



Project Report

V 2.0

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Problem Statement

Introduction

29 Kms away from the city centre in Mumbai, lies IIT Bombay campus in Powai. It is spread across an area of 550 acres and is a microcosm of sorts. Serene and pleasant as it may seem with its green environs, a first time visitor may be overwhelmed, trying to find his/her way around the humongous campus. Take a stroll during admissions; as an insider one will face various queries from students and their parents (Where is so and so? How to get to so and so?) Most of the times one could not answer those queries. Embarrassing? Extremely!

Salient Features

- *BIITmaps charts the Institute*

A major problem with the whole area of the psychology of high performance is that there is a degree of mystery about precisely what it involves. We are much more aware of the physical requirements of sports performance or the technical components of selling – but when it comes to the mental aspects of performing under pressure, most people readily acknowledge it is important, but are much less clear as to what it entails. Some of us even get lost. BIITmaps helps demystify the area by simply showing us what is there – it describes the territory.

- *BIITmaps is highly memorable*

Generally maps are complex, hence they somewhat lose their usefulness. BIITmaps' inherent simplicity helps make the terrain more memorable.

- *BIITmaps is especially useful at times of uncertainty*

It seldom occurs that an outsider is certain about his/her path to the destination. BIITmaps becomes useful when one is uncertain and needs some guidance. At these times, BIITmaps is priceless, giving back immediate control to the user. Behaviour becomes focused, directed and full of intent. This intent leads to intensity and commitment.

- *BIITmaps encourages adaptability*

Although maps are often consulted at the start of a journey to plan the route to be taken, the fact that they are used when we are uncertain means that we typically use them during the journey as well. It is sometimes essential to use maps during the journey too. They retain their usefulness at all stages – before, during, and after the journey. And because we can check on our progress literally while we are mid-journey (mid-performance), BIITmap allows us to make any necessary adaptations.

- *BIITmaps proposes mode of transport options*

A user is often not aware of the available means of transport inside the institute. BIITmap not only helps in navigating but it also gives the user multiple means of transport to choose from.

- *BIITmaps produces the shortest and quickest possible route*

Quite often it happens that the user has to reach the destination in a specified time frame. BIITmap comes handy in such a situation. It tells the user the shortest as well as the quickest possible route using different means of transport inside the institute.

BIITmaps is designed to solve the listed issues faced by people in navigating through the IIT Bombay campus.

Algorithm

Objective:

To device a feasible and user-friendly software for users to find their way around the campus of Indian Institute of Technology, Bombay. This shall include options like get directions from point A to point B (using three different means of transport, namely tumtum, cycle and walking), nearest landmarks to a given place, tumtum timings and routes and miscellaneous other options.

Steps:

Step 1: Start the program.

Step 2: Initialize Basic Data:

- 2.1 The map of IIT-Bombay shall be prepared and shall be divided into a grid, such that each block contains at most one landmark. Roads and walking paths shall be accordingly parameterised using these blocks. This grid shall be stored in form of a two-dimensional array. This array shall be the basis of all computations. It will act as the co-ordinate system (legend) for location related survey.

Step 3: Display Menu

- 3.1 The user is prompted to choose an option from a list of displayed features.

Step 4: 1.Directions:

- 4.1 The user shall be prompted to select his current location and destination he wishes to go to, along with his preferred mode of transport.
- 4.2 If he is unaware of his location, he can choose for a list of important landmarks, from where he can choose the appropriate locations.
- 4.3 On having the starting point and destination, the paths connecting the two places along paths of the preferred mode of transport shall be found.
- 4.4 The most feasible paths shall be suggested to the user, along with exact directions of turning. The map shall be displayed as an effective visual aid.

Step 5: 2.Nearest landmarks:

- 5.1 The user shall be asked for the location of his interest.
- 5.2 This location shall be located on the array (legend).
- 5.3 The nearest entries shall be displayed, wherever applicable. The map shall be displayed side by side.

Step 6: 3.Find:

- 6.1 This feature simply helps to find relative locations between two points, indicating direction and distance of separation.
- 6.2 The two points are located on the grid, after accepting these from the user.
- 6.3 The direction shall hence be clear, using corresponding locations on the array.
- 6.4 The distance shall be measured approximately using the fact that dimensions of each square in the grid are known.

Step 7: 4.Hangouts:

- 7.1 This option shall randomly select a place stored in the list of recreational places and display to the user.

Step 8: 5.Tumtum :

- 8.1 The user shall be prompted to select his current location and destination he wishes to go to.
- 8.2 If he is unaware of his location, he can choose for a list of important landmarks, from where he can choose the appropriate locations.
- 8.3 On having the starting point and destination, the tumtums connecting the two places along with their routes shall be found and displayed, along with timings of departure.

Step 9: 6.Help:

9.1 This will be similar to a mini-manual where the actions taking place on selecting various options shall be demonstrated to the user, along with examples to avoid confusions.

Step 10: 7.Exit:

10.1 When the user decides to exit, he is bade goodbye.

Step 11: Close the program.