Transportation Hackathon

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Professional Computing Practice

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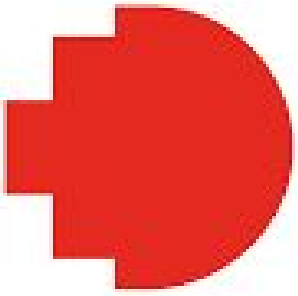

RMIT UNIVERSITY

Transportation Hackathon

Introduction:
With rapidly growth of population, traffic issues are becoming more and more serious these days. There is a need to efficiently use the limited traffic resources to increase the percentage of Melbourne's population who use public transport.
To achieve this we are planning a Hackathon. The hackathon is designed to produce applications for the public to make use of the Victorian government's publicly available data. This report aims to address the following points:

- Logistical information
- Promotion plan
- Goals for potential change
- Agenda
- Related participants

1. Logistical Information

1) Site

The event will be held at Melbourne University. The location is central and we hope to attract more potential attendees by holding it at a place full of students. There is also adequate room and facilities to handle the needs of a programming event.

2) Time

The Hackathon will start on Saturday morning at 9:30am and conclude on Sunday evening at 4:30pm. This should allow enough time for the proceedings. We plan to avoid holding it on a public holiday as most people will have other plans.

3) Theme

This hackathon is target at to improve public transportation use and solve last mile problem. With a particular focus on peak travel periods..

4) Data we are planning to make use of

- Live traffic status
- Bike share stations (From RACV)
- Incidents & alerts (From VicRoads)
- Pedestrian traffic
- Bicycle routes
- Bus stops (From Melbourne data)
- Tram station, train station(PTV)
- Any other data from Victorian Government data, Melbourne data or National Map.

2. Promotion plan:

There are multiple groups of participants that we would like to include in this hackathon and would like to tailor the promotional plans to each group.

Skilled programmers currently working in the industry
We plan to reach out, via email to as many Melbourne based IT businesses as we can and try to organise some internal announcements. It could be possible to arrange teams from rival companies for some friendly competition.

Women
To encourage higher numbers of women participate we will reach out to VicICT 4 Women with the aim of getting their help in organizing some all women teams.

Under represented groups:
We will make an effort to attract programmers from the under represented groups of Indigenous, people with disability, LGBTI and Refugees. To achieve this we will reach out to the following organizations: Indigenous community leaders, Victorian government (Creative State program), unicornsintech.com, Asylum Seeker Resource Centre.
We will also get experienced programmers to act as mentors for these groups through the weekend.

Programming students
To target students we contact all the IT / Computer Science departments at Universities in Victoria. We hope to get internal announcements made. We will also be putting up posters on the campuses.
We will make posts in online beginner programmer communities.

3. Winning entry

The winning entry will be decided by a panel of judges. The judges will be made up of event sponsors, experienced developers and we aim to have a representative judge from each underrepresented group on the panel. The judges will each provide a score based on the presentations from each team. The scores will be based on how well the teams met the criteria of solving last mile transport at peak out using public available data. They will also take into consideration the team members programming prior experience. They are looking for progression as team and not just technical ability.

4. Potential challenge:

1) Financial and site challenge:

Financial and site problem is major problem of this hackathon, time will be spent to negotiate with school to get appropriate site which can provide enough space, devices, 24-hour electricity supply, 24-hour water supply and enough restroom. Financial support from company is also important, for example solve security problem, food problem, prize offer all need money. We can negotiate with transportation company, IT company. Like we will give all final codes for company, to exchange financial support.

2) Security problem:

Security problem is a serious problem of any activity. First, security stuffs are needed from security companies. All participants should be examined before entered. Medical

Security also cannot be ignored, medical staff or an ambulance should be prepared.

3) Food problem

For Australia is a Multicultural country, we need to respect everyone's eating habits, like vegetarians, those who does not eat special meat or those who allergy to some food. Food need to be pre-ordered and pre-prepared from food company.

4) Accreditation Criteria Problem

Every programmer may think himself has the best solution, so grading criteria is important to avoid conflicts and get the best app for this hackathon.

5. Hackathon Schedule:

Saturday	
09:30AM	DOORS OPEN AND BREAKFAST
10:30AM	OPENING CEREMONY & PRESENTATIONS
11:30AM	CODING BEGINS
12:30PM	LUNCH
01:30PM	BREAKOUT SESSION(S)
06:30PM	DINNER
12:00AM	HACK THROUGH THE NIGHT
Sunday	
7:30AM	BREAKFAST
12:30PM	LUNCH
1:30PM	SUBMISSION DEADLINE
2:30PM	ROUND 1 JUDGING
3:30PM	JUDGE DELIBERATION
4:00PM	AWARDS
4:30PM	EVENT CLOSE

6. Related participants

1) **Skilled programmer**

Skill programmers in hackathon will provide more professional solution or more practical solution in the hackathon, they may get good prize from company and give professional advice to other participants.

2) **Students**

Junior students may join in as a volunteer, because most of junior students does not have much programming skill. In the hackathon, they will get a general understanding of future career. For senior, they may give talented ideas, and get advice from skilled programmers.

3) **Under recognized groups**

4) **Public transportation company and map company**

Company will get apps or related codes from this hackathon. This can help company to improve navigation at peak time and alleviate congestion

5) **IT company stuff or HR**

Get more influence among programmers, and to get suitable programmer for company.

6) **General public**

Transportation system will be improved, this will let public avoid congestion area and get destination quicker.

7. Summary of how the event will run

We are encouraging people to form diverse teams with different levels of ability. Once teams are formed they will choose an idea that they are collectively interested in but it must be based on the topic of Melbourne public transport and make use of the data from approved list of providers. We will have experienced developers to help groups choose ideas to match their abilities. Then the hack will begin. Teams will work until 1:30 pm the next day. There will be food provided and teams will have 24-hour access to the venue.

Then the presentations will be given and judges will make their decision on who they think best met the criteria.

8. Conclusion:

This hackathon main target is to improve public transportation and to relieve congestion at peak times. Our goal is to motivate teams to get working software prototypes of their ideas. This should lead to a progression in their designs. Our hope is that some of the prototypes will be taken on as projects after the event. We also aim to make this a very inclusive

event and encourage people from under recognised backgrounds to enter technology.

Appendix

1) **Victorian Government Data. 2017.** *Victorian Government Data*. **[ONLINE] Available at: https://www.data.vic.gov.au/. [Accessed 1 October 2017].**
2) **Melbourne Data. 2017.** *Melbourne Data*. **[ONLINE] Available at:** https://data.melbourne.vic.gov.au/. **[Accessed 1 October 2017].**
3) **NationalMap. 2017.** *NationalMap*. **[ONLINE] Available at: http://nationalmap.gov.au/. [Accessed 1 October 2017].**
4) **Melbourne Data. 2017.** *Tram tracks*. **[ONLINE] Available at: https://data.melbourne.vic.gov.au/Transport-Movement/Tram-tracks/wqka-kyhz. [Accessed 1 October 2017].**
5) **Melbourne Data. 2017.** *Bus stops*. **[ONLINE] Available at: https://data.melbourne.vic.gov.au/Transport-Movement/Bus-stops/ss79-v558. [Accessed 1 October 2017].**
6) **Melbourne Data. 2017.** *Direction signs for pedestrians*. **[ONLINE] Available at: https://data.melbourne.vic.gov.au/Transport-Movement/Direction-signs-for-pedestrians/7vrd-4av5. [Accessed 1 October 2017].**
7) **Melbourne Data. 2017.** *Bicycle routes*. **[ONLINE] Available at: https://data.melbourne.vic.gov.au/Transport-Movement/Bicycle-routes-including-informal-on-road-and-off-/24aw-nd3i. [Accessed 1 October 2017].**
8) **Melbourne Data. 2017.** *Pedestrian traffic*. **[ONLINE] Available at: https://data.melbourne.vic.gov.au/Transport-Movement/Pedestrian-traffic-hourly-count/cb85-mn2u. [Accessed 1 October 2017].**
9) **Melbourne Bike Share. 2017.** *Station map*. **[ONLINE] Available at: https://www.melbournebikeshare.com.au/station-map.html. [Accessed 1 October 2017].**
10) **VicRoads. 2017.** *Incident & alerts page*. **[ONLINE] Available at: https://www.vicroads.vic.gov.au/traffic-and-road-use/incidentalertspage. [Accessed 1 October 2017].**
11) **RACV. 2017.** *Real time traffic information*. **[ONLINE] Available at: https://www.racv.com.au/travel-leisure/holiday-planning/travel-advice/real-time-traffic-information.html. [Accessed 1 October 2017].**
12) **VIC GOV. 2017.** *Traffic road alerts*. **[ONLINE] Available at: http://www.vic.gov.au/transport-vehicles/roads-road-transport/traffic-road-alerts.html. [Accessed 1 October 2017].**
13) **Public Transport Victoria. 2017.** *Maps*. **[ONLINE] Available at: https://www.ptv.vic.gov.au/getting-around/maps/. [Accessed 1 October 2017].**