IB COMPUTER SCIENCE SL

INTERNAL ASSESSMENT: WEB APPLICATION

# MUSEUM GUIDE FOR TOURISTS

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# Criterion A: Planning

### Section A1: Problem analysis

The problem touches people who decide to come to visit the city of Boston and who want to efficiently use the time of their stay in that city. They do not know the city very well on the ground of the fact that they are tourists who come from all over the world. However, they would like to visit as many places as possible in the shortest time – with a special emphasis on the Boston's museums. They would like to have a ready information about the approximate time which may be spent to visit a specific museum, because they do have a time limit. What is more, they would like to get a list of recommended museums – specific names of places, with some details, for example links to museums' websites, so that they can get to know more about the places they are planning to visit.

- Consultation with the client – to be added
- Evidence of consultation with the client – to be added

### Section A2: Solution

I have decided to create a solution in the form of a web application in Java. In order to use it, users will have to specify how much time they have in Boston and how much time they would like to spend at each museum, type those data in a search field and wait for the answer from the program. After their input, the program will display names of the museums, to which they may go. What is more, the program will create a recommended list of places, taking into consideration users' time limits and thus providing them with the most efficient plan to visit the most number of museums in the time they have inputed. The list will be also supported by links to the websites of the displayed museums, so that users can have more information about their destinations.

With having a web application, users will have everything within arm's reach. They will have a possibility to plan ahead, use their time in the most efficient way and also, avoid being lost. With the automatically generated list of places, they will have a clear view on the city's cultural institutions and times that are needed to explore them.

I want to create this application on the example of Boston, because it is the city which I know the best. It will be a good idea for people who do not visit Boston often and are not familiar with Boston's museums.

### Section A3: Criteria for success

To make this project successful I will have to meet a number of criteria.

1. A user will enter how much time they have to sightsee in Boston.
2. A user will enter how much time they want to spend at each museum.
3. The program will reference a weighted graph of each major museum in Boston.
4. The weight between nodes will represent the average travelling time via public transportation (Metro).
5. The program will use dykstra'a best path algorithm to find the most efficient path considering the amount of time a user has.

# Criterion B: Record of tasks

**Section B1: Record of Tasks**

| Task number | Planned action | Planned outcome | Time estimated | Target completion date | Criterion |
|---|---|---|---|---|---|
| 1. | First meeting with client – understanding the problem | Draft of the problem analysis | 4 hours | 15th October 2017 | A |
| 2. | Initial discussion with advisor – Computer Science teacher | Ideas approved by advisor | 0.5 hours | 19th October 2017 | A |
| 3. | Describing the final problem analysis | Final problem analysis | 0.5 hours | 19th October 2017 | A |
| 4. | Finding the solution | Ideas on the possible solution for the problem | 4 hours | 21th October 2017 | A |
| 5. | Second meeting with the client – consultation of the solution | Idea approved by the client | 4 hours | 24th October 2017 | A |
| 6. | Describing the final solution | Final solution | 1 hour | 26th October2017 | A |
| 7. | Describing criteria for success | Stated criteria for success | 1 hour | 26th October 2017 | A |
| 8. | Creating record of tasks | Records of tasks table | 4 hours | 30th October 2017 | B |
| 9. | Gathering data about museums in Boston | List of all museums in Boston and information about the approximate time which may be spent in each of the museums from the list | 8 hours | 14th November 2017 | B |
| 10. | **Learning Java concepts that may be used to create** | **Outline of the further actions** | 60 hours | 24th November 2017 | B |

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|---|---|---|---|---|---|
| | **my program** | | | | |
| 11. | Establishing graphs and required relationships between the chosen museums | Creation of the calculated graph which will be the base of the program | 10 hours | 26th November 2017 | B |
| 12. | Working on the design and cover page | Finished cover page and outlook of the program | 4 hours | 28th November 2017 | C |
| 13. | Identification and explanation of techniques used in developing the product | Full explanation of the steps taken in creating the program | 10 hours | 20th December 2017 | C |
| 14. | Using previously defined techniques with the appropriate use of existing tools | Improvement of the mistakes | 10 hours | 31th December 2017 | C |
| 15. | Gathering information about the sources used | Identification of sources | 4 hours | 7th December 2017 | C |
| 16. | Creation of a video which demonstrates the product functions | Developed instruction on how to use the product | 4 hours | 14th January 2018 | D |
| 17. | Demonstration of the possible modification and expand of the product | Ideas for the future of the product | 4 hours | 7th February 2018 | D |
| 18. | Application handed for alpha testing | Presentation of the program to the client | 3 hours | 21th February 2018 | E |
| 19. | Feedback from the client | Information about the extent to which my program met the clients' needs and expectations | 2 hours | 1st March 2018 | E |

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| 20. | Recommendations for improvement | The future maintenance and improvements of the product discussed with the clients | 4 hours | 14th March 2018 | E |