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Project-Cycle II:
Boongalu APP

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Updated Essential Functional Requirements:

1. Show a list/map of places within a certain area or route such as museums, rivers, restaurants, bars, etc.
2. Should enable the user to select the desired destination(s) from available list in database.
3. The product shall give the user a suggested route based on music, age, mood preferences and desired area (one or more cities).
4. Show popular/favorite routes and places.
5. The product shall display pictures of the places selected.
6. The system shall store user information such as name, favorite routes, favorite places.
7. The system shall store places information such as location, number(if necessary), menu, among others.
8. Allow the user to create routes based on the days that he will be staying near certain places.
9. Should let the user select the amount of hours that he/she wants to spend in a certain place.
10. Gives the user an estimate of the time(in hours) that he/she may spend in a place in order to keep in schedule with the previously selected time frame.
11. The user will be allowed to rate places in a scale from 1 to 5(1=horrible, 2=bad, 3=average, 4=good, 5=great).
12. Gives badges/trophies for completing certain tasks or visiting certain places.
13. Supports uploading of user media to social media platforms, for example: trophies, favorite routes, etc.
14. Should show social media activity of friends (from the past 30 days), such as shared photos, routes completed and given ratings.
15. Show average ratings of businesses, hostelry, museums, natural areas, among others registered on the products database.
16. Support use of GPS on user phone in order to show current position in a map.
17. Keeps track of total mileage traveled (in miles) and visited places.
18. User can create a group (by inviting friends), which allows him/her to choose a route by the given preferences of the whole group.

Horizontal prototype of the system:

Included in the last three pages.

Or it may be accessed at the following link:

<https://drive.google.com/file/d/0B-aWlks4jYS1a0VmY2ZsakhJSTA/view?usp=sharing>

Function Point Analysis:**I.Data Functions**

| <u>Internal Logical Files</u> | <u>RET's</u> | <u>DET's</u> | <u>UFP's</u> |
|--------------------------------------|--------------------------------|---|---------------------|
| User Information File | Personal Information | <ul style="list-style-type: none">• Name• Email• Residence• Age• Favorite places | 7(Low) |
| | Preferences | <ul style="list-style-type: none">• Mood• Music• Settings | |
| | Shareable information | <ul style="list-style-type: none">• Trophies/badges• Favorite routes• Shared photos• Visited Locations• Groups created• Routes travelled | |
| Locations information File | Indoor Locations information | <ul style="list-style-type: none">• Phone• Location• Hours of business• Dress Code• Rating• Picture/logo of the place• Type• Reviews | 7(Low) |
| | Outdoors locations Information | <ul style="list-style-type: none">• Location• Best hours to visit• Rating• Picture of the place• Type• Reviews | |
| Routes Information File | Places selected | <ul style="list-style-type: none">• Name• Location• Route | 7 (Low) |

| <u>External Interface Files</u> | <u>RET's</u> | <u>DET's</u> | <u>UFP's</u> |
|--|---------------------|--|---------------------|
| Tourism Companies File | Events | <ul style="list-style-type: none">• Location• Date• Hour• Price | 5 (Low) |
| Social Media File | Friends/Contacts | <ul style="list-style-type: none">• Name• Photo• Email | 5 (Low) |
| Google Maps File | Map | <ul style="list-style-type: none">• Location• Cities• Map | 5 (Low) |

II. Detailed Transactions:

External Inquiries

| <u>Transaction Name</u> | <u>Screen Name</u> | <u>DETs</u> | <u>FTRs</u> | <u>UFPs</u> |
|-------------------------|----------------------|--|---|-------------|
| Search Locations/events | Search Screen | <ul style="list-style-type: none">Location SuggestionsNamesTypeSearch bar | <ul style="list-style-type: none">Locations information FileTourism Companies File | 3 (Low) |
| Select location | Location Info Screen | <ul style="list-style-type: none">Location namePhoneBusiness hoursDress codeAdd to routePicture/ ImagesRating | <ul style="list-style-type: none">Locations informations File | 3 (Low) |
| View profile | Profile Screen | <ul style="list-style-type: none">NameEmailResidenceAgePhoto/iconsSocial mediaChangeTrophiesSettings | <ul style="list-style-type: none">User Information FileSocial Media File | 4 (Average) |
| Show trophies | Trophies Screen | <ul style="list-style-type: none">TrophiesIconsRankings | <ul style="list-style-type: none">User Information File | 3 (Low) |

External Outputs

| <u>Transaction Name</u> | <u>Screen Name</u> | <u>DETs</u> | <u>FTRs</u> | <u>UFPs</u> |
|-------------------------|--------------------|--|--|-------------|
| Start route | Main Screen | <ul style="list-style-type: none">RouteLocationsMapProfileCurrent Location | <ul style="list-style-type: none">Route Information FileGoogle Maps File | 4 (Low) |
| Location Suggestions | Search Screen | <ul style="list-style-type: none">Locations/ Events nameType | <ul style="list-style-type: none">User Information FileLocation Information FileTourism Companies File | 4 (Low) |
| Ranking | Ranking Screen | <ul style="list-style-type: none">Trophies countFriendsRankingImagesTotal trophies left to be #1 | <ul style="list-style-type: none">Social Media FileUser Information File | 4 (Low) |

External Input

| <u>Transaction Name</u> | <u>Screen Name</u> | <u>DETs</u> | <u>FTRs</u> | <u>UFPs</u> |
|----------------------------|----------------------|--|---|-------------|
| Add location to route | Location Info Screen | <ul style="list-style-type: none">• Add Route | <ul style="list-style-type: none">• Routes Information File | 3 (Low) |
| Change profile Information | Profile Screen | <ul style="list-style-type: none">• Name• Residence• Age• Email | <ul style="list-style-type: none">• User Information File | 3 (Low) |
| Give rating | Location Info Screen | <ul style="list-style-type: none">• Stars Icon | Locations Information File | 3(Low) |

Average Transactions

| <u>Transaction Name</u> | <u>Transaction Type</u> | <u>Average Function Points</u> |
|--|-------------------------|--------------------------------|
| Show Location Menu(food) | EQ | 4 |
| Create New User Profile | EI | 4 |
| Show Favorite Locations | EQ | 4 |
| Upload Trophies to social media | EQ | 4 |
| Share Routes to social media | EQ | 4 |
| Create Social Group | EI | 4 |
| Enter Review of Location | EI | 4 |
| Change App Settings | EI | 4 |
| Show social media activity | EQ | 4 |
| Show estimate time that can be spent in a place (in hours) | EO | 5 |
| Show estimate travelled (in miles) | EO | 5 |

Total Unadjusted Function Points: 116

Effort, Time of Development, Staff:

Determine the LOCs based on FPs (60 LOCs in Java per function point):

$$\text{LOCs} = 116 * 60 = 6960 = 6.96 \text{ kLOCs}$$

Use Basic COCOMO Semi-Detached project:

- Effort in Staff Month ($E = 3.0 * (Size)^{1.12}$) size in KLOC:
 - $E=26.35$
- Time of Development ($TDEV = 2.5 * E^{0.35}$)
 - $TDEV = 7.86$
- Average Staff ($\frac{E}{TDEV}$)
 - Average Staff = $\frac{26.35}{7.86} = 3.35 \Rightarrow 4$

Risk Management Plan:

| <u>Risk</u> | <u>Probability</u> | <u>Impact</u> | <u>Exposure</u> | <u>Mitigation Plan</u> |
|---|--------------------|---------------|-----------------|--|
| Lack of project managing experience | 0.7 | 4.5 | 3.15 | Hire someone with more experience in project management/ask for feedback from more experienced managers. |
| Lack of team knowledge on the programming language. | 0.3 | 3 | 0.9 | Motivate team member to do pair programming. |