressed in a very precise amount of pressure according to the track conditions.” - <http://www.f1complete.com/content/view/1287/283/>

“The F1 fuel is quite similar to ordinary gasoline, even the rules say that F1 fuel can't contain compounds which are not in ordinary gasoline” - <http://www.f1complete.com/content/view/1378/283/>

“All fuel teams have to be able to put a sample of their fuel to FIA before and after the race for investigation.” - <http://www.f1complete.com/content/view/1378/283/>

“The driver shifts gears by using paddles behind the steering wheel which send signals to the hydraulic system which automatically performs the change.” - <http://www.f1complete.com/content/view/1286/389/>

“The clutch itself is a multi-plate carbon design of diameter less than 100mm and weighs less than 1 kg and can handle more than 900 horsepower.” –

<http://www.f1complete.com/content/view/1286/389/>

“in GP of Monaco where it is used app. 3600 times during the race.” -

<http://www.f1complete.com/content/view/1286/389/>

“The shifting has to be absolutely precise, itself it lasts about 25-30 milliseconds” -

<http://www.f1complete.com/content/view/1286/389/>

“In the not so far past the drivers had a steering wheel with the temperature of oil and water and maybe some other lights.” – no. 6 – page 10

“drivers are looking on a LCD monitor where all the important information are, e.g. the fastest lap, amount of fuel left, engine temperature, etc.” – no. 6 – page 10

“Originally the wings were used for better grip, but now they are made in a major aerodynamic way.” -

<http://www.f1complete.com/index.php?option=content&task=view&id=2245>

“The only circuit which is in the calendar from the start of F1 in 1950 is Monaco, even though the circuit was changed a bit.” – no. 1

“In the history, there were mostly teams owned by a car company, like Alfa Romeo, Mercedes or Ferrari.” – no. 5 – page 12

“Williams, Force India, Red Bull Racing and Toro Rosso are controlled by private proprietors.” – no. 2

“The boss of FIA is Max Mosley. FIA headquarters is in Paris, France.” – no. 9

“FIA has the right to make laws and decisions over these competitions. It also watches over money flow, and rules.” – no. 9

“FIA – Fédération Internationale de l'Automobile” – no. 9

“FIA watches over e.g. Formula 1, World Touring Car Championship (WTCC) or the World Rally Championship (WRC). – no. 9

“Mosley himself is also not a popular person, since of his controversial statements, and his will to save as much money as possible.” – no. 8

“F1 is a competition which has currently only men drivers, but there were also women drivers in F1, exactly 5.” – no. 16

“Maria-Theresa de Fillipis was the first woman driver. In her first attempt to qualify to a race she did not succeed but she beat a driver called Bernie Ecclestone, who is currently the F1 boss.” – no. 16

Whole section F1 Curiosities and Records is taken from: no. 12, no. 15

Albert Park Circuit section: no. 17

Sepang Circuit section: no. 18

Bahrain GP section: no. 19

Circuit de Catalunya section: no. 20

Istanbul Park section: no. 21

Information on pictures on the poster from no. 6 – pages 7, 9, 10, 11, 12, 13